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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 MELISSA GARDNER
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, Melissa Gardner, declare:

2 1. I am an attorney in the law firm of Lief, Cabraser, Heimann & Bernstein, LLP, a
3 member of the State Bar of California, and am admitted to practice before the United States
4 District Court for the Northern District of California. I am one of the counsel for Plaintiffs in this
5 action. I make this declaration based on my own personal knowledge. If called upon to testify, I
6 could and would testify competently to the truth of the matters stated herein.

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

8 3. Attached hereto as **Exhibit 1** is a true and correct copy of excerpts from the
9 transcript of the hearing held before the Honorable Phyllis Hamilton on October 1, 2014.

10 4. Attached hereto as **Exhibit 2** is a true and correct copy of the Expert Report of
11 Jennifer Golbeck in Support of Plaintiffs' Motion for Class Certification.

12 5. Attached hereto as **Exhibit 3** is a true and correct copy of Facebook's
13 Supplemental Responses and Objections to Plaintiffs' First Set of Interrogatories, which was
14 served on September 8, 2015.

15 6. Attached hereto as **Exhibit 4** is a true and correct copy of a document starting with
16 Bates stamp number FB000005502-R, which Facebook produced in this action.

17 7. Attached hereto as **Exhibit 5** are true and correct copies of excerpts from the
18 September 25, 2015 deposition of Ray He in his personal capacity and in his capacity as a
19 designee under Federal Rule of Civil Procedure 30(b)(6).

20 8. Attached hereto as **Exhibit 6** is a true and correct copy of a document starting with
21 Bates stamp number FB000008489, which Facebook produced in this action.

22 9. Attached hereto as **Exhibit 7** is a true and correct copy of a document starting with
23 Bates stamp number FB000003118, which Facebook produced in this action.

24 10. Attached hereto as **Exhibit 8** is a true and correct copy of a document starting with
25 Bates stamp number FB000014365, which Facebook produced in this action.

26 11. Attached hereto as **Exhibit 9** is a true and correct copy of a document starting with
27 Bates stamp number FB000003335, which Facebook produced in this action.

28

1 12. Attached hereto as **Exhibit 10** is a true and correct copy of a document starting
2 with Bates stamp number FB000004996, which Facebook produced in this action.

3 13. Attached hereto as **Exhibit 11** is a true and correct copy of a document starting
4 with Bates stamp number FB000012539, which Facebook produced in this action.

5 14. Attached hereto as **Exhibit 12** is a true and correct copy of a document designated
6 FB000008268, which Facebook produced as a native file in this action.

7 15. Attached hereto as **Exhibit 13** is a true and correct copy of a document starting
8 with Bates stamp number FB000008722, which Facebook produced in this action.

9 16. Attached hereto as **Exhibit 14** is a true and correct copy of a document starting
10 with Bates stamp number FB000000594, which Facebook produced in this action.

11 17. Attached hereto as **Exhibit 15** is a true and correct copy of a document starting
12 with Bates stamp number FB000008304, which Facebook produced in this action.

13 18. Attached hereto as **Exhibit 16** is a true and correct copy of a document starting
14 with Bates stamp number FB000001265, which Facebook produced in this action.

15 19. Attached hereto as **Exhibit 17** is a true and correct copy of a document starting
16 with Bates stamp number FB000006429, which Facebook produced in this action.

17 20. Attached hereto as **Exhibit 18** is a true and correct copy of a document starting
18 with Bates stamp number FB000008271, which Facebook produced in this action.

19 21. Attached hereto as **Exhibit 19** is a true and correct copy of a PowerPoint
20 presentation entitled *Quarterly Earnings Slide Q4 2012* by Facebook, Inc., available online, at:
21 [http://files.shareholder.com/downloads/AMDA-NJ5DZ/2297890522x0x631721/fc91bd68-c60f-](http://files.shareholder.com/downloads/AMDA-NJ5DZ/2297890522x0x631721/fc91bd68-c60f-46c0-b3d4-f26455e115f7/FB_Q412_InvestorDeck.pdf)
22 [46c0-b3d4-f26455e115f7/FB_Q412_InvestorDeck.pdf](http://files.shareholder.com/downloads/AMDA-NJ5DZ/2297890522x0x631721/fc91bd68-c60f-46c0-b3d4-f26455e115f7/FB_Q412_InvestorDeck.pdf).

23 22. Attached hereto as **Exhibit 20** is a true and correct copy of Defendant Facebook,
24 Inc.'s Supplemental Responses and Objections to Plaintiffs' Narrowed Second Set of
25 Interrogatories, which, as Exhibit 1 thereto attaches a chart identifying documents produced by
26 Defendant in this action associated with a selection of the private messages sent by each of the
27 proposed Class Representatives, as well as the sender, recipient, date, time, and URL associated
28 with each message.

1 23. Attached hereto as **Exhibit 21** is a true and correct copy of a document starting
2 with Bates stamp number FB000000001, which Facebook produced in this action.

3 24. Attached hereto as **Exhibit 22** is a true and correct copy of a document starting
4 with Bates stamp number FB000000032, which Facebook produced in this action.

5 25. Attached hereto as **Exhibit 23** is a true and correct copy of a document starting
6 with Bates stamp number FB000000058, which Facebook produced in this action.

7 26. Attached hereto as **Exhibit 24** is a true and correct copy of a document starting
8 with Bates stamp number FB000000011, which Facebook produced in this action.

9 27. Attached hereto as **Exhibit 25** is a true and correct copy of a document starting
10 with Bates stamp number FB000000017, which Facebook produced in this action.

11 28. Attached hereto as **Exhibit 26** is a true and correct copy of a document starting
12 with Bates stamp number FB000000043, which Facebook produced in this action.

13 29. Attached hereto as **Exhibit 27** is a true and correct copy of a document starting
14 with Bates stamp number FB000006435, which Facebook produced in this action.

15 30. Attached hereto as **Exhibit 28** is a true and correct copy of a document starting
16 with Bates stamp number FB000004406, which Facebook produced in this action.

17 31. Attached hereto as **Exhibit 29** is a true and correct copy of a document starting
18 with Bates stamp number FB000007924, which Facebook produced in this action.

19 32. Attached hereto as **Exhibit 30** is a true and correct copy of a document starting
20 with Bates stamp number FB000000502, which Facebook produced in this action.

21 33. Attached hereto as **Exhibit 31** is a true and correct copy of Plaintiffs' First Set of
22 Requests for Production of Documents to Defendant.

23 34. Attached hereto as **Exhibit 32** is a true and correct copy of a letter from
24 Facebook's counsel Joshua Jessen to Plaintiffs' counsel Hank Bates, dated April 10, 2015.

25 35. Attached hereto as **Exhibit 33** is a true and correct copy of the Expert Report of
26 Fernando Torres in Support of Plaintiffs' Motion for Class Certification.

27 36. Attached hereto as **Exhibit 34** is a true and correct copy of a document starting
28 with Bates stamp number FB00000802, which Facebook produced in this action.

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I declare under penalty of perjury that the foregoing is true and correct and that this Declaration was signed in San Francisco, California, on November 13, 2015.

LIEFF CABRASER HEIMANN & BERNSTEIN, LLP

By: /s/Melissa Gardner
 Melissa Gardner

EXHIBIT 1

UNITED STATES DISTRICT COURT **CERTIFIED COPY**
NORTHERN DISTRICT OF CALIFORNIA

BEFORE THE HONORABLE PHYLLIS J. HAMILTON, JUDGE

MATTHEW CAMPBELL, MICHAEL)	MOTION TO DISMISS
HURLEY, AND DAVID SHADPOUR,)	
)	
PLAINTIFFS,)	PAGES 1 - 77
)	
VS.)	NO. C 13-05996PJH
)	
FACEBOOK, INC.,)	
)	
DEFENDANT.)	OAKLAND, CALIFORNIA
_____)	WEDNESDAY, OCTOBER 1, 2014

REPORTER'S TRANSCRIPT OF PROCEEDINGS

APPEARANCES:

FOR PLAINTIFFS: LIEFF CABRASER HEIMANN & BERNSTEIN LLP
275 BATTERY STREET, 30TH FLOOR
SAN FRANCISCO, CALIFORNIA 94111
BY: MELISSA A. GARDNER,
MICHAEL W. SOBOL, ATTORNEY AT LAW

LIEFF CABRASER HEIMANN & BERNSTEIN LLP
780 THIRD AVENUE, 48TH FLOOR
NEW YORK, NEW YORK 10017-2024
BY: NICHOLAS R. DIAMAND, ATTORNEY AT LAW

(APPEARANCES CONTINUED NEXT PAGE)

REPORTED BY: RAYNEE H. MERCADO, CSR NO. 8258

PROCEEDINGS REPORTED BY ELECTRONIC/MECHANICAL STENOGRAPHY;
TRANSCRIPT PRODUCED BY COMPUTER-AIDED TRANSCRIPTION.

RAYNEE H. MERCADO, CSR, RMR, CRR, FCRR (510) 451-7530

1 **MR. JESSEN:** SURE, YOUR HONOR.

2 IF -- IF I CAN PUT THIS CASE INTO CONTEXT, TO BEGIN WITH,
3 THIS IS A CASE -- THE CONSOLIDATED AMENDED COMPLAINT
4 CHALLENGES ROUTINE COMMERCIAL CONDUCT THAT WAS COMPLETELY
5 INNOCUOUS THAT PLAINTIFFS ADMIT CEASED OVER TWO YEARS AGO,
6 AROUND OCTOBER OF 2012.

7 THE REASON THERE WAS A 15-MONTH DELAY BETWEEN FILING OF
8 THE FIRST COMPLAINT IN THIS CASE AND THE CESSATION OF THE
9 CONDUCT WAS VERY SIMPLE. THIS IS A COPY-CAT LAWSUIT.

10 **THE COURT:** WHEN YOU SAY "THE CESSATION OF CONDUCT,"
11 WHAT SPECIFIC CONDUCT CEASED?

12 **MR. JESSEN:** YEAH, WELL, THE CONDUCT THAT CEASED
13 WAS -- AND I'M HAPPY TO GET INTO THE DETAILS. THERE ARE A
14 NUMBER OF FACTORS THAT THERE ARE -- THERE -- FACEBOOK HAS
15 SOCIAL PLUG-INS, WHICH PLAINTIFFS DISCUSS IN -- COMPLAINT, AND
16 WE DISCUSS IN OUR BRIEF. AND THESE SOCIAL PLUG-INS APPEAR ON
17 THIRD-PARTY WEBSITES. SO AN EXAMPLE WE GIVE IN OUR MOTION IS
18 WE MIGHT HAVE A *NEW YORK TIMES* TRAVEL ARTICLE THAT HAS THE
19 PARTICULAR SOCIAL PLUG-IN. IF YOUR HONOR'S BROWSING THE --

20 (OFF-THE-RECORD DISCUSSION.)

21 **THE COURT:** SLOW DOWN.

22 **MR. JESSEN:** UNDERSTOOD.

23 LOTS OF DIFFERENT TECHNOLOGY COMPANIES HAVE SOCIAL
24 PLUG-INS, OKAY, FACEBOOK AMONG THEM. SO IF YOU GO TO,
25 EXAMPLE, A *NEW YORK TIMES* TRAVEL ARTICLE, IT MIGHT HAVE THE

1 FACEBOOK SOCIAL PLUG-IN, WHICH CAN TAKE DIFFERENT FORMS, ONE
2 OF WHICH IS THE "LIKE" BUTTON. OFTENTIMES, THAT SOCIAL
3 PLUG-IN WILL HAVE A NUMBER NEXT TO IT, AND THAT IS THE NUMBER
4 OF PEOPLE WHO HAVE "LIKED" THIS PARTICULAR -- THIS PARTICULAR
5 WEB PAGE.

6 PRIOR TO OCTOBER OF 2012, ONE OF THE THINGS THAT WAS
7 INCLUDED IN THAT ANONYMOUS AGGREGATE NUMBER WAS IF A FACEBOOK
8 USER SENT A MESSAGE ON THE FACEBOOK PLATFORM TO ANOTHER
9 FACEBOOK USER AND INCLUDED A -- A URL, A LINK TO THAT WEBSITE,
10 THEN THE -- THE COUNT ON THAT WEBSITE WOULD GO UP.

11 NOW, THERE ARE OTHER THINGS, OF COURSE, THAT GO INTO THAT.
12 IF SOMEONE AFFIRMATIVELY IS ON THE SITE AND AFFIRMATIVELY
13 CLICKS "LIKE," THAT INCREASES IT. IF YOU SHARE THAT ON --
14 WITH YOUR FRIENDS -- SO THERE WERE DIFFERENT -- THERE ARE
15 DIFFERENT FACTORS THAT --

16 **THE COURT:** SO THE "LIKE" NUMBER WOULD INCREASE --

17 **MR. JESSEN:** CORRECT.

18 **THE COURT:** -- ONCE IT'S SENT BY A FACEBOOK USER
19 AND --

20 **MR. JESSEN:** CORRECT.

21 **THE COURT:** -- TO A RECIPIENT, IT WOULD INCREASE BY
22 ONE? AND THEN IF THE PERSON -- IF THE RECIPIENT CLICKED ON
23 IT, IT WOULD INCREASE BY ANOTHER?

24 **MR. JESSEN:** I BELIEVE THAT'S CORRECT, YOUR HONOR.

25 THERE ARE MULTIPLE THINGS THAT GO INTO IT -- NOW, THERE

1 WAS A -- THERE'S SOME DISCUSSION OF THIS IN THE COMPLAINT.
2 THERE WAS A BUG FOR A PERIOD OF TIME WHERE THE COUNT WAS
3 ACTUALLY GOING UP BY TWO, BUT -- BUT PUTTING THE BUG ASIDE,
4 YES, THAT WAS -- IF YOU INCLUDED THE URL IN THE MESSAGE, THIS
5 ANONYMOUS AGGREGATE NUMBER, WHICH IS NOT LINKED TO A PERSON AT
6 ALL, WENT UP.

7 AND THAT'S THE CONDUCT, THAT'S -- THAT STOPPED AROUND
8 OCTOBER OF 2012. AND THAT'S REALLY WHAT THIS -- THIS CASE IS
9 ABOUT.

10 NOW --

11 **THE COURT:** WAIT. THE CONDUCT THAT STOPPED IS THAT
12 THE NUMBERS WOULDN'T GO UP.

13 **MR. JESSEN:** THAT'S CORRECT, YOUR HONOR.

14 **THE COURT:** OKAY. AFTER THE OCTOBER --

15 **MR. JESSEN:** THAT'S CORRECT. THE NUMBER --

16 **THE COURT:** FACEBOOK STOPPED COUNTING THEM IN THE
17 "LIKE" --

18 **MR. JESSEN:** CORRECT. IN -- FOR -- FOR A SHARE IN A
19 MESSAGE. THAT'S THE CONDUCT THAT STOPPED.

20 AND THAT'S REALLY -- MAYBE WE'LL HAVE SOME DISPUTE, BUT
21 THAT'S REALLY WHAT'S DRIVING THIS CASE.

22 PLAINTIFFS INITIALLY, AS YOUR HONOR --

23 **THE COURT:** BUT IS IT REALLY JUST THE NUMBER THAT
24 APPEARS IN THE "LIKE" BUTTON THAT THE PLAINTIFFS ARE
25 COMPLAINING ABOUT? ISN'T IT ACTUALLY THE SCANNING -- AND I'M

1 NOT EXACTLY SURE WHAT THAT MEANS, AND I'M SURE SOMEONE WILL
2 TELL ME -- OR REVIEW OF THE ACTUAL MESSAGE THAT WAS SENT FROM
3 A FACEBOOK USER TO SOMEONE ELSE? SO MY QUESTION IS -- WHEN I
4 ASKED YOU WHAT CONDUCT CEASED --

5 **MR. JESSEN:** YES.

6 **THE COURT:** -- YOU'VE EXPLAINED THAT THE CONDUCT OF
7 COUNTING THAT TRANSMISSION AS A "LIKE" CEASED.

8 **MR. JESSEN:** CORRECT.

9 **THE COURT:** BUT DID THE ACTUAL CONDUCT OF SCANNING OR
10 LOOKING AT THESE MESSAGES THAT ARE SENT STOP?

11 **MR. JESSEN:** ANYTHING THAT'S SHARED ON -- FACEBOOK IS
12 A PLATFORM. IT'S THE WORLD'S LARGEST SOCIAL NETWORKING
13 SERVICE. IT HAS OVER A BILLION USERS.

14 ANYTHING THAT IS SHARED ON THAT SITE IS BY DEFINITION
15 ANALYZED BY COMPUTERS. IT HAS TO BE FOR A VARIETY OF REASONS,
16 ABOVE ALL OF WHICH ARE PROTECTING THE INTEGRITY OF THE SITE.

17 AS YOU CAN IMAGINE, SUCH A LARGE PLATFORM IS SUBJECT TO
18 ALL KIND OF ATTEMPTS TO HACK THE SITE, SERVE SPAM TO ITS
19 USERS, MAL-WARE, SO ANY -- ANYTHING THAT'S SHARED ON THE SITE,
20 YOUR HONOR, IS GOING TO BE SUBJECT TO AUTOMATIC -- AUTOMATED
21 SYSTEMS THAT ARE DESIGNED TO FILTER SPAM, PROTECT THE
22 INTEGRITY OF THE SITE, AND EVEN VERY BASIC --

23 **THE COURT:** SO THE ANSWER TO MY QUESTION IS NO, THAT
24 THAT CONDUCT -- THAT THE PROCESS STILL EVALUATES THE -- THE --
25 WHAT'S EITHER THE CONTENT OF OR WHAT'S ATTACHED TO THE

1 MESSAGES THAT ARE SENT.

2 **MR. JESSEN:** THERE -- THERE IS ANALYSIS THAT'S GOING
3 ON. WE DON'T -- WE DON'T THINK THAT THAT ANALYSIS RUNS AFOUL
4 OF THE WIRETAP ACT OR ANY OTHER CRIMINAL STATUTE. BUT --
5 AND --

6 AND AN IMPORTANT POINT TO BEAR IN MIND, YOUR HONOR, IS
7 THEY'RE NOT CHALLENGING -- THEY'RE CHALLENGING A VERY SPECIFIC
8 THING, WHICH WAS THEY SAY, FACEBOOK, YOU WERE USING THESE
9 SHARES TO INCREASE AN -- AN ANONYMOUS NUMBER. THEY'RE NOT
10 CHALLENGING THAT VARIOUS PROCESSES HAVE TO TAKE PLACE ON
11 THE -- ON THE PLATFORM TO PREVENT SPAM, TO PREVENT THINGS LIKE
12 CHILD PORNOGRAPHY.

13 THERE ARE SYSTEMS IN PLACE TO KEEP FACEBOOK AND ITS USERS
14 SAFE AND SECURE. SO, OF COURSE, THAT'S STILL GOING ON, YOUR
15 HONOR. AND THEY'RE NOT -- THAT'S NOT -- THEY'RE NOT
16 COMPLAINING ABOUT THAT.

17 AND THIS IS, I THINK, AN IMPORTANT POINT ON REALLY THE
18 WIRETAP ACT CLAIM AND ALSO THE STATE LAW COROLLARY, WHICH IS
19 631. WE'VE LAID OUT A NUMBER OF REASONS WHY WE THINK THAT
20 THAT CLAIM FAILS AS A MATTER OF LAW. ONE OVERARCHING THING TO
21 BEAR IN MIND, I THINK, IS THESE ARE CRIMINAL STATUTES THAT
22 THEY'RE ASSERTING, PASSED IN -- INITIALLY IN (SIC) 1960'S AND
23 THEN IN THE 1980'S, YEARS BEFORE THE WORLDWIDE WEB EVEN
24 EXISTED. BUT THEY'RE CRIMINAL STATUTES.

25 AND UNDER CLEAR SUPREME COURT PRECEDENT, NINTH CIRCUIT

1 GET TO TO RESOLVE THE MOTION --

2 **THE COURT:** PERHAPS.

3 **MR. JESSEN:** "CONSENT" I THINK CAN BE RESOLVED AND,
4 FRANKLY, "ORDINARY COURSE OF BUSINESS" BASED UPON THE LEGAL
5 STANDARD AND WHAT THEY'VE ALLEGED IN THEIR COMPLAINT AND
6 OBVIOUSLY ON THE 632 AND UCL.

7 **THE COURT:** OKAY. ALL RIGHT. MATTER STANDS
8 SUBMITTED.

9 THANK YOU.

10 **MR. SOBOL:** THANK YOU FOR YOUR PATIENCE, YOUR HONOR.


11 **MR. JESSEN:** THANK YOU, YOUR HONOR.

12 (PROCEEDINGS WERE CONCLUDED AT 11:05 A.M.)

13 --000--

14 **CERTIFICATE OF REPORTER**

15
16 I CERTIFY THAT THE FOREGOING IS A CORRECT TRANSCRIPT
17 FROM THE RECORD OF PROCEEDINGS IN THE ABOVE-ENTITLED MATTER.
18 I FURTHER CERTIFY THAT I AM NEITHER COUNSEL FOR, RELATED TO,
19 NOR EMPLOYED BY ANY OF THE PARTIES TO THE ACTION IN WHICH THIS
20 HEARING WAS TAKEN, AND FURTHER THAT I AM NOT FINANCIALLY NOR
21 OTHERWISE INTERESTED IN THE OUTCOME OF THE ACTION.

22
23 

24 RAYNEE H. MERCADO, CSR, RMR, CRR, FCRR, CCRR

25 SATURDAY, DECEMBER 20, 2014

EXHIBIT 2

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13 *Attorneys for Plaintiffs and the Proposed Class*

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15 NORTHERN DISTRICT OF CALIFORNIA
16

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.

Case No. C 13-05996 PJH (MEJ)

**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. QUALIFICATIONS**

2 1. As indicated in my *curriculum vitae*, attached hereto as Exhibit A, I have been a
3 professor in the College of Information Studies (“The iSchool”) at the University of Maryland
4 since 2007 (assistant professor from 2007-2013, associate professor with tenure to present),
5 where I have focused my research and teaching efforts on aspects of social media and the web.

6 2. I have been doing freelance professional web design and programming since 1993.
7 I worked as a web designer for the University of Chicago from 1995-2000. I operated my own
8 web design company, Gargoyle Web Design, from 1999-2001, which I closed when I began my
9 Ph.D. work.

10 3. I have taught university level classes on the web and social media, including:
11 “Analyzing Social Networks and Social Media,” “Social Networks: Technology and Society,”
12 “Development of Internet Applications,” “Fundamentals of Human-Computer Interaction,”
13 “Information Users in Social Context,” and “Small Worlds, Social Networks, and Algorithms.” In
14 addition, I have published and presented many articles in refereed journals and conferences, and
15 over 100 of these relate to social media and the web.

16 4. I received two Bachelor’s degrees, in Computer Science and Economics, from the
17 University of Chicago in 1999, a Master’s degree in Computer Science from the University of
18 Chicago in 2001, and a Ph.D. in Computer Science from the University of Maryland in 2005. My
19 Ph.D. thesis focused on social media and was titled “Computing and Applying Trust in Web-
20 based Social Networks.”

21 5. I have been teaching at universities on issues related to computer science, the web,
22 and social media since 1999 when I was a Lecturer in the Computer Science Department at the
23 University of Chicago. Over the past fourteen years, in a variety of different capacities, I have
24 taught classes at University of Chicago, George Mason University, Johns Hopkins University,
25 Georgetown University, George Washington University, American University, and University of
26 Maryland.

27 6. Through my research and studies, I have won a variety of awards including the
28 2015 University of Maryland Research Communicator Impact Award, 2015 University of

1 Maryland System Mentoring Award, Best Paper Award at the 2011 IEEE Social Computing
2 Conference, Best Paper Award at the 2009 International Semantic Web Conference, Research
3 Fellow for the Web Science Research Initiative (2008 – present), IEEE Intelligent Systems Ten to
4 Watch in May 2006, and the 2005 DARPA IPTO Young Investigator Award.

5 7. I also presented a TED talk titled “The curly fry conundrum: Why social media
6 ‘likes’ say more than you might think.”¹ It received 1.7 million views and was named one of
7 TED’s “Most Powerful Talks of 2014.”² TED (Technology, Engineering, Design) is a non-profit
8 organization that presents “Ideas Worth Spreading.” Videos of their invited presentations have
9 over half a billion total views.

10 8. I have authored over 100 scientific papers related to the web. Most recently, I have
11 authored two books on social media, entitled “Social Media Investigation” and “Analyzing the
12 Social Web.” Both books focus on various aspects of web and social media interaction, such as
13 using location-based services on mobile devices as well as interaction with friends for business
14 purposes. I have also authored other books including “Trust on the World Wide Web: A Survey”
15 and “Art Theory for Web Design.”

16 9. I have given expert testimony in the following proceedings:

- 17 • *Rembrandt Social Media LP v. Facebook Inc. et al*, No. 13-cv-00158
18 U.S. District Court for the Eastern District of Virginia
2013-2014 (plaintiff)
- 19 • *Peter Daou and James Boyce vs. Ariana Huffington, Kenneth Lerer and*
20 *Thehuffingtonpost.com*, No. 651997/2010
21 Supreme Court of The State Of New York, County of New York 2013-
22 2014 (plaintiff)
- 23 • *Blue Calypso Inc. v. Groupon Inc.*, No. 12-cv-00486,
24 U.S. District Court for the Eastern District of Texas
25 2014-2015 (plaintiff)

26
27 ¹ Available at
28 https://www.ted.com/talks/jennifer_golbeck_the_curly_fry_conundrum_why_social_media_likes_say_more_than_you_might_think?language=en.

² See <http://yearinideas.ted.com/2014/>.

1 10. A copy of my full *curriculum vitae* is attached as Exhibit A to this report. I am
2 being compensated at the rate of \$400 per hour for my services in this matter, and payment is not
3 contingent on the outcome of this proceeding.

4 **II. METHODOLOGY AND SUMMARY OF CONCLUSIONS**

5 11. I am submitting this report on behalf of the Plaintiffs. I have been retained as a
6 technical expert to study and provide my opinions regarding the topics discussed in paragraph 16
7 below. My opinions, as well as the evidence I rely upon to support them, are set forth in detail in
8 this report. The contents of the various exhibits that I identify by name are meant to be
9 incorporated, in their entirety, by such reference.

10 12. In preparing this report, I have employed methods and analyses of a type
11 reasonably relied upon by experts in my field in forming opinions or inferences on the subject.
12 The opinions expressed are based upon a reasonable degree of computer science certainty.

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

20 14. In forming my opinions, I have reviewed source code which I understand was
21 provided by Facebook’s counsel and which was represented as containing the relevant source
22 code between some time in 2009 and December 2012.

23 15. Additionally I have reviewed numerous internal Facebook documents produced in
24 this litigation, as well as certain public materials. The list of documents I have considered in
25 forming my opinions is attached to this report as Exhibit B.

26 16. I have been asked by the Plaintiffs through their counsel to opine on the following
27 issues:

- 28 a. The structure and function of Facebook’s messaging system;

- 1 b. Facebook’s interception of Private Message content, including:
 - 2 i. Whether and what devices Facebook employs to intercept message
 - 3 content;
 - 4 ii. Whether the interceptions occurred in transit;
 - 5 iii. Whether the interception of Private Message content was necessary
 - 6 for Facebook to deliver private messages;
 - 7 c. Facebook’s subsequent use of that Private Message content;
 - 8 d. Whether the class members can be readily determined based on Facebook’s
 - 9 own records; and
 - 10 e. Whether the Facebook’s uniformly processed Private Messages during the
 - 11 relevant period.

12 17. Based on my review and analysis of Facebook’s source code as well as internal
13 Facebook documents and deposition testimony, I conclude the following:

- 14 a. The structure and function of Facebook’s messaging system is described in
- 15 detail in Section III below;
- 16 b. Facebook intercepted and redirected user’s Private Message content using
- 17 various code-based devices while the message was in transit, and this interception was not
- 18 necessary for Facebook to deliver private messages;
- 19 c. Facebook used the intercepted Private Message content [REDACTED]
- 20 [REDACTED]
- 21 [REDACTED] as well as to increment the “Like” social plugin counter;
- 22 d. The class members can be determined from Facebook’s own records using
- 23 various query methods and through self-identification; and
- 24 e. Facebook’s source code operated consistently during the relevant period.
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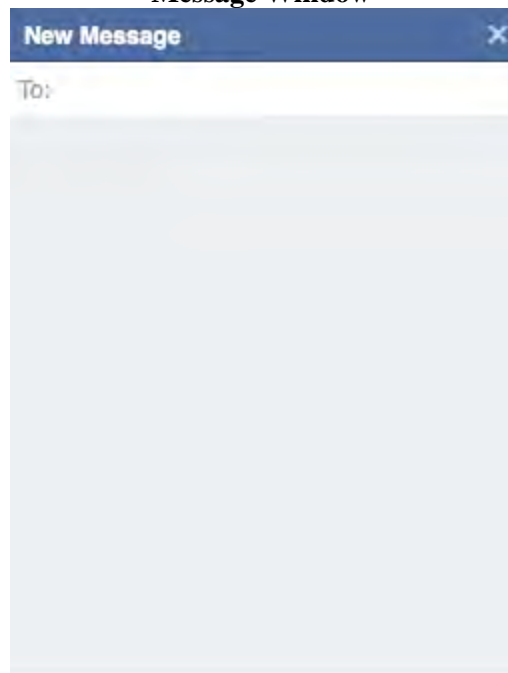
1 **III. FACEBOOK’S INTERCEPTION OF PRIVATE MESSAGE CONTENT**

2 **A. Facebook’s Private Message Architecture Functionality**

3 **1. Overview of Facebook’s Private Message Architecture**

4 18. An overview of Facebook’s Private Message architecture is useful. Say Alice is
5 sending a Private Message to Bob. In order to do so, Alice opens her Facebook message window
6 and begins to compose her message.

7 Figure 1
8 **Message Window**



18
19 19. She types her text and, if she types, pastes, or otherwise enters a URL into the
20 body of the message, [REDACTED]

21 [REDACTED]³

22
23 20. Facebook describes this process in its Supplemental Responses and Objections to
24 Plaintiffs’ First Set of Interrogatories: [REDACTED]

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26
27 ³ Facebook’s servers are the computers on which the Facebook system operates. They store code
28 and data, run the code, provide web content, and manage back-end functionality. Essentially,
every part of Facebook other than the code that runs in the user’s browser is running on Facebook
servers, and those servers provide every element of Facebook that a user interacts with.

1 [REDACTED]

2 [REDACTED]⁴

3 21. The vast majority of web users have JavaScript enabled. In 2010, Yahoo!
4 engineers issued a report stating that 1-2% of traffic came from users without Javascript enabled.⁵
5 Those numbers appear to have remained relatively stable over time. A 2013 analysis showed
6 about 1% of users were not accessing JavaScript-based content.⁶ Thus, 98-99% of users have
7 JavaScript active and this Facebook code would run in their browsers.

8 22. The URL detection process is also described by Ray He, an engineer at Facebook.
9 In his September 25, 2015 deposition (He Depo.), Mr. He states:

10 [REDACTED]
11 [REDACTED]
12 [REDACTED]

13 23. Based on my analysis of Facebook’s source code (the “Code”), this process
14 appears in [REDACTED]

15 [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED]
23 [REDACTED]
24 [REDACTED]

25 ⁴ *Id.* at 12:26 – 13:2.

26 ⁵ *See* <https://web.archive.org/web/20101016010319/http://developer.yahoo.com/blogs/ydn/posts/2010/10/how-many-users-have-javascript-disabled/>

27 ⁶ *See* <https://gds.blog.gov.uk/2013/10/21/how-many-people-are-missing-out-on-javascript-enhancement/>

28 ⁷ He Depo. at 187:7-11.

⁸ FB000027054; FB000027055.

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24. After this Code [REDACTED]

[REDACTED]

25. The process of [REDACTED]

[REDACTED]

26. As mentioned above, [REDACTED]

[REDACTED]

27. The preview then appears as part of the message that the Alice is composing

[REDACTED]

⁹ Facebook’s Supplemental Responses and Objections to Plaintiffs’ First Set of Interrogatories at 13:4-5
¹⁰ The [REDACTED] is analogous to the “web crawler” referenced in Plaintiffs’ Consolidated Amended Complaint (“CAC”).
¹¹ API stands for “Application Program Interface.” It’s a set of code one can use to interact with a system (Facebook in this case).
¹² FB000027055
¹³ Facebook’s Supplemental Responses and Objections to Plaintiffs’ First Set of Interrogatories at 13:19-20

Figure 2
Message Window



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28. However, this preview in Alice's message is not the [REDACTED]. The preview returned is [REDACTED].¹⁴

29. As described in further detail below, [REDACTED] prior to Alice's typing the URL into her Private Message, Facebook's [REDACTED].

30. When Alice finishes the message and hits send, both the text of her message and the [REDACTED] are sent to Facebook's servers. In a series of steps, detailed further below, Facebook processes the message [REDACTED], ultimately delivering the message to Bob. For that high level message sending to happen, there are many sub-processes that have to take place.

¹⁴ Facebook's Supplemental Responses and Objections to Plaintiffs' First Set of Interrogatories at 14:5.

1 Michael Adkins, a Facebook engineer, provides a broad overview of this transmission process in
2 his October 28, 2015 deposition (Adkins Depo.):

3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED]

13 31. The focus of this report, which is the interception and acquisition of the [REDACTED]

14 [REDACTED] in Private Messages, occurs early in the above-described transmission, [REDACTED]
15 [REDACTED].

16 **B. Facebook’s Interception and [REDACTED] of Private Message Content**

17 **1. Creation of Share Objects**

18 32. Facebook has large and complex data behind its site. They store this in a data
19 model called TAO (The Associations and Objects).¹⁵ As the name suggests, there are two pieces
20 in this model: objects and associations.

21 33. Objects represent *things* on Facebook – users, pages, checkins, comments,
22 locations, etc. Associations represent *relationships* between objects. Those could be friendships
23 between users, a like that connects a user to a page, or a location that is tied to a user check-in.

24 34. There are a number of objects that Facebook [REDACTED]
25 [REDACTED]. Two of these are [REDACTED] objects and [REDACTED]

26 ¹⁵ Adkins Depo. at 67:23-69:1. Similarly, Ray He stated in his deposition that [REDACTED]
27 [REDACTED]

28 He Depo. at 204:21-24

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

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[REDACTED]

39. When the user sends a Private Message containing a URL, whether it is new to Facebook or not, [REDACTED] incremented. In other words, [REDACTED] goes up by 1. The process for this is as follows.

40. After the user hits "send" but before the message is delivered, the Facebook Code processes information about the sent message. Specific to this litigation, the Code searches for [REDACTED]. These [REDACTED] According to Facebook's internal documentation, "[REDACTED]"²¹ In the case of

¹⁸ FB000014199.

¹⁹ In some cases, this includes a [REDACTED] the private message as the [REDACTED], known in this case as [REDACTED]. See Facebook's Second Supplemental Responses and Objections to Plaintiffs' Narrowed Second Set of Interrogatories at 14:5-6; [REDACTED]

²⁰ FB000014204.

²¹ FB000011543.

1 Private Messages, [REDACTED]
2 [REDACTED] while composing a private message.²²

3 41. The creation of the [REDACTED] in
4 the message transmission process. As discussed in greater detail in Section III.B, *infra*, the Code
5 in [REDACTED]

6 [REDACTED]
7 [REDACTED]
8 42. Based on my analysis of Facebook’s Code and documents, in my opinion, and as
9 discussed further below, the [REDACTED]
10 [REDACTED] constitute the
11 interception, analysis, and use of the contents of user’s Private Message.

12 **2. [REDACTED] of Private Message Content**

13 43. Once Facebook intercepts the URL contents of users’ Private [REDACTED]
14 [REDACTED]
15 [REDACTED]

16 **a. [REDACTED]**

17 44. Facebook’s Code, as well as Facebook’s internal documents, indicate that when a
18 [REDACTED]
19 [REDACTED].

20 45. The [REDACTED]
21 [REDACTED]
22 [REDACTED] With this data, Facebook can [REDACTED]
23 [REDACTED] in a variety of ways. The URLs people share privately may [REDACTED]
24 [REDACTED]
25 [REDACTED]

26 46. For example, on [REDACTED]
27 [REDACTED] Private Message content.²³

28 _____
²² An example of the data represented in [REDACTED] is FB000005528.

1 The particular Facebook functionality at issue in this document is [REDACTED] which Facebook
2 documents describe as [REDACTED],²⁴ Ray He further explains that

3 [REDACTED]
4 [REDACTED]²⁵

5 47. Concerning [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED] This
9 [REDACTED] indicates if a message was [REDACTED]

10 [REDACTED]
11 [REDACTED] This is further corroborated by a [REDACTED]
12 [REDACTED]
13 [REDACTED]²⁶ This could only be the case if Private
14 Messages were [REDACTED].

15 48. Indeed, [REDACTED] in
16 a later communication, dated [REDACTED]
17 [REDACTED]
18 [REDACTED]²⁷

19 49. In the Facebook Code base, the [REDACTED]
20 [REDACTED]
21 [REDACTED]²⁸

22 50. Again, the presence of the [REDACTED]
23 [REDACTED].

26 ²³ FB000002651.
27 ²⁴ FB000003118.
28 ²⁵ He Depo. at 227:3-4, 11-12.
²⁶ FB000002651.
²⁷ FB000002843.
²⁸ FB000014183.

1 51. While the addition of the [REDACTED] is now used to [REDACTED]
2 [REDACTED], Facebook could still use information from the Private Messages in the future
3 since they [REDACTED].

4 b. [REDACTED]

5 52. [REDACTED]. In Facebook document
6 FB000008505, Facebook employees describe the [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]

10 53. In the same document describing this [REDACTED]
11 [REDACTED]

12 54. When a URL is [REDACTED]
13 [REDACTED]
14 [REDACTED]

15 C. Facebook's Use Of Code-Based Devices To Intercept Private Message
16 Content

17 55. As discussed above, Facebook employs various code-based devices to intercept
18 Private Message content. Set forth below are the discrete components of Facebook's Code that
19 execute the interceptions, each of which [REDACTED]
20 [REDACTED]
21 [REDACTED]

- 22 • Processes [REDACTED]:
 - 23 ○ After a user sends a message, the Code [REDACTED]
24 [REDACTED]
25 [REDACTED]
26 [REDACTED]
27 [REDACTED]
28 [REDACTED]

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- [REDACTED]
 - As described in section III.B.2 above, [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
- [REDACTED]
 - As described more detail in in paragraph 84 below, [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED].

IV. FACEBOOK’S USES OF INTERCEPTED PRIVATE MESSAGE DATA

A. Facebook Used Private Message Content To [REDACTED] And Other Features

56. With the data Facebook collected by scanning Private Messages, Facebook [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED].

1. Facebook Provided [REDACTED]

57. As described above, the [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

58. [REDACTED] The Code for
this is as follows:

[REDACTED]
[REDACTED]

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59. In this [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

60. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

2. [REDACTED]

61. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]. This, along with other evidence, strongly
suggests that Facebook continued to use Private Message content to [REDACTED]
[REDACTED]

62. As discussed above, [REDACTED]
[REDACTED]
[REDACTED]

63. In deposition, Ray He explained that [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

²⁹ FB000027029.
³⁰ FB000027051.

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[REDACTED]

64. Mr. He provided further testimony confirming that Private Message URL sends were used in [REDACTED]. When discussing how [REDACTED]

[REDACTED], Ray He was asked whether he was [REDACTED]

[REDACTED]

3. [REDACTED]

65. [REDACTED]

[REDACTED]. This includes interactions that took place in private messages.

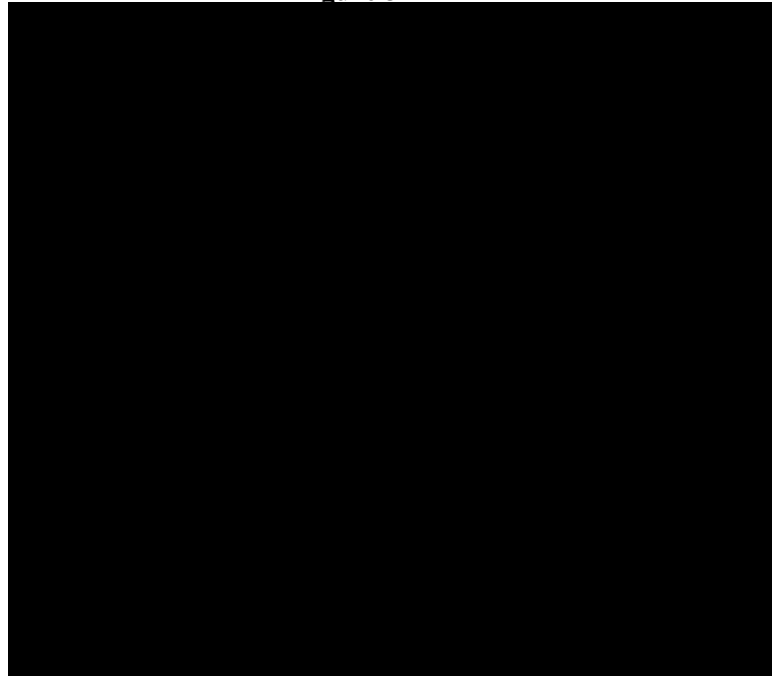
66. In FB000007286, Facebook describes [REDACTED]

[REDACTED]

³¹ He Depo. at 234:14-25.
³² He Depo. at 229:19-230:6.

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Figure 3



67.

[Redacted text block for paragraph 67, consisting of five lines of blacked-out text.]

68. Facebook document FB000006178, which has the subject

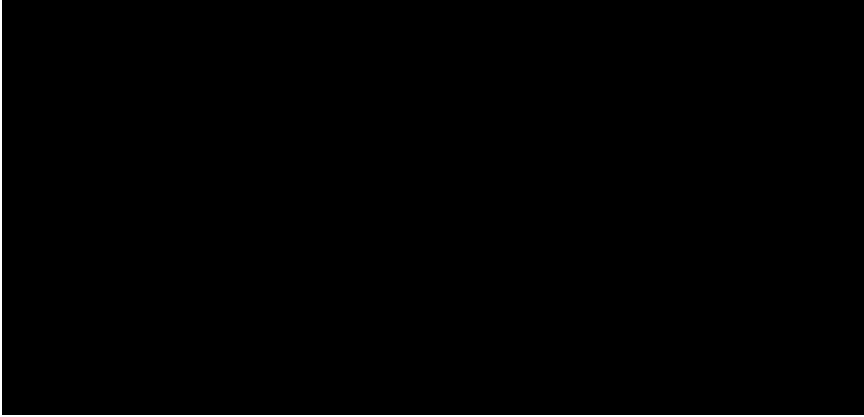
[Redacted text block for paragraph 68, consisting of five lines of blacked-out text.]

69. Section 4.2 of Facebook document FB000010688 describes

[Redacted text block for paragraph 69, consisting of one line of blacked-out text.]

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Figure 4



The document goes on to explain that the [REDACTED]
[REDACTED]

70. As described above, [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

71. This indicates that [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

72. Facebook document FB000008722 also supports this. It describes [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

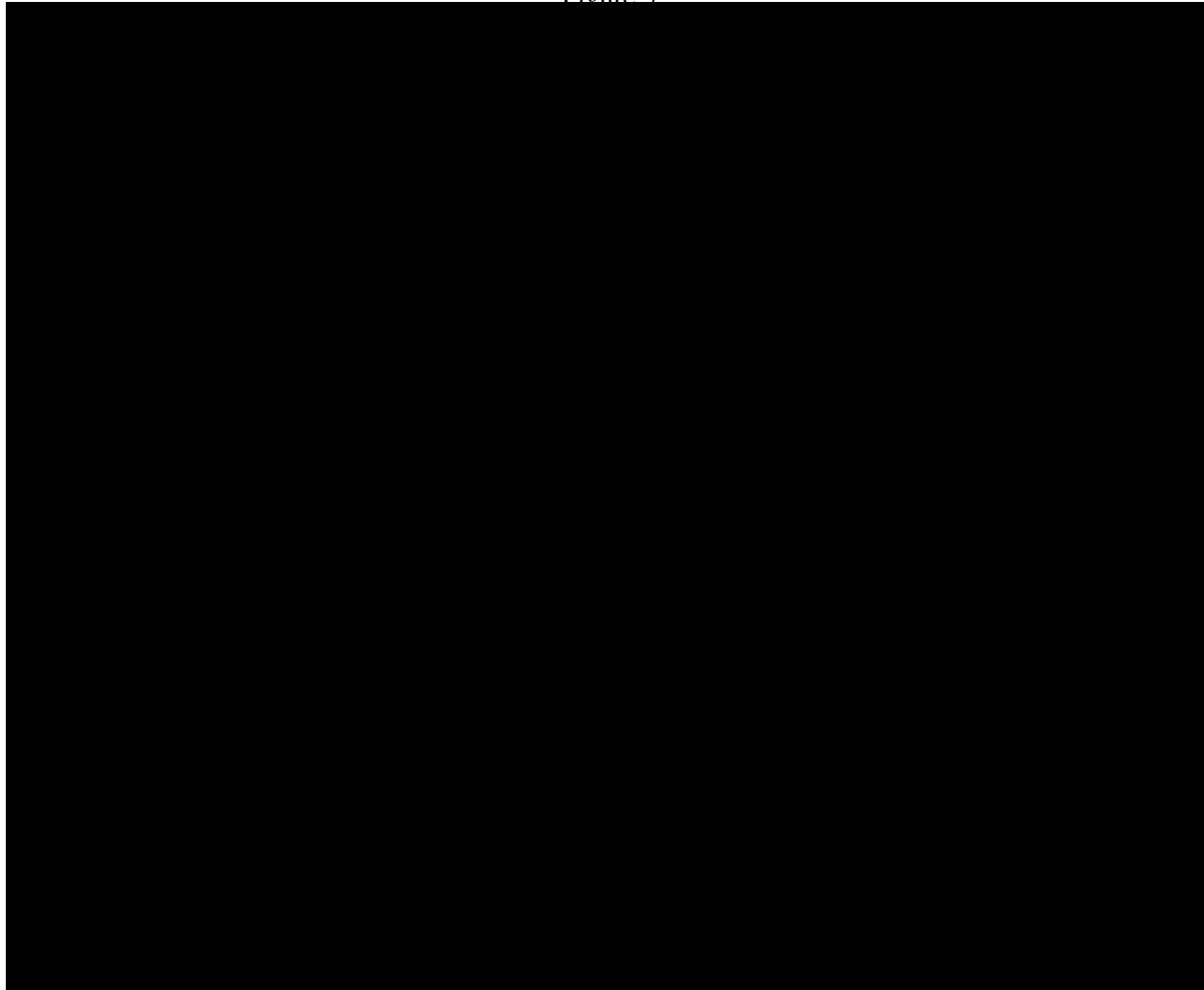
73. In the [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

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74. Experiments by journalist Ashkan Soltani also suggest that Facebook was

[REDACTED]

Figure 5



4. [REDACTED]

75. [REDACTED]

[REDACTED] The Facebook Activity Plugin allowed third parties to show recent activity in Facebook that related to their site:³³

³³ <https://web.archive.org/web/20101205130048/http://developers.facebook.com/docs/reference/plugins/activity>.

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The Activity Feed plugin displays the most interesting recent activity taking place on your site. Since the content is hosted by Facebook, the plugin can display personalized content whether or not the user has logged into your site. The activity feed displays stories both when users like content on your site and when users share content from your site back to Facebook. If a user is logged into Facebook, the plugin will be personalized to highlight content from their friends. If the user is logged out, the activity feed will show recommendations from your site, and give the user the option to log in to Facebook.

The plugin is filled with activity from the user’s friends. If there isn’t enough friend activity to fill the plugin, it is backfilled with recommendations. If you set the recommendations param to true, the plugin is split in half, showing friends activity in the top half, and recommendations in the bottom half. If there is not enough friends activity to fill half of the plugin, it will include more recommendations.

76. [REDACTED]

77. [REDACTED]

³⁴ FB000002843.
³⁵ *Id.*

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78. [REDACTED]

[REDACTED]

[REDACTED]

5. [REDACTED]

79. Private Message data [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

80. Facebook document FB000008499 describes the data that can be seen from [REDACTED]

[REDACTED]:

Figure 6

[REDACTED]

81. [REDACTED]

[REDACTED]

[REDACTED]

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B. Incrementing Like Counter

82. On October 3, 2012, the Wall Street Journal reported that Facebook was scanning users' private messages.³⁶ They detected this by observing that the like count on an external page would increase by two every time the page's URL was sent in a private message.

83. They tested this by creating pages and observing the count on the external like button increase by two every time the link was sent in a private message. The double counting was also visible on the insights page for webmasters, which shows analytics information.³⁷

84. [REDACTED]

³⁶ <http://blogs.wsj.com/digits/2012/10/03/how-private-are-your-private-messages/>.
³⁷ <https://developers.facebook.com/blog/post/476>.

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[REDACTED]

85. After media reports surfaced the double-counting issue and the fact that private messages were scanned and hidden “likes” were counted as a result, Facebook [REDACTED]

86. In Facebook document FB000002141, Facebook discusses [REDACTED]

³⁸ FB000027018.

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[REDACTED]

[REDACTED]

87. Facebook then set out to determine [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]⁴⁰

88. Because the magnitude of [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] which messages are sent or

received.

89. Indeed, the described change to the Code simply [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

90. Changes in [REDACTED] do not impact the way that

Facebook handles private messages in any way. The Code change that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

91. This is further highlighted in Facebook document FB000006429. That document,

which discusses [REDACTED]

[REDACTED]

³⁹ FB000002196.

⁴⁰ FB000001599.

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[REDACTED]

[REDACTED]

92. Note that in the changes discussed above, Facebook [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

93. This is supported in an email from [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]⁴¹

V. FACEBOOK’S CONDUCT CONTINUES TO THE PRESENT

A. Facebook Has [REDACTED]

94. In addressing the issue of [REDACTED]

[REDACTED]

[REDACTED] This appears redacted in FB000001606. However, there is no evidence that Facebook ever [REDACTED].

95. Instead, evidence from the Code shows that Facebook [REDACTED]

[REDACTED] (the last date

for which we had access to source Code). I analyzed the files

[REDACTED]

[REDACTED]

[REDACTED]. There were no substantial changes to these files, and they

continued to [REDACTED] until the latest date in the Code.

⁴¹ FB000000425.

1 96. Further, internal Facebook documents indicate that Facebook [REDACTED]
2 [REDACTED]
3 [REDACTED] My
4 understanding is that Facebook produced several [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED] for the message's URL.⁴³

9 97. With that information available, Facebook could [REDACTED]
10 [REDACTED]
11 [REDACTED]

12 **VI. CLASS MEMBERS ARE ASCERTAINABLE**

13 **A. Class Members Can Be Identified Through [REDACTED].**

14 98. Each [REDACTED]
15 [REDACTED]

16 99. In the Code, the [REDACTED]
17 [REDACTED]

- 18 ■ [REDACTED]
- 19 ■ [REDACTED]
- 20 ■ [REDACTED]
- 21 ■ [REDACTED]
- 22 ■ [REDACTED]
- 23 ■ [REDACTED]
- 24 ■ [REDACTED]⁴⁴

27 _____
28 ⁴² FB000005827.
⁴³ FB000005802-R.
⁴⁴ FB0000027020.

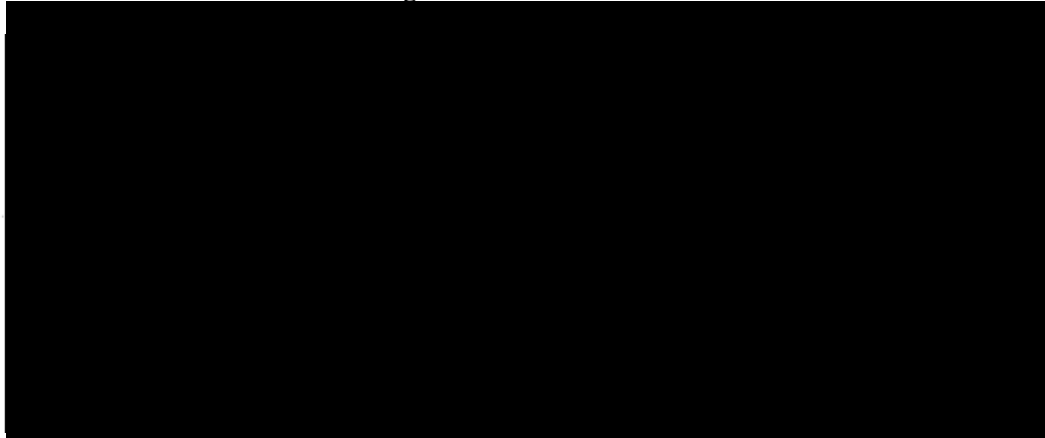
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100. The creator of these private [REDACTED]

[REDACTED]

[REDACTED] as shown below in FB000008499:

Figure 7



101. This [REDACTED]

[REDACTED]. That resolves to

[REDACTED]

102. I understand that the Plaintiffs in this case seek to certify a class of “All natural-person Facebook users located within the United States who have sent, or received from a Facebook user, private messages that included URLs in their content (and from which Facebook generated a URL attachment), from within two years of the filing of this action up through the date of class certification.”

103. To retrieve a list of class members, the Code process should be relatively straightforward. A database query could be used [REDACTED]

[REDACTED]

104. The exact code will vary based on the type of database, but example query code could roughly take this form:

[REDACTED]

Where [REDACTED]

correspond to the above examples from the Code.

1 is, the ability to provide the underlying service or good.” *Id.* (citing *In re Google Inc. Gmail*
2 *Litig.*, 2013 U.S. Dist. LEXIS 172784 (N.D. Cal. Sept. 26, 2013).

3 109. Having reviewed Facebook’s Code and the documents provided in discovery, I
4 conclude that the interception, analysis, and use of URL [REDACTED] in Private Messages is not
5 necessary for the functionality of message sharing in Facebook.

6 110. Facebook itself confirms this in its Interrogatory Responses, where it notes that on
7 some occasions a message with a URL [REDACTED]

8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED]
14 [REDACTED]⁴⁶

15 111. Facebook goes on to explain that the URL [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED]⁴⁷

23 112. The Code also shows that these steps are unnecessary. When a message is sent
24 with [REDACTED] are not necessary to deliver
25 the content of the message with its URL to the recipient. [REDACTED] are

26 _____
27 ⁴⁵ Facebook's Second Supplemental Response and Objections to Interrogatory No. 8 at 12:3-7
(emphasis added).

28 ⁴⁶ *Id.* 16:24-28 (emphasis added).

⁴⁷ Facebook’s Supplemental Responses and Objections to Plaintiffs’ First Set of Interrogatories at
15:10-15.

1 not used to deliver the message. The [REDACTED] is not part of the message delivery
2 process. Instead, these processes are related to the acquisition of user's Private Message content
3 for the purposes described above, such as [REDACTED]
4 [REDACTED], and inflating engagement counts on social plugins. None of those uses fall
5 within a "nexus between the need to engage in the alleged interception and the subscriber's
6 ultimate business, that is, the ability to provide the underlying service or good." *Campbell*, 77 F.
7 Supp. 3d at 844.

8 113. Additionally, testimony by Michael Adkins demonstrates that Facebook's [REDACTED]
9 [REDACTED]
10 [REDACTED] private message content described above.
11 As explained by Michael Adkins, Facebook's [REDACTED]
12 [REDACTED]
13 [REDACTED] For example, Mr. Adkins testified that
14 Facebook's [REDACTED]
15 [REDACTED]

16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 [REDACTED]

20 114. Mr. Adkins further notes that [REDACTED]
21 [REDACTED]
22 [REDACTED]
23 [REDACTED] of private message content
24 described above. Mr. Adkins further confirms this by explaining that [REDACTED]
25 [REDACTED]

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28 ⁴⁸ Adkins Depo. at 34:17-25.
⁴⁹ *Id.* at 36:15-18.

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[REDACTED]

[REDACTED]

115. Similarly, Mr. Adkins testified that Facebook’s [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] of private

message content described above.

IX. “IN TRANSMISSION”

116. I further understand that Facebook takes the position that the challenged practices occurred “in storage,” as opposed to “in transmission,” and that they are therefore outside of the scope of the statutes through which Plaintiffs bring their claims. My understanding is that an interception must occur “contemporaneously with transmission” in order to have occurred under either the Electronic Communications Privacy Act or the California Invasion of Privacy Act. *In re Carrier IQ, Inc., Consumer Privacy Litig.*, 78 F. Supp. 3d 1051, 1076 (N.D. Cal. 2015). As described above, all the redirection, [REDACTED] of Private Message content happens while the Private Message is in transmission – [REDACTED]

[REDACTED].

117. As the excerpt of the Adkins Deposition shows quoted in paragraph 30 above,⁵² the message is delivered when it is stored in the [REDACTED] system. Until that point, the message, and any URL [REDACTED] [REDACTED]; otherwise, it could not be in the computer at all. In the testimony above, Adkins clearly describes a process by which the message

⁵⁰ *Id.* at 87:16-21 [REDACTED]

[REDACTED]

⁵¹ *Id.* at 89:11-90:19.

⁵² *Id.* at 67:23-69:1.

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is [REDACTED]

[REDACTED].⁵³

118. As described above, all the processing of the message, including [REDACTED] senders with URLs, [REDACTED] and count incrementing, happens before the message is delivered. Thus, in my opinion, Facebook's interception and redirection of user's Private Message content happens while the message is in transit and not while it is in storage.

Dated: November 13, 2015



Jennifer Golbeck

⁵³ Ray He's testimony also confirms this. See He Depo. at 206:4-6 [REDACTED]

EXHIBIT A

Jennifer Golbeck

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University of Maryland
College Park, MD 20742, USA
E-mail: jgolbeck@umd.edu
Homepage: <http://www.cs.umd.edu/~golbeck/>

1 Personal Information

1.A University Appointments

- | | |
|----------------|---|
| 8/2013–present | Associate Professor,
College of Information Studies (100%),
University of Maryland (College Park, Maryland) |
| 8/2007–present | Assistant Professor,
College of Information Studies (100%),
University of Maryland (College Park, Maryland) |

1.B Education

- | | |
|---------------|--|
| 8/2001–5/2005 | University of Maryland (College Park, Maryland)
Doctor of Philosophy in Computer Science |
| 9/1999–6/2001 | University of Chicago (Chicago, Illinois)
ScientiæMagister in Computer Science |
| 9/1995–6/1999 | University of Chicago (Chicago, Illinois)
Scientiæ Baccalaureus in Computer Science
Artium Baccalaureus in Economics |

1.C Academic Employment Background

6/2005–8/2007	Faculty Research Associate Institute for Advanced Computer Studies Department of Computer Science University of Maryland (College Park, Maryland)
8/2006–12/2006	Adjunct Professor Computer Science Department American University (Washington, DC)
6/2005–9/2006	Research Director Joint Institute for Knowledge Discovery (JIKD) University of Maryland (College Park, Maryland)
8/2001–5/2005	Research Assistant Department of Computer Science University of Maryland (College Park, Maryland)
8/2001–5/2005	Adjunct Lecturer Computer Science Department George Washington University (Washington, DC)
6/2001–5/2003	Adjunct Lecturer Computer Science Department Georgetown University (Washington, DC)
5/2002–8/2002	Adjunct Professor Advanced Physics Lab Johns Hopkins University (Laurel, Maryland)
8/2001–12/2001	Adjunct Lecturer Computer Science Department George Mason University (Fairfax, Virginia)
6/2000–9/2000	Visiting Graduate Mathematics and Computer Science Division Futures Laboratory Argonne National Laboratory (Argonne, Illinois)
6/1999–6/2001	Lecturer Computer Science Department University of Chicago (Chicago, Illinois)

2 Research, Scholarly, and Creative Activities

- In all references, my name is in **bold**.
- Unless otherwise indicated, the first author is the lead author.
- Underlined names indicate students with whom I collaborated—this includes students for whom I am/was the (co-)advisor and other students where the collaboration was limited to specific projects.
- For work in which a student took the lead, it is customary for the student to be first author, followed by faculty who have played an advisory or mentoring role, followed by other individuals who have contributed. In cases where a student is listed as the first author, a wavy underline indicates colleagues with whom I shared this advisory or mentoring role (to the extent of my knowledge).
- References marked with ^α indicate that authors are listed in alphabetical order, or that all co-authors contributed equally.

2.A Books

2.A.i Books Authored

- B1. **Jennifer Golbeck**. January 2015. Introduction to Social Media Investigation: A Hands On Approach. Syngress.
- B2. **Jennifer Golbeck**. 2013. Analyzing the Social Web. Burlington, MA: Morgan Kaufmann.
- B3. **Jennifer Golbeck**. 2008. Trust on the World Wide Web: A Survey. Hanover, MA: Now Publishers Inc.
- B4. **Jennifer Golbeck**. 2005. Art Theory for Web Design. Boston, MA: Addison–Wesley.

2.A.ii Books Edited

- B5. **Jennifer Golbeck (ed)**. 2008. Computing with Social Trust, London, UK: Springer.
- B6. K. Aberer, K.-S.Choi, N. Noy, D. Allemang, K.-I. Lee, L. Nixon, **Jennifer Golbeck**, P. Mika, D. Maynard, R. Mizoguchi, G. Schreiber, P. Cudré -Mauroux(Eds.) The Semantic Web – 6th International Semantic Web Conference, 2nd Asian Semantic Web Conference (proceedings), Lecture Notes in Computer Science, Vol. 4825, November 2007.

2.A.iii Chapters in Books

- BC1. **Jennifer Golbeck**. 2015. “Who Needs an Untrustworthy Doctor? Maslow’s Hierarchy of Needs” in The Walking Dead Psychology: Psych of the Living Dead, Travis Langley (ed.). Sterling.
- BC2. Ziegler, Cai-Nicolas, and **Jennifer Golbeck**. ”Models for Trust Inference in Social Networks.” Propagation Phenomena in Real World Networks. Springer International Publishing, 2015. 53-89.

- BC3. **Jennifer Golbeck**, Ugur Kuter. 2008. “The Ripple Effect: Change in Trust and Its Impact over a Social Network” in *Computing with Social Trust*. **Jennifer Golbeck** (ed.). Springer.
- BC4. **Jennifer Golbeck**, Aaron Mannes, James Hendler, 2006. “Semantic Web Technologies for Terrorist Network Analysis,” in *Emergent Information Technologies and Enabling Policies for Counter Terrorism*. Robert Popp and John Yen (eds). Wiley-IEEE Press.
- BC5. **Jennifer Golbeck** and Paul Mutton, 2005. “Spring-embedded Graph Visualizations of Semantic Metadata and Ontologies,” in *Visualizing the Semantic Web*, 2nd Ed, Vladimir Geroimenko, Chaomei Chen (eds.). Springer Verlag.
- BC6. **Jennifer Golbeck**, 2004. “IRC with ChatZilla” in Paul Mutton, *IRC Hacks*, 2004. O’Reilly Associates: Cambridge, MA.
- BC7. **Jennifer Golbeck**, 2004. “IRC in Mac OS X” in Paul Mutton, *IRC Hacks*, 2004. O’Reilly Associates: Cambridge, MA.
- BC8. **Jennifer Golbeck**, 2004. “Getting Friendly with FOAFBot” in Paul Mutton, *IRC Hacks*, 2004. O’Reilly Associates: Cambridge, MA.
- BC9. **Jennifer Golbeck**, 2004. “Interrogate Trust Networks with TrustBot” in Paul Mutton, *IRC Hacks*, 2004. O’Reilly Associates: Cambridge, MA.
- BC10. **Jennifer Golbeck**, 2004. “Check the Weather” in Paul Mutton, *IRC Hacks*, 2004. O’Reilly Associates: Cambridge, MA.
- BC11. **Jennifer Golbeck**, 2004. “Convert Currency” in Paul Mutton, *IRC Hacks*, 2004. O’Reilly Associates: Cambridge, MA.
- BC12. **Jennifer Golbeck**, 2004. “Don’t Get Lost in Translation” in Paul Mutton, *IRC Hacks*, 2004. O’Reilly Associates: Cambridge, MA.
- BC13. **Jennifer Golbeck**, 2004. “IRC: Chatrooms for Hackers” in Rael Dornfest and James Duncan Davidson, *OS X Panther Hacks*, 2004. O’Reilly Associates: Cambridge, MA.
- BC14. **Jennifer Golbeck**, Amy Alford, Ron Alford, James Hendler, 2004. “Organization and Structure of Information using Semantic Web Technologies,” in *Handbook of Human Factors in Web Design*, Robert W. Proctor and Kim-Phuong L. Vu (eds.). Lawrence Erlbaum Associates, NJ.

2.B Articles in Refereed Journals¹

- | | |
|--|-------|
| J1. Jennifer Golbeck. Benford’s Law Applies to Online Social Networks. <i>PLoS ONE</i> . in press | 3.534 |
| J2. <u>Irene Eleta</u> and Jennifer Golbeck. Multilingual Use of Twitter: Social Networks at the Language Frontier. <i>Computers in Human Behavior</i> . December 2014 | 2.489 |
| J3. Jennifer Golbeck and Derek Hansen. A Method for Computing Political Preference Among Twitter Followers. <i>Social Networks</i> . 36: 20 pages, 2014. | 4.059 |

¹ The right column indicates ISI Impact factors of the journal in the year of publication, or most recently available impact factor otherwise. Missing values indicate that the impact factor is not available.

- J4. Rebecca LaPlante, Judith Klavans, **Jennifer Golbeck**. Subject Matter Categorization of Tags Applied to Digital Images from Art Museums *Journal of the American Society for Information Science and Technology*. 23 pages, in press. 2.137
- J5. Awalin Sopan, Manuel Freire, Meirav Taieb-Maimon, Catherine Plaisant, **Jennifer Golbeck**, and Ben Shneiderman. Exploring Data Distributions: Visual Design and Evaluation *International Journal of Human-Computer Interaction*, 29(2), 27 pages, 2013 0.943
- J6. **Jennifer Golbeck**, Jes Koepfler, Beth Emmerling. An Experimental Study of Social Tagging Behavior and Image Content. *Journal of the American Society for Information Science and Technology*, 62(9): 1750–1760, 2011. 2.137
- J7. **Jennifer Golbeck**. The more people I meet, the more I like my dog: A study of pet-oriented social networks on the Web. *First Monday*, 16(2): 12 pages. 2011
- J8. Xie, B., Watkins, I., **Golbeck, J.**, & Huang, M. Understanding and changing older adults perceptions and learning of social media. *Educational Gerontology*, (38)4: 282–296, 2011. 0.550
- J9. Ugur Kuter and **Jennifer Golbeck**.^α Using Probabilistic Confidence Models for Trust Inference in Web-Based Social Networks. *ACM Transactions on Internet Technology*, 10, 2, Article 8 (June 2010), 23 pages, 2010. 2.080
- J10. **Jennifer Golbeck**, Justin Grimes, Anthony Rogers Twitter Use by the US Congress. *Journal of the American Society for Information Science and Technology*, 61(8): 1612–162, 2010. 2.137
- J11. P. T. Jaeger, **J. Golbeck**, A. Druin, K. R. Fleischmann. The First Workshop on the Future of iSchool Doctoral Education: Issues, Challenges, and Aspirations. *Journal of Education for Library and Information Science*, 51(3):201–208, 2010.
- J12. Druin, A. Jaeger, P.T., **Jennifer Golbeck.**, Fleischmann, K. R., Lin, J. Qu, Y., Wang, P. & Xie, B.. The Maryland Modular Method: An Approach to Doctoral Education in Information Studies. *Journal of Education in Library and Information Science (JELIS)*, 50(4), 293-301, 2010.
- J13. **Jennifer Golbeck** and Christian Halaschek-Wiener. Trust-Based Revision for Expressive Web Syndication. *Journal of Logic and Computation*. 19, 5 (October 2009), 771-790. 0.821
- J14. **Jennifer Golbeck**. Trust and Nuanced Profile Similarity in Online Social Networks. *ACM Transactions on the Web*, 3, 4, Article 12, 33 pages, 2009. 2.810
- J15. **Jennifer Golbeck**. 2008. Weaving a Web of Trust. *Science* 19 September 2008: 1640–1641. 29.78
- J16. James Hendler, **Jennifer Golbeck**. Metcalfe’s Law Applies to Web 2.0 and the Semantic Web. *Journal of Web Semantics*. 6(1): 14–20, 2008. 3.410
- J17. **Jennifer Golbeck**. The Dynamics of Web-based Social Networks: Membership, Relationships, and Change. *First Monday*, 12(11): 1-33, 2007.
- J18. **Jennifer Golbeck**, James Hendler. A Semantic Web and Trust Approach to the Provenance Challenge. *Concurrency and Computation: Practice and Experience*, 20(5): 431–439, 2007. 0.535

- J19. L. Moreau, B. Ludascher, I. Altintas, R. S. Barga, S. Bowers, S. Callahan, G. Chin Jr., B. Clifford, S. Cohen, S. Cohen-Boulakia, S. Davidson, E. Deelman, L. Digiampietri, I. Foster, J. Freire, J. Frew, J. Futrelle, T. Gibson, Y. Gil, C. Goble, **J. Golbeck**, P. Groth, D. A. Holland, S. Jiang, J. Kim, D. Koop, A. Krenek, T. McPhillips, G. Mehta, S. Miles, D. Metzger, S. Munroe, J. Myers, B. Plale, N. Podhorszki, V. Ratnakar, E. Santos, C. Scheidegger, K. Schuchardt, M. Seltzer, Y. L. Simmhan, C. Silva, P. Slaughter, E. Stephan, R. Stevens, D. Turi, H. Vo, M. Wilde, J. Zhao, and Y. Zhao. The First Provenance Challenge. *Concurrency and Computation: Practice and Experience*, 20(5): 409–418, 2007. 0.535
- J20. Cai-Nicolas Ziegler, **Jennifer Golbeck**. Investigating Interactions of Trust and Interest Similarity. *Decision Support Systems*, 43(2): 460–475, 2006. 1.190
- J21. Richard J. Williams, Neo Martinez, **Jennifer Golbeck**. Ontologies for Ecoinformatics, *Journal of Web Semantics*, 4(4): 237–242, 2006. 3.410
- J22. **Jennifer Golbeck**, James Hendler. Inferring Trust Relationships in Web-Based Social Networks, *ACM Transactions on Internet Technology*, 6(4): 497–529, 2006. 0.893
- J23. **Jennifer Golbeck**, Bijan Parsia. Trust network-based filtering of aggregated claims. *International Journal of Metadata, Semantics, and Ontologies*, 1(1); 58–65, 2005.
- J24. **Jennifer Golbeck**. Semantic Social Networks for Email Filtering: A Prototype and Analysis, *AIS SIGSEMIS Bulletin*, Vol. 2, Issue (3&4) 2005: 36–40, 2005.
- J25. Frank W Hartel, Sherri de Coronado, Robert Dionne, Gilberto Fragoso, **Jennifer Golbeck**. Modeling a Description Logic Vocabulary for Cancer Research. *Journal of Biomedical Informatics*, 38(2): 114–129, 2005. 1.792
- J26. P. Domingos, **J. Golbeck**, P. Mika, A. Nowak. Trends & Controversies: Social Networks and Intelligent Systems. *IEEE Intelligent Systems*, 20(1): 80 – 93, 2005. 1.438
- J27. Staab, Steffen, Pedro Domingos, P. Mika, **Jennifer Golbeck**, Li Ding, Tim Finin, Anupam Joshi, Andrzej Nowak, and Robin R. Vallacher. Social networks applied. *IEEE Intelligent Systems*, page 80-93, 2005.
- J28. Aditya Kalyanpur, **Jennifer Golbeck**, Jay Banerjee, James Hendler. OWL: Capturing semantic information using a standardized web ontology language. *Multilingual Computing & Technology*, 15(7): 8 pages, 2004.
- J29. Leslie E. Chipman, Benjamin B. Bederson, **Jennifer Golbeck**. SlideBar: Analysis of a linear input device. *Behaviour and Information Technology*, 23(1): 1–9, 2004. 1.028
- J30. **Jennifer Golbeck**, Gilberto Fragoso, Frank Hartel, Jim Hendler, Jim Oberthaler, Bijan Parsia. The National Cancer Institute’s Thesaurus and Ontology. *Journal of Web Semantics*, 1(1): 75–80, 2004. 3.410

2.C Monographs, Reports, and Extension Publications

- R1. Aditya Kalyanpur, James Hendler, Bijan Parsia, **Jennifer Golbeck**. SMORE-semantic markup, ontology, and RDF editor. 2006.
- R2. **Jennifer Golbeck**. Computing and Applying Trust in Web-based Social Networks, Ph.D. Thesis, University of Maryland, College Park, 2005.
- R3. **Jennifer Golbeck**. Genetic Algorithms for Strategic Optimization. Master’s Thesis, University of Chicago, 2001.

2.D Book Reviews, Other Articles, and Notes

1. “Data Meets Design: a Review of Judith Donath’s The Social Machine”
Science, January 15, 2015
2. “The Live-Tweeted Prostitution Sting Was a Total Bust, and Not in a Good Way”
Slate, May 7, 2014
3. “What a Toilet Hoax Can Tell Us About the Future of Surveillance, on The Atlantic”
The Atlantic, April 29, 2014
4. “Google Tweaked How It Displays Search Results. Heres How to Change It Back”
Slate, March 14, 2014 Slate, January 1, 2014
5. “Beacon, ShopKick: Privacy Policies for location-tracking apps arent clear enough”
Slate January 28, 2014
6. “Facebook Cleansing: How to delete all of your account activity”
Slate, January 1, 2014
7. “Facebook self-censorship: What happens to the posts you don’t publish”
Slate, December 13, 2013
8. “Lovely Spam! Wonderful Spam! (book review of Spam A Shadow History of the Internet)”
Science: Vol. 340 no. 6137 p. 1171, 7 June 2013

2.E Talks, Abstracts, and Other Professional Papers Presented

2.E.i Invited Talks: Keynote (and Similar) Addresses

- T1. “Privacy, Social Context, and Social Media”
TEDxUMD
College Park, MD (May 3, 2014)
- T2. “Trust and Social Media”
AAAI 2013 Fall Symposium Series (Keynote)
Arlington, VA (November 15-17, 2013)
- T3. “Hidden Information Uncovered”
TEDxMidAtlantic
Washington, DC (October 25, 2013)
- T4. “User Profiling: a two-sided argument”
Conference on Social Computing and Its Applications (Keynote)
Karlsruhe, Germany (October 2, 2013)
- T5. “Analyzing the Social Web”
Baltimore Data Day, Federal Reserve Bank of Richmond (Keynote)
Baltimore, MD (July 11, 2013)
- T6. “Uncovering Hidden Social Information”
Data Science DC
Washington, DC (March 28, 2013)

- T7. “Pets on the Internet”
 TEDxGeorgetown
 Washington, DC (March 23, 2011)
- T8. “Tutorial on Using Social Trust for Recommender Systems”
 ACM Conference on Recommender Systems (RecSys ’09)
 New York, New York (October 22, 2009)
- T9. “Computing with Social Trust: Web Algorithms, Social Networks, and Recommendations”
 Haverford College Distinguished Visitors Program, and Fantastic Lectures in Computer Science Series
 Haverford, Pennsylvania (March 17, 2009)
- T10. “Social Recommender Systems”
 SONIC and NICO Lecture Series, Northwestern University
 Evanston, Illinois (November 12, 2008)
- T11. “The Dynamics of Web-based Social Networks: Membership, Relationships, and Change”
 International Sunbelt Social Networking Conference (Sunbelt XXVIII)
 St. Pete, Florida (January 22, 2008)
- T12. “Social Networks, the Semantic Web, and the Future of Online Scientific Collaboration”
 FermiLab Colloquium Lecture
 Batavia, Illinois (October 25 2006)
- T13. “Trust and Web Policy Systems”
 Keynote talk at the Second International Workshop on the Value of Security through Collaboration
 Baltimore, Maryland (September 1, 2006)

2.E.ii Refereed conference proceedings

2.E.ii.1 Papers at Top-Tier Conferences ¹

- C1. Kan-Leung Cheng and I Zuckerman and D Nau, and **J Golbeck** ”Predicting Agents Behavior by Measuring their Social Preferences.” Proceedings on the European Conference on Artificial Intelligence. (2014).
- C2. Tammar Shrot, Avi Rosenfeld, **Jennifer Golbeck**, Sarit Kraus. Timing Interruptions to Improve User Performance. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI’14)*. 10 pages. April 2014, Toronto, Canada 23%
- C3. Jennifer Golbeck, Eric Norris. Personality, Movie Preferences, and Recommendations. In Proceedings of the International Conference on Advances in Social Network Analysis and Mining, 4 pages. August 2013, Niagra Falls, Canada. 15%
- C4. Bert Huang, Angelika Kimmig and Lise Getoor and **Jennifer Golbeck**. Flexible Framework for Probabilistic Models of Social Trust. In *2013 Conference on Social Computing, Behavioral Modeling and Prediction*, 9 pages. April 2013, College Park, MD 31%

¹Conferences with highly-selective acceptance rates and/or top reputations in their field.

- C5. Carman Neustaedter and **Jennifer Golbeck**. Exploring pet video chat: the remote awareness and interaction needs of families with dogs and cats. In *Proceedings of Computer Supported Cooperative Work (CSCW'13)*, *in press*, 6 pages. February 2013, San Antonio, TX
- C6. **Jennifer Golbeck**. The Twitter Mute Button: A Web Filtering Challenge. In *Proceedings of the 30th International Conference on Human Factors in Computing Systems (CHI '12)*, pages 2755–2758. May 2012, Austin, TX. 23%
- C7. Irene Eleta and **Jennifer Golbeck**. A Study of Multilingual Social Tagging of Art Images: Cultural Bridges and Diversity. In *Proceedings of Computer Supported Cooperative Work (CSCW'12)*, pages 695–704. February 2012, Seattle, Washington 40%
- C8. Cheng, K.L., Zuckerman, I., Nau, D., and **Golbeck, J.** The Life Game: Cognitive Strategies for Repeated Stochastic Games. In *IEEE Third International Conference on and 2011 IEEE Third International Conference on Social Computing (SocialCom)*, pages 495–102. October 2011, Boston, Massachusetts. 10%
- C9. Nicholas Violi, **Jennifer Golbeck**, Kan-leung Cheng, and Ugur Kuter. Caretaker: A Social Game for Studying Trust Dynamics. In *IEEE Third International Conference on and 2011 IEEE Third International Conference on Social Computing (SocialCom)*, pages 451–456. October 2011, Boston, Massachusetts. 10%
- C10. **J. Golbeck**, C. Robles, M. Edmondson, and K. Turner. Predicting personality from twitter. In *IEEE Third International Conference on and 2011 IEEE Third International Conference on Social Computing (SocialCom)*, pages 149–156. October 2011, Boston, Massachusetts. 10%
- C11. K.L. Cheng, U. Kuter, and **J. Golbeck**. Coevolving strategies in social-elimination games. In *IEEE Third International Conference on and 2011 IEEE Third International Conference on Social Computing (SocialCom)*, pages 118–126. October 2011, Boston, Massachusetts. 10%
- C12. Thomas Dubois, **Jennifer Golbeck**, and Aravind Srinivasan. Network Clustering Approximation Algorithm Using One Pass Black Box Sampling. In *Third IEEE International Conference on Social Computing (SocialCom)*, pages 418–424. October 2011, Boston, Massachusetts. (Best Paper Award). 10%
- C13. Thomas Dubois, **Jennifer Golbeck**, and Aravind Srinivasan. Predicting Trust and Distrust in Social Networks. In *Third IEEE International Conference on Social Computing (SocialCom)*, pages 418–424. October 2011, Boston, Massachusetts. 10%
- C14. **Jennifer Golbeck** and Derek Hansen. Computing Political Preference Among Twitter Followers. In *Proceedings of the 29th International Conference on Human Factors in Computing Systems (CHI '11)*, pages 1105–1108. April 2011, Vancouver, Canada. 23%
- C15. Greg Walsh and **Jennifer Golbeck** Curator: a game with a purpose for collection recommendation. In *Proceedings of the 28th international Conference on Human Factors in Computing Systems (CHI '10)*, pages 2079–2082. April 2010, Atlanta, Georgia. 22%
- C16. Freire, M., Plaisant, C., Shneiderman, B., and **Golbeck, J.** ManyNets: an interface for multiple network analysis and visualization. In *Proceedings of the 28th international Conference on Human Factors in Computing Systems (CHI '10)*, pages 213–222. Atlanta, Georgia, USA, April 10–15, 2010. 22%

- C17. Ugur Kuter, **Jennifer Golbeck**^α. Semantic Web Service Composition in Social Environments. *Proceedings of the International Semantic Web Conference (ISWC09)*, pages 344–358. November 2009, Washington, D.C. (Best Paper Award) 20%
- C18. Thomas DuBois, **Jennifer Golbeck**, Aravind Srinivasan. Rigorous Probabilistic Trust Inference with applications to clustering. *Proceedings of the IEEE/WIC/ACM International Conference on Web Intelligence*, pages 655–658. September 2009, Milan Italy. 18%
- C19. Derek Hansen, **Jennifer Golbeck**. Mixing it Up: Recommending Collections of Items. *Proceedings of the Conference on Human Factors in Computing Systems (CHI'09)*, pages 1217–1226. April 2009, Boston, Massachusetts. 24.5%
- C20. **Jennifer Golbeck**, Matthew Rothstein. Linking Social Networks on the Web with FOAF: A Semantic Web Case Study. *Proceedings of the Twenty-Third National Conference on Artificial Intelligence (AAAI-08)*, pages 1138–1143. July 2008, Chicago, Illinois. 24%
- C21. Ugur Kuter and **Jennifer Golbeck**^α. SUNNY: A New Algorithm for Trust Inference in Social Networks, using Probabilistic Confidence Models. *Proceedings of the Twenty-Second National Conference on Artificial Intelligence (AAAI-07)*, pages 1377–1382. July 2007, Vancouver, Canada. 27%
- C22. Yarden Katz and **Jennifer Golbeck**. Social Network-based Trust in Prioritized Default Logic. *Proceedings of The Twenty-First National Conference on Artificial Intelligence (AAAI-06)*, pages 1345–1350. July 2006, Boston, Massachusetts. 30%
- C23. **Jennifer Golbeck**, James Hendler. Inferring reputation on the semantic web. *Proceedings of the 13th International World Wide Web Conference*, 8 pages. May 2004. New York, NY. 14.6%
- C24. **Jennifer Golbeck**, Michael Grove, Bijan Parsia, Aditya Kalyanpur, and James Hendler. New Tools for the Semantic Web, *Proceedings of the 13th International Conference on Knowledge Engineering and Knowledge Management (EKAW 2002)*, pages 392–400. October 2002, Siguenza, Spain. 34%

2.E.ii.2 Papers at Other Conferences

- C25. Cody Buntain and **Jennifer Golbeck**. "Identifying social roles in reddit using network structure." Proceedings of the companion publication of the 23rd international conference on World wide web companion. International World Wide Web Conferences Steering Committee, 2014.
- C26. Greg Walsh and **Jennifer Golbeck**. 2014. StepCity: a preliminary investigation of a personal informatics-based social game on behavior change. In CHI '14 Extended Abstracts on Human Factors in Computing Systems (CHI EA '14). ACM, New York, NY, USA, 2371-2376.
- C27. Sibel Adali and **Jennifer Golbeck**. Predicting personality with social behavior. In *2012 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*, 8 pages. August 2012, Istanbul, Turkey.
- C28. Buntain,Cody, **Jennifer Golbeck**, Dana Nau, and Sarit Kraus. Advice and Trust in Games of Choice. In *Tenth Annual Conference on Privacy, Security and Trust*, 2 pages. July 2012, Paris, France.

- C29. **Jennifer Golbeck**, Hal Warren, and Eva Winer. Making trusted attribute assertions online with the publish trust framework. In *Tenth Annual Conference on Privacy, Security and Trust*, 2 pages. July 2012, Paris, France.
- C30. David Yates and **Jennifer Golbeck**. Is facebook appropriate for the classroom? a comparison of student and faculty perspectives. In *Proceedings of the Euro-American Conference for Academic Disciplines and Creativity*, 27 pages. June 2012, Prague, Czech Republic. (Outstanding Research Presentation).
- C31. **Jennifer Golbeck**. STEM initiatives for improved communication skills in the zombie apocalypse. In *Proceedings of the 2012 ACM Conference on Human Factors in Computing Systems Extended Abstracts*, pages 1425–1426. May 2012, Austin, TX.
- C32. **Jennifer Golbeck** and Carman Neustaedter. Pet video chat: monitoring and interacting with dogs over distance. In *Proceedings of the 2012 ACM Conference on Human Factors in Computing Systems Extended Abstracts*, pages 1425–1426. May 2012, Austin, TX.
- C33. **Jennifer Golbeck**, Cristina Robles, Karen Turner Predicting Personality with Social Media. *Proceedings of alt.chi, ACM Conference on Human Factors in Computing (CHI 2011)*, pages 253–262. April 2011, Vancouver, Canada.
- C34. James Michaelis, **Jennifer Golbeck**, James Hendler Leveraging the Semantic Web to Enable Content Mashup For End Users. *Proceedings of HCI International 2011*, 10 pages. July 2011, Orlando, Florida.
- C35. **Jennifer Golbeck**, Kenneth Fleischmann. Trust in Social Q &A: The Impact of Text and Photo Cues of Expertise. *Proceedings of ASIST 2010*, pages 1–10. October 2010, Pittsburgh, Pennsylvania.
- C36. Klavans, Judith, **Jennifer Golbeck**. Integrating Multiple Computational Techniques for Improving Image Access: Applications to Digital Collections. *Proceedings of the 2010 Grace Hopper Conference*, 5 pages. September 2010, Atlanta, Georgia.
- C37. Dana Rotman, **Jennifer Golbeck**, Jennifer Preece. The Community is Where the Rapport Is: On Sense and Structure in the YouTube Community. *2009 Communities & Technologies Conference*, pages 41–50. June, 2009. University Park, Pennsylvania.
- C38. **Jennifer Golbeck**. On the Internet, Everybody Knows You’re a Dog: The Human-Pet Relationship in Online Social Networks. *ACM Conference on Human Factors in Computing Systems Extended Abstracts*, pages 4495-4500. April 2009, Boston, Massachusetts.
- C39. **Jennifer Golbeck**, Michael Wasser. SocialBrowsing: Integrating Social Networks into Web Browsing. *ACM Conference on Human Factors in Computing Systems Extended Abstracts*, pages 2381–2386. April 2007, San Jose, California.
- C40. Aaron Mannes, **Jennifer Golbeck**. Ontology Building: A Terrorism Specialist’s Perspective. *Proceedings of the IEEE Aerospace Conference*, 5 pages. March 2007, Big Sky, Montana.
- C41. Aaron Mannes, **Jennifer Golbeck**. Building a Semantic Web Portal for Counterterror Analysis. *Proceedings of the IEEE Aerospace Conference*, 5 pages. March 2007, Big Sky, Montana.
- C42. **Jennifer Golbeck**, Computing with Trust: Definition, Properties, and Algorithms. *Proceedings of International Conference on Security and Privacy in Communication Networks*, pages 1-7. August 2006, Baltimore, Maryland.

- C43. **Jennifer Golbeck**. Generating Predictive Movie Recommendations from Trust in Social Networks. *Proceedings of the Fourth International Conference on Trust Management*, pages 93–104. May 2006, Pisa, Italy.
- C44. **Jennifer Golbeck**, James Hendler. FilmTrust: Movie recommendations using trust in web-based social networks. *Proceedings of the IEEE Consumer Communications and Networking Conference*, pages 497–529. January 2006, Las Vegas, Nevada.
- C45. **Jennifer Golbeck**, Bernardo Cuenca Grau, Christian Halaschek-Wiener, Aditya Kalyanpur, Yarden Katz, Bijan Parsia, Andrew Schain, Evren Sirin, and James Hendler. Semantic web research trends and directions. *Proceedings of the First international Conference on Pattern Recognition and Machine Intelligence, PReMI. 2005*, pages 160–169. December 2005, Kolkata, India.
- C46. **Jennifer Golbeck**, James Hendler. Accuracy of Metrics for Inferring Trust and Reputation in Semantic Web-based Social Networks, *Proceedings of 14th International Conference on Knowledge Engineering and Knowledge Management*, pages 116–131. October 2004, Northamptonshire, UK.
- C47. **Jennifer Golbeck**, James Hendler. Reputation Network Analysis for Email Filtering. *Proceedings of the First Conference on Email and Anti-Spam*, pages 54–58. July 2004, MountableView, California.
- C48. **Jennifer Golbeck**, Bijan Parsia, James Hendler. Trust Networks on the Semantic Web, *Proceedings of Cooperative Information Agents*, pages 238–249. August 2003, Helsinki, Finland.
- C49. Mutton, Paul and **Jennifer Golbeck**. Visualization of Semantic Metadata and Ontologies, *Proceedings of Information Visualization*, pages 300–305. July 2003, London, UK.
- C50. Kalyanpur, Aditya and **Jennifer Golbeck** and Michael Grove and Jim Hendler. 2002. An RDF Editor and Portal for the Semantic Web, *Proceedings of Semantic Authoring, Annotation & Knowledge Markup (ECAI 2002)*, 4 pages. July 2002, Lyon, France.
- C51. **Jennifer Golbeck**. Evolving Strategies for the Prisoner’s Dilemma, *Advances in Intelligent Systems, Fuzzy Systems, and Evolutionary Computation*, pages 299–306. February 2002, Interlaken, Switzerland.

2.E.iii.3 Papers at Refereed Workshops

- W1. **Jennifer Golbeck**, Thameem Khan, Nilay Sanghavi and Nishita Thakker. Multiple Personalities on the Web: A Study of Shared Mboxes in FOAF. *Proceedings of the 2009 Workshop on Social Data on the Web*, 12 pages. October 2009, Washington, DC.
- W2. Thomas DuBois, **Jennifer Golbeck**, John Kleint, Aravind Srinivasan. Improving Recommendation Accuracy by Clustering Social Networks with Trust. *Proceedings of the ACM RecSys 2009 Workshop on Recommender Systems and the Social Web*, 8 pages. October 2009, New York, New York.
- W3. Audun Josang, **Jennifer Golbeck**, Challenges for robust trust and reputation systems. *Proceedings of the 5th International Workshop on Security and Trust Management*. 12 pages. August, 2009, Saint Malo, France.

- W4. Elena Zheleva, **Jennifer Golbeck**, Lise Getoor, Ugur Kuter. Using Friendship Ties and Family Circles for Link Prediction. *SNA-KDD Workshop on Social Network Mining and Analysis*, pages 97-113. August 2008, Las Vegas, Nevada.
- W5. V. Shiv Naga Prasad, Behjat Siddiquie, **Jennifer Golbeck**, and Larry S. Davis. Classifying Computer Generated Charts. *In Proceedings of the Workshop on Content Based Multimedia Indexing*, pages 85-92. June 2007, Bordeaux, France.
- W6. **Jennifer Golbeck**, Aaron Mannes. Using Trust and Provenance for Content Filtering on the Semantic Web. *Proceedings of the Workshop on Models of Trust on the Web*, 9 pages. May 2006, Edinburgh, UK.
- W7. Christian Halaschek-Wiener, **Jennifer Golbeck**, Bijan Parsia, Vladimir Kolovski, and Jim Hendler. Image browsing and natural language paraphrases of semantic web annotations. *First International Workshop on Semantic Web Annotations for Multimedia (SWAMM)*, 12 pages. May 2006, Edinburgh, UK.
- W8. Christian Halaschek-Wiener, **Jennifer Golbeck**, Andrew Schain, Michael Grove, Bijan Parsia, and Jim Hendler. Annotation and provenance tracking in semantic web photo libraries. *Proceedings of the International Provenance and Annotation Workshop*, pages 82–89. May 2006, Chicago, Illinois.
- W9. **Jennifer Golbeck**. Combining Provenance with Trust in Social Networks for Semantic Web Content Filtering. *Proceedings of the International Provenance and Annotation Workshop*, pages 101–108. May 2006, Chicago, Illinois.
- W10. Yarden Katz and **Jennifer Golbeck**. Nonmonotonic Reasoning with Web-Based Social Networks. *Proceedings of the Workshop on Reasoning on the Web*, pages 469–475. May 2006, Edinburgh, UK.
- W11. Aaron Mannes, **Jennifer Golbeck**, James Hendler. Semantic Web and Target-Centric Intelligence: Building Flexible Systems that Foster Collaboration. *Proceedings of Workshop Intelligent User Interfaces for Intelligence Analysis*, 4 pages. January 2006, Sydney, Australia.
- W12. **Jennifer Golbeck**. Semantic Web Interaction through Trust Network Recommender Systems. *End User Semantic Web Interaction Workshop*, pages 327–339. November 2005, Sanibel Island, Florida.
- W13. **Jennifer Golbeck**. Personalizing Applications through Integration of Inferred Trust Values in Semantic Web-Based Social Networks. *Semantic Network Analysis Workshop*, pages 1005–1018. November 2005, Sanibel Island, Florida.
- W14. Bijan Parsia, Taowei Wang, and **Jennifer Golbeck**. Visualizing Web Ontologies with Crop-Circles. *End User Semantic Web Interaction Workshop*, pages 1–8. November 2005, Sanibel Island, Florida.
- W15. Christian Halaschek-Wiener, Andrew Schain, **Jennifer Golbeck**, Michael Grove, Bijan Parsia, Jim Hendler. A flexible approach for managing digital images on the semantic web. *5th International Workshop on Knowledge Markup and Semantic Annotation*, pages 49–58. November 2005, Galway, Ireland.

- W16. Kalyanpur, Aditya, Nada Hashmi, **Jennifer Golbeck**, Bijan Parsia. Lifecycle of a Casual Web Ontology Development Process. *Proceedings of the Workshop on Application Design, Development and Implementation Issues in the Semantic Web*, 8 pages. May 2004, New York, New York.
- W17. **Jennifer Golbeck**, Paul Mutton, Semantic Web Interaction on Internet Relay Chat, *Proceedings of Interaction Design on the Semantic Web*, 5 pages. May 2004, New York, New York.

2.E.iii.4 Refereed Posters²

- P1. Irena Eleta and **Jennifer Golbeck**. Bridging Languages in Social Networks: How Multilingual Users of Twitter Connect Language Communities?, *ASIS&T 2012 Annual Meeting*, October 2012, Baltimore, Maryland.
- P2. Bert Huang and Angelika Kimmig and Lise Getoor and **Jennifer Golbeck**. Probabilistic Soft Logic for Trust Analysis in Social Networks, *International Workshop on Statistical Relational AI*. August 2012, Catalina Island, CA.
- P3. Cristina Robles, **Jennifer Golbeck**. Facebook Relationships in the Workplace. *Proceedings of CompleNet 2012*. March 2012, Marathon, Florida.
- P4. Judith L. Klavans, Susan Chun, **Jennifer Golbeck**, Dagobert Soergel, Robert Stein, Ed Bachtta, Rebecca LaPlante, Kate Mayo, John Kleint. Language and Image: T3 = Text, Tags, and Trust. *2009 Digital Humanities Conference*. July 2009, College Park, Maryland.
- P5. **Jennifer Golbeck**, Jeanne Kramer-Smyth. Visualizing Archival Collections with ArchivesZ. *Proceedings of the 2009 Digital Humanities Conference*, July 2009, College Park, Maryland.
- P6. Praveen Paruchuri, Preetam Maloor, Bob Pokorny, Aaron Mannes, **Jennifer Golbeck**. Cultural Modeling in a Game-Theoretic Framework, *AAAI Fall Symposium on Adaptive Agents in Cultural Contexts*. November 2008, Washington, DC.
- P7. Wu, P. F., Qu, Y., Fleischmann, K., **Golbeck, J.**, Jaeger, P., Preece, J., & Shneiderman, B. Designing a Community-Based Emergency Communication System: Requirements and Implications. *Annual Meeting of the American Society for Information Science and Technology (ASIS&T 2008)*. October 2008, Columbus, OH.
- P8. **Jennifer Golbeck**, FilmTrust: Movie Recommendations from Semantic Web-based Social Networks. *IEEE Consumer Communications and Networking Conference*. January 2006, Las Vegas, Nevada.
- P9. **Jennifer Golbeck**, FilmTrust: Movie Recommendations from Semantic Web-based Social Networks. *International Semantic Web Conference*. November 2005, Galway, Ireland
- P10. Halaschek-Wiener, Christian, Jennifer Golbeck, Andrew Schain, Michael Grove, Bijan Parsia, Jim Hendler. Photostuff-an image annotation tool for the semantic web. *Proceedings of the Poster Track, 4th International Semantic Web Conference*. November 2005, Galway, Ireland.

² Peer-reviewed poster presentations, typically accompanied by short descriptions in associated proceedings.

- P11. Pin Xu, Lyubov Remennik, N. Rao Thotakura, **Jennifer Golbeck**, Liju Fan. Prototype development of an immunology ontology that integrates multiple biomedical ontologies. *7th International Protege Conference*. July 2004, Washington, DC.
- P12. **Jennifer Golbeck**, Bijan Parsia, James Hendler. Trust Networks on the Semantic Web. *Twelfth International World Wide Web Conference*, May 2003, Budapest, Hungary.
- P13. **Jennifer Golbeck**, Ron Alford, Ross Baker, Mike Grove, Jim Hendler, Aditya Kalyanpur, Amy Loomis, Ron Reck. Semantic Web Tools from MINDSWAP. *1st Annual International Semantic Web Conference*, June 2002, Sardinia, Italy.

2.I Fellowships, Prizes, and Awards

- 2015 University of Maryland Research Communication Award
- 2014 University System of Maryland Board of Regents Mentoring Award
- TED Most Powerful Talks of 2014
- 2011 IEEE Conference on Social Computing Best Paper Award
- 2009 International Semantic Web Conference Best Paper Award
- Research Fellow, Web Science Research Initiative (2008 – present)
- IEEE Intelligent Systems Ten to Watch³ (May 2006)
- 2005 DARPA IPTO Young Investigator (May 2005)

2.J Editorships, Editorial Boards, and Reviewing Activities for Journals and Other Learned Publications

2.J.i Editorial Boards

- Editorial Board, Data Science
- Editorial Committee, Journal of Web Semantics – Special Issue “Exploring New Interaction Designs Made Possible by the Semantic Web”
- Guest Editor, Security & Privacy Magazine, Special Issue on “Security in Social Networks”

2.J.ii Conference Chair Positions

- Program Co-chair, **Recsys 2015**: Conference on Recommender Systems
- Fellowships Chair, **ISWC 2012**: 11th International Semantic Web Conference
- Fellowships Chair, **ISWC 2011**: 10th International Semantic Web Conference
- Tutorials Co-chair, Program Committee Vice Chair, **ISWC 2009**: 8th International Semantic Web Conference
- Co-organizer, **SWUI 2009**: Semantic Web User Interactions: Exploring HCI Challenges Workshop at ISWC09.
- Co-organizer, Workshop on Social Technology for Biodiversity: Motivation, Credibility & Community, 2008
- Co-organizer, **SWUI 2008**: Semantic Web User Interactions: Exploring HCI Challenges Workshop at CHI’08
- Semantic Web Challenge Co-chair, **ISWC 2007**: 6th International Semantic Web Conference
- Semantic Web Challenge Co-chair, **ASWC 2007**: 2nd Asian Semantic Web Conference

³list of top ten young AI researchers

- Co-organizer, Helping Users Make Sense of Social Networks: A Workshop, 2007
- Proceedings Chair, **ISWC 2006**: 5th International Semantic Web Conference
- Co-organizer, Workshop on Trust, Security, and Reputation on the Semantic Web, 2006
- Organizer, Developers Day Trust on the Web Track, **WWW 2005**: 13th International World Wide Web Conference

2.J.iii Reviewing: Journals

- ACM Computing Surveys: 2012 (1)
- ACM Transactions on Intelligent Systems: 2012 (2)
- ACM Transactions on Internet Technology: 2009 (1)
- ACM Transactions on Multimedia Computing, Communications, and Applications: 2009 (1)
- ACM Transactions on the Web: 2008 (2), 2009(1), 2012 (1)
- Behaviour and Information Technology: 2008 (1)
- Artificial Intelligence: 2008 (1)
- European Journal of Operational Research: 2007 (1)
- Foundations and Trends in Information Retrieval: 2015 (1)
- Foundations and Trends in Web Science: 2013 (1),
- International Journal of Human Computer Studies: 2008 (1)
- International Journal on Semantic Web and Information Systems: 2007 (1)
- Journal of the American Society for Information Science and Technology: 2010 (1), 2011 (1), 2012 (1)
- Journal of Web Semantics: 2006 (1), 2007 (3), 2008 (1), 2012 (2)
- Policy & Internet: 2012 (1)

2.J.iv Reviewing: Top-Tier Conferences

- **AAAI**: AAAI Conference on Artificial Intelligence, Senior Program Committee 2011, 2012; Program Committee 2006, 2007, 2008, 2009, 2010
- **RecSys**: ACM Conference on Recommender Systems, Senior Program Committee 2010, 2011, 2012
- **CSCW**: Computer Supported Cooperative Work, Program Committee 2008, 2012, 2013
- **CHI**: ACM Conference on Human Factors in Computing, Program Committee 2009, 2010, 2011, 2012
- **IJCAI**, International Joint Conference on Artificial Intelligence, Program Committee 2009
- **WWW**: International World Wide Web Conference, Program Committee 2006, 2007, 2008, 2009
- **ISWC**: International Semantic Web Conference, Senior Program Committee 2009, 2010, 2011, 2012, Program Committee 2008
- **KDD**: Conference on Knowledge Discovery and Data Mining, Senior Program Committee 2010
- **GROUP**: Conference on Supporting Group Work, Program Committee 2009
- **IJCAI**: International Joint Conferences on Artificial Intelligence, Program Committee 2009

2.J.v Reviewing: Other Venues

- **IFIPTM**: International Conference on Trust Management, Program Committee 2009, 2010, 2011, 2012
- **IEA-AIE**: Engineering Knowledge and Semantic Systems, Program Committee 2011

- **SSW**: AAAI Symposium on the Social Semantic Web, Program Committee: 2009
- **WebSci**: Web Science Conference: Society On-Line International Semantic Web Conference, Program Committee 2008
- **BlogTalk**: International Conference on Social Software, Program Committee 2008
- **PST**: Conference on Privacy, Security and Trust, Program Committee 2008
- **SAC**: ACM Symposium on Applied Computing, Program Committee 2008, 2005
- **CoSoSo**: International Conference on Social Software, Program Committee 2008
- **IUI**: Intelligent User Interfaces Conference, Program Committee 2008
- **CEAS**: Conference on Email and Anti-Spam, Program Committee 2007
- **CIKM**: onference on Information and Knowledge Management, Program Committee 2007
- **CAT**: Context Awareness and Trust, Program Committee 2007
- **Policy**: IEEE Policy, Program Committee 2007
- **SWC**: Semantic Web Challenge, Program Committee 2007
- **SCCSW**: Social and Collaborative Construction of Structured Knowledge Workshop, Program Committee 2007
- **SWCKA**: AAAI Fall Symposium on Semantic Web for Collaborative Knowledge Acquisition, Program Committee 2006
- **EKAW**: International Conference on Knowledge Engineering and Knowledge Management, Program Committee 2006
- **SECOVAL**: The Value of Security through Collaboration Workshop, Program Committee 2005, 2006.
- **SWUI**: Semantic Web User Interaction Workshop, Program Committee 2006
- **OWLED**: OWL Experiences and Directions, Program Committee 2006
- **SPTWS**: Workshop on Security, Privacy, and Trust in Web Services, Program Committee 2006
- **MTW**: Models of Trust Workshop, Program Committee 2006
- **OWLED**: OWL: Experiences and Directions Workshop, Program Committee 2005
- **FOAF**: Workshop on Friend of a Friend, Social Networking, and the Semantic Web, Program Committee 2004
- **SWUI**: First International Workshop on Interaction Design and the Semantic Web, Program Committee 2004
- **VIKE**: Visualizing Information in Knowledge Engineering (VIKE), Program Committee 2003

2.K Other

2.K.i External Talks (see section 2.E.i for keynote and similar talks)

- “Opportunities and risks of discovering personality traits from social media”
CHI 2014
Toronto, Canada (May 29, 2014)
- “Predicting User Attributes in Social Media ”
Society 2013
State College, PA (May 9, 2013)
- “Generational Computing and Social Media”
Department of Defense Deep Dive on Obesity
Portsmouth, VA (August 19, 2012)
- “Information Sharing in Social Networks”
FBI Lookout Group Meeting

- Dallas, TX (August 14, 2012)
- “Social Networks and HCI Research”
National Reconnaissance Office
Chantilly, VA (March 15, 2012)
- “Information Sharing in Social Networks”
Potomac Valley Chapter (PVC) of the American Society of Information Science and Technology
Washington, DC (April 10, 2012)
- “Computing Trust and Personality in Social Networks”
Aberdeen Proving Ground Network Science Meeting
Aberdeen, MD (March 5, 2012)
- “Managing Content With Trust”
Professional & Scholarly Publishers 2012 Annual Conference
Washington, DC (February 2, 2012)
- “Information Sharing in Social Networks”
FBI Lookout Group Meeting
Dallas, TX (January 9, 2012)
- “From Open Data to Open Worlds: The Power of the Semantic Web” World Bank Information Management Technology Group Forum
Washington, DC (December 8, 2011)
- “Information Sharing in Social Networks”
FBI Headquarters – Counterintelligence Division All-hands Meeting
Washington, DC (November 17, 2011)
- “Predicting Personality from Social Media”
FBI Counterintelligence Behavioral Analysis Unit
Quantico, VA (November 1, 2011)
- “Computing with Social Trust”
Army Research Lab Seminar Series
Adelphi, MD (December 8, 2010)
- “Computing with Social Trust”
Aberdeen Proving Ground CTA Seminar
Aberdeen, MD (November 16, 2010)
- “Personality Traits and Facebook Profiles”
Social and Cognitive Network Academic Research Center Seminar Series
Rensselaer Polytechnic Institute, Troy, NY (April 18, 2010)
- “Social Recommender Systems on the Semantic Web”
National Archives Semantic Web Myth and Fact
Washington, DC (November 17, 2009)
- “Social Software in Digital Libraries and Archives”
Online Computer Library Center (OCLC)
Arlington, VA (November 5, 2009)
- “Recommender Systems, Social Trust, and Television Applications”
StreamSage (a division of Comcast)
Washington, DC (September 9, 2009)
- “Social Networks on the Semantic Web”
Microsoft Research Faculty Summit
Redmond, Washington (July 28, 2008)
- “Understanding Social Networks”

- The 25th Annual Human-Computer Interaction Lab Symposium
College Park, Maryland (May 29, 2008)
- “Social Networks and Intelligent Systems: Using Relationships for Information Access”
University of Illinois Urbana-Champaign HCI Seminar
Urbana, Illinois (February 29, 2008)
 - “Social Networks and the Semantic Web”
Invited talk at Rensselaer Polytechnic Institute
Troy, New York (February 4, 2008)
 - “Recommending Movies with Social Networks”
StreamSage / Comcast
Washington, DC (November 2007)
 - “Social Information Access: Connecting Distributed Information and People on the Web”
Presentations with similar titles and content given in the following venues
 - Northeastern University College of Computer and Information Science
Boston, Massachusetts (February 2007)
 - University of Maryland College of Information Studies
College Park, Maryland (February 2007)
 - Drexel College of Information Science and Technology
Philadelphia, Pennsylvania (April 2007)
 - “Analysis and Applications of Web-based Social Networks”
University of Illinois at Urbana-Champaign Age of Networks: Social, Cultural, and Technological Connections Speaker Series
Urbana, Illinois (January 22 2007)
 - “Provenance Challenge: A Semantic Web Approach”
Global Grid Forum – GGF18/GridWorld
Washington, DC (September 13 2006)
 - “The Other Kind of Networking: Social Networks on the Web”
Duke University (March 2006)
 - Web-based Social Network Analysis for Socially Intelligent Applications
University of Illinois at Chicago (November 2005)
 - “Trust in Social Networks”
National Security Agency Knowledge Discovery Research Colloquium
Ft. Meade, Maryland (August 2005)
 - “Connections, Computation, and Cinema”
Presentations with similar titles and content given in the following venues
 - University of Georgia, March 2005.
 - MIT Media Lab, March 2005.
 - “Inferring Trust in Web-based Social Networks”
National Security Agency
Ft. Meade, Maryland (February 2005)
 - “Trust on the Semantic Web”
Thirteenth Annual World Wide Web Conference Developers Day
New York, New York (May 2004)
 - “The Semantic Web as a Complex System”
International Conference on Complex Systems
Boston, Massachusetts (May 2004)

- “Metadata Visualization Challenges”
NASA Goddard Semantic Web Interest Group
Greenbelt, Maryland (November 2003)
- “Semantic Web: Structure and Modeling”
Half-day workshop at the Howard University
Washington, DC (June 2003)
- “Putting Time into Cognitive Systems: From Real-Time Operating Systems to Information Dynamics”
Virtual Worlds and Simulation Conference
Orlando, Florida (January 2003)
- “Tools on the Semantic Web”
Half-day workshop at the Howard University
Washington, DC (November 2002)
- “Small Worlds on the Semantic Web”
Science on the Semantic Web (SWS) Workshop
Boston, Massachusetts (October 2002)
- “Evolving Strategies for the Prisoners Dilemma”
13th International Conference on Game Theory
Stony Brook, New York (July 2002)
- “Semantic Web Do-It-Yourself: Tools for Generating RDF Content”
NASA Goddard Semantic Web Interest Group
Greenbelt, Maryland (April 2002)

2.K.ii Internal Talks

- “Video Chat for Pets”
HCIL Symposium
College Park, Maryland (May 22, 2012)
- “Social Network Strategies for Surviving the Zombie Apocalypse”
HCIL Symposium
College Park, Maryland (May 22, 2012)
- “The Twitter Mute Button”
HCIL Symposium
College Park, Maryland (May 22, 2012)
- “Understanding Users and Relationships in Social Networks”
MURI Virtual Brown Bag
College Park, Maryland (April 9, 2012)
- “Computing Trust in Social Networks”
Guest Lecture to PSY228Q: The psychology of social networking and social computing
College Park, Maryland (April 2, 2012)
- “Social Computing 2”
Guest Lecture to CMSC434: Intro to HCI
College Park, Maryland (November 30, 2011)
- “Social Computing 1”
Guest Lecture to CMSC434: Intro to HCI
College Park, Maryland (September 21, 2011)
- “Understanding Users and Relationships in Social Networks”

HCIL Symposium

College Park, Maryland (May 25, 2011)

- “Trust, Ties, and Information Diffusion in Social Networks”
Guest Lecture in INFM289j: Social Media Campaigns for the WellBeing of Humankind
College Park, Maryland (November 22, 2010)
- “Recommender Systems, Social Networks, and Applications”
Guest lecture to CPSP218J: Media, Self, and Society
College Park, Maryland (September 20, 2010)
- “Twitter Use by the US Congress”

HCIL Symposium

College Park, Maryland (May 26, 2010)

- “Recommender Systems, Social Networks, and Applications”
Guest lecture to CPSP218J: Media, Self, and Society
College Park, Maryland (September 8, 2009)
- “Designing Systems to Help Find Experts”

iSchool Colloquium

College Park, Maryland (September 15, 2008)

- “Social Networks on the Web: Challenges and Opportunities”
Smith School of Business, University of Maryland
College Park, Maryland (March 14, 2008)
- “Social Trust for Information Access”
Center for Information Policy and E-Government (CIPEG) Policy Seminar Series
College Park, Maryland (February 25, 2008)
- “Social information access -using social networks to sort, filter, and aggregate”
Human-Computer Interaction Lab (HCIL) Brown Bag Lunch
College Park, Maryland (November 8, 2008)
- “Inferring Trust in Social Networks for Information Presentation”
Computational Linguistics and Information Processing (CLIP) Lab Colloquium
College Park, Maryland (October 3, 2007)

2.K.iii Panels⁴

- Panelist, Social Media, NewsVision (digital media conference), March 30, 2009, Washington, DC (invited)
- Panelist, Data Fusion and Data Enrichment Panel, Director of National Intelligence Open Source Conference, July 2007, Washington, DC (invited)

2.K.iv Media Mentions

Online and Print Media⁵

- Huffington Post: The Fall of Facebook - and What’s Next (June 25, 2014)
- Understanding User Generated Tags for Digital Collections: An Interview with Jennifer Golbeck* (May 1, 2013)
- Associated Press: What you ‘like’ on Facebook can be revealing (March 11, 2013)†
- Politico: ‘Weinergate’ a cautionary tale? (May 31, 2011)†
- Daily Caller: Facebook can serve as personality test (May 23, 2011)

⁴ Appearances on panels, not accompanied by papers. Refereed or invited as noted.

⁵†Denotes cases where I was interviewed.

- ABC News: Facebook can serve as personality test (May 13, 2011)
- Jezebel: Your Facebook Is The New “Personality Test” (May 13, 2011)
- Time: Put Your Best Face Forward: Facebook Deemed an Accurate Personality Test for Employers (May 10, 2011)
- ABC Online: Facebook can serve as personality test (May 9, 2011)
- Discovery News: Facebook can serve as personality test (May 9, 2011)
- Seattle Post Intelligencer: What Facebook tells your boss about your personality (May 9, 2011)
- Hindustan Times: Facebooks employee personality test (May 10, 2011)
- New Scientist: Why Facebook friends are worth keeping (July 15, 2010)†
- Corp Comms Magazine: Politicians Tweet Sweet Nothings (September 22, 2009)
- Sacramento Bee: Tweet-tweet goes Schwarzenegger, a big Twitter user (September 22, 2009)†
- Stars & Stripes (U.S. Military Newspaper)
 - Japan Edition (September 22, 2009)†
 - Mideast Edition (September 22, 2009)†
 - Korea Edition (September 21, 2009)†
- USTINET News: Study: Congress Tweets Lack Citizen Talk (September 21, 2009)
- United Press International: Study: Congress Tweets lack citizen talk (September 21, 2009)†
- Baltimore Sun: Congressional Twitter mostly twaddle (September 21, 2009)†
- San Diego Union-Tribune: Politicians on Twitter have a lot to say about themselves (September 20, 2009)†
- Lawrence Journal World & News: Members of Congress tweet their own horns (September 20, 2009)†
- The Telegraph (Calcutta, India): Blowing tweet horns (September 20, 2009)†
- The News Journal (Wilmington, DE): For Twitter-happy politicians, the service is all about them (September 20, 2009)†
- Honolulu Advertiser: Politicians Tweets self-promotional (September 20, 2009)†
- Huffington Post: Politicians On Twitter: Tweets By Lawmakers Boastful Or Boring: Study (September 19, 2009)†
- Hawaii Reporter: Politicians Tweets Are Mostly Self-Promotional, Researchers Say (September 19, 2009)†
- Austin American Statesman: Lawmakers use Twitter for self-promotion, study finds (September 19, 2009)†
- The Arizona Republic: Surprise! Twitter from D.C. about self-promotion (September 18, 2009)†
- St. Petersburg Times: Times Wires (September 18, 2009)†
- The Hill: Lawmakers Tweets Largely Self-Promotional (September 18, 2009)†
- The Washington Post: Politicians Tweets Are Mostly Self-Promotional, Researchers Say (September 18, 2009)†
- Politico: Study: Congress Needs Twitter Help (September 16, 2009)†
- Kansas City Star: Study: Congress all a Twitter (September 15, 2009)†
- Ars Technica: Who do you trust 2.0: Building better preference predictions (September 21, 2008)†
- Delmarva Daily Times: ALL ABOUT ME: ‘25 Things’ becomes one of Facebook’s biggest fads. (February 27, 2008)†
- WEYI NBC25: Facebook backs down on change (February 18, 2009)†
- Wired.com: Obama Supporters Act to Clear FUD. (November 12, 2007)†

- Physics World: Talking Physics in the Social Web (January 2007)
- Salon.com: You are who you know (June 15, 2004)†

Podcasts, Radio, and TV

- , NPR, The Kojo Nnamdi Show, guest host (January 2014-present)
- NPR, To The Point (January 3, 2014)
- NPR, The Kojo Nnamdi Show, interview on “From :) to GIFS: Expressing ourselves with images online” (March 21, 2013)
- Wisconsin Public Radio, The Joy Cardin Show, interview on “What your Facebook Likes say about you” (March 21, 2013)
- NPR, interview on social media and the Olympics (August 1, 2012)
- NPR, The Kojo Nnamdi Show, interview on “The Future Of Neighborhood Communication” (July 31, 2012)
- NPR, The Kojo Nnamdi Show, interview on “Frictionless Web: Social Readers And Seamless Sharing” (June 12, 2012)
- NPR, The Kojo Nnamdi Show, interview on “The Interest in Pinterest” (February 28, 2012)
- NPR, The Kojo Nnamdi Show, interview on “The New Sharing Economy” (October 31, 2011)
- NPR, The Kojo Nnamdi Show, interview on “Social Networking Grows Up” (March 24, 2011)
- NPR, The Kojo Nnamdi Show, interview on photos and social media (February 15, 2011)
- NPR, The Animal House, interview on social networks for pets (January 15, 2011)
- BBC World Service Newshour, interview on Twitter use by PMs (October 21, 2009)
- WHIO TV, interview on the use of Twitter by Congress (October 3, 2009)
- KCSN Radio, interview on the use of Twitter by Congress (September 21, 2009)
- WTOP Radio, interview on the use of Twitter by Congress (September 15, 2009)
- NBC 4, TV interview on Facebook data sharing policy (February 17, 2009)
- Science Podcast, interview on trust in social networks (September 18, 2008)
- NBC 4, TV interview on internet predators (February 21, 2008)
- The Diane Rehm Show (National Public Radio), panelist for discussion of Social Networks (July 10, 2006)

3 Teaching, Mentoring, and Advising

3.A Courses Taught in the Last Five Years

- INST 775: HCI Capstone Prep
 - Fall 2013 (enrollment 12)
- INST 631 / LBSC795: Fundamentals of HCI
 - Fall 2012 (enrollment 13)
 - Fall 2011 (enrollment 15)
- INST 633 / LBSC708L: Analyzing Social Networks and Social Media
 - Spring 2011 (enrollment 22)
 - Spring 2013 (enrollment 18)
 - Summer 2013 (enrollment 19)
 - Winter 2013 (enrollment 13)
 - Summer 2015 enrollment 20

- INFM289I: Social Networks: Technology and Society
 - Spring 2010 (enrollment 67)
 - Fall 2010 (enrollment 64)
 - Spring 2012 (enrollment 75)
- LBSC 690: Information Technology
 - Summer 2012 (enrollment 18)
 - Spring 2012 (enrollment 18)
 - Winter 2011 (enrollment 22)
 - Winter 2010 (enrollment 16)
 - Spring 2009 (enrollment 26)
 - Fall 2007 (enrollment 25)
- LBSC 743: Development of Internet Applications
 - Spring 2010 (enrollment 32)
 - Fall 2009 (enrollment 27)
 - Spring 2009 (enrollment 36)
- LBSC 888: Doctoral Seminar
 - Fall 2008 (enrollment 7)
 - Spring 2014 (enrollment 7)
- INFM 220: Information Users in Social Context
 - Spring 2008 (enrollment 22)
- CMSC 498N: Small Worlds, Social Networks, and Web Algorithms
 - Spring 2007 (enrollment 14)

3.B Course or Curriculum Development

- Fall 2012: Development of HCI Masters capstone classes, INST 775 and 776
- Fall 2011: Redevelopment of LBSC795 / INST631 for HCI Masters program
- Spring 2010: First offering of new course for undergraduate iSeries, INFM289I: Social Networks, Technology, and Society
- Winter 2010. Developed online version of LBSC690: Information Technology
- Spring 2009. First offering of new course. INFM 743: Development of Internet Applications
- Spring 2009. Significant course revision. LBSC 690: Information Technology
- Spring 2008. First offering of new course. INFM 220: Information Users in Social Context
- Fall 2007. Development of new course LBSC 888: Doctoral Seminar (with Allison Druin)
- Spring 2007. First offering of new course. CMSC 498N: Small Worlds, Social Networks, and Web Algorithms

3.C Textbooks, Manuals, Notes, Software, Web pages and Other Contributions to Teaching

3.C.i Textbooks

- **Jennifer Golbeck**, Social Network and Social Media Analysis. Burlington, MA: Morgan Kaufmann, 2013.

3.C.ii Other Contributions to Teaching

- Developed Web-accessible course material (slides, exercises, assignments, sample exams, etc.) for LBSC 690. Adapted from material by Jimmy Lin and Allison Druin.
- Developed Web-accessible course material for INFM 743.
- Developed Web-accessible course material for INFM 220.
- Built three two-week modules (mini-courses) for LBSC 888.
- Developed and implemented online module system for LBSC 888, where faculty can build and submit two-week modules for the doctoral seminar.
- Developed Web-accessible course material for CMSC 498N.

3.E Advising: Other Than Research Direction

3.E.i Undergraduate

- Anthony Rogers, Individual Studies Program, Fall 2007 – present
- Ben Falk, Individual Studies Program, Spring 2008 – present
- Ryan McCormick, Individual Studies Program, Spring 2008 – present

3.E.ii Master's

- Spring 2009: 13 advisees
- Fall 2008: 13 advisees

3.F Advising: Research Direction

3.F.i Undergraduate

- Danny Laurence
Spring 2012 – present
Research topic: Computing trust in social networks
- Elaine Wang
Spring 2012 – present
Research topic: Multilingual Use of Twitter
- Vincent Kuyatt (Undergraduate Student, Computer Science)
Spring 2011
Research Topic: Real time strategy games for social strategy analysis
- Michon Edmonson (Undergraduate Student, Computer Science)
Spring 2011 – present
Research Topic: Computing personality and trust
- Wendy Mock (Undergraduate Student, Computer Science)
Spring 2011 – present
Research Topic: Social tagging of images
- Eric Norris (Undergraduate Student, Computer Science)
Summer 2010 – present
Research Topic: processing social network data

- Nima Rad (Undergraduate Student, Computer Science)
Summer 2010 – Winter 2011
Research Topic: Games for understanding social strategies
- Karen Turner (Undergraduate Student, Psychology)
Spring 2010 – Fall 2010
Research topic: Use of Facebook
- Anthony Rogers (Undergraduate Student, Individual Studies)
Spring 2008 – present
Research topic: Social networks on the web
- Stuart Moore (Undergraduate Student)
Spring 2008, In the context of INFM 220
Research topic: Expert search
- Joanne Kim (Undergraduate Student)
Spring 2008, In the context of INFM 220
Research topic: Expert search
- Mariya Filippova (Undergraduate Student, Computer Science)
Fall 2007 – Spring 2008
Research topic: Social Applications in Facebook
- Greg Phillips (Undergraduate Student, Computer Science)
Spring 2008, In the context of INFM 220
Research topic: Sentiment analysis in online communities
- Matthew Rothstein (Undergraduate Student, Computer Science)
Spring 2007 – Summer 2008
Research topic: Merging social networks on the Semantic Web with FOAF
- Michael Wasser (Undergraduate Student, Computer Science)
Fall 2005 – Spring 2007
Research topic: Adding social context to web pages

3.F.ii Master's

Masters Thesis Committees

- Member, Thesis Committee
Kelly Hoffman (MLS student, the iSchool): Fall 2007 – Spring 2008
- Member, Thesis Committee
Chris Zamerelli (MLS student, the iSchool): Fall 2007 – Spring 2008
- Member, Thesis Committee
D. Adam Anderson (MLS student, the iSchool): Fall 2007 – Spring 2008

Other

- Zahra Ashktorab (HCIM Student, the iSchool)
Fall 2011 – present
Research topic; Social Recommender Systems
- Beth Emmerling (PhD student, the iSchool)
Spring 2010 – Fall 2011
Research topic: Image tagging
- Cristina Robles (MLS student, the iSchool)
Spring 2010 – Spring 2011
Research topic: Use of Facebook
- Alon Motro (MIM student, the iSchool)
Spring 2009 – Spring 2012
Research topic: Computing trust in social networks
- Jeanne Kramer-Smyth (MLS student, the iSchool)
Fall 2008 – Spring 2009
In the context of NEH Digital Humanities Startup Grant
Research Topic: Development of ArchivesZ visualization tool for archival collections
- Rishabh Vyas (MIM student, the iSchool)
Fall 2008 – Spring 2009
In the context of a Graduate Research Assistantship (GRA)
Research Topic: expert search through document indexing
- Manasee Mahajan (MIM student, the iSchool)
Fall 2007 – Fall 2008
Research Topic: expert search through document indexing

3.F.iii Doctoral

As Advisor/Co-Advisor

- Advisor, Zahra Ashktorab (Ph.D. Student, iSchool)
- Advisor, Cody Buntain (Ph.D. Student, Computer Science)
- Advisor, Irene Eleta (Ph.D. Student, iSchool)
- Advisor, Jes Koepfler (Ph.D. Student, iSchool)
- Advisor, John Kleint (Ph.D. Student, Computer Science)
- Co-Advisor with Don Perlis, Hamid Shahri (Ph.D Student, Computer Science)
Graduated Spring 2011
First permanent position: Technology Researcher at the Mayo Clinic
- Co-Advisor with Jim Hendler, Vladimir Kolovski (Ph.D. Student, Computer Science)
Graduated May 2008.
First permanent position: Research Scientist, Oracle (Nashua, NH)
- Co-Advisor with Jim Hendler, Christian Halaschek-Weiner (Ph.D. Student, Computer Science)
Graduated December 2007.
First permanent position: Chief Technology Officer of Clados Management LLC.

Other Dissertation Committees

- Member, dissertation committee
Ed Condon (Ph.D. Student, Computer Engineering), Fall 2012–present
- Member, dissertation committee
Jared Sylvester (Ph.D. Student, Computer Science, Fall 2014
- Member, dissertation committee
Megan Monroe (Ph.D. Student, Computer Science), Fall 2013–Spring 2014
- Member, dissertation committee
Kan Leung Cheng (Ph.D. Student, Computer Science), Fall 2010–Summer 2013
- Member, dissertation committee
Greg Walsh (Ph.D. Student, the iSchool), Fall 2010–Summer 2012
- Member, dissertation committee
Bo Han (Ph.D. Student, Computer Science), Summer 2012
- Member, dissertation committee
Tom Dubois (Ph.D. Student, Computer Science), Fall 2010 – Spring 2011
- Member, dissertation committee
Elena Zheleva (Ph.D. Student, Computer Science), Fall 2008 – Spring 2011
- Member, dissertation committee
Hamid Shahri (Ph.D. Student, Computer Science): Fall 2009 – Spring 2011
- Member, dissertation committee
Chuk-Yang Seng (Ph.D. Student, Computer Science): Fall 2008 – Summer 2009
- Member, dissertation committee
Adam Perer (Ph.D. Student, Computer Science): Fall 2007 – Spring 2008

Other⁶

- Dana Rotman (Ph.D. Student, the iSchool): Fall 2009 – present
Research Topic: Community structure in YouTube
- Tom DuBois (Ph.D. student, Computer Science): Spring 2009 – Spring 2011
Research Topic: Computing trust in social networks
- Justin Grimes (Ph.D. Student, the iSchool): Spring 2009
Research Topic: Twitter Usage in Congress
- Elena Zheleva (Ph.D. Student, Computer Science): Fall 2008 – Spring 2011
Research Topic: Link prediction in social networks
- Christina Pikas (Ph.D. Student, the iSchool): Spring 2008
Research Topic: Social networks in science blogs
- Philip Fei Wu (Ph.D. Student, the iSchool), Fall 2007 – Spring 2008
Research Topic: Community Response Grids

⁶ Students with whom I have had significant research interaction on specific projects, in a capacity other than their advisor/co-advisor.

4 Service

4.A Professional

4.A.i Offices and committee memberships held in professional organizations⁷

- World Wide Web Consortium Semantic Web Best Practices Working Group, March 2004 – October 2004

4.A.ii Reviewing activities for agencies

- Review panelist, NASA Postdoctoral Fellows program Summer 2011
- Review panelist, National Science Foundation (NSF), Directorate for Computer and Information Science and Engineering (CISE), Spring 2011
- Review panelist, National Science Foundation (NSF), Directorate for Computer and Information Science and Engineering (CISE), Spring 2010
- Review panelist, National Science Foundation (NSF), Directorate for Computer and Information Science and Engineering (CISE), Fall 2009
- Review panelist, National Science Foundation (NSF), Directorate for Computer and Information Science and Engineering (CISE), Fall 2008
- Outside Reviewer, National Science Foundation (NSF), Directorate for Computer and Information Science and Engineering (CISE), Fall 2007

4.A.iii Other unpaid services to local, state, and federal agencies

- Production of video campaign and social media contest for Department of Defense anti-obesity initiative, in conjunction with Deputy Assistant Secretary of Defense for Health Affairs Summer 2012 – present

4.B Campus

4.B.i College⁸

- Program Director, HCI Masters Program, Summer 2012 – present
- Director, Human-Computer Interaction Lab (Spring 2011 – present)
- Member, HCI Masters Committee (Fall 2009 – Spring 2012)
- Member, iSchool Search Committee (Fall 2011– Spring 2012)
- Chair, iSchool Student Awards Committee (Fall 2011 – Spring 2012)
- Co-Director, HCIL (Spring 2009 – Spring 2011)
- Chair, iSchool Undergraduate Committee (Fall 2010 – Spring 2011)
- Member, iSchool Search Committee (Fall 2010 – Spring 2011)
- Member, iSchool Search Committee (Fall 2009 – Spring 2011)
- Member, iSchool ad hoc Research Committee (Fall 2009 – Spring 2011)
- Member, iSchool Undergraduate Committee (Fall 2008 – Spring 2009)
- Assistant Director, Center for Information Policy and E-Government (Fall 2007 – Spring 2010)
- Member, iSchool Doctoral Committee (Fall 2007 – Spring 2010)

⁷ Position on journal board, chairship/membership on conference program committees, and related reviewing activities already reported in Section 2.K are not repeated here.

⁸ Membership on dissertation/examination committees are listed in Section 3.F.iii and not duplicated here.

- Secretary, College Assembly (Fall 2008 – Spring 2009)

4.C University

- Member, University of Maryland Provost Search Committee (Fall 2011 – Spring 2012)

EXHIBIT B

Exhibit B: 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.*:

Supplemental Responses and Objections to Plaintiffs' First Set of Interrogatories
Facebook's Second Supplemental Responses and Objections to Plaintiffs' Narrowed
Second Set of Interrogatories
Deposition of Ray He (September 25, 2015)
Deposition of Michael Adkins (October 28, 2015)
Plaintiffs' Consolidated Amended Complaint
Exhibit F to the Declaration of Alex Himel on Behalf of Defendant Facebook, Inc.

FB000011543
FB000002651
FB000003118
FB000002651
FB000002843
FB000007286
FB000006178
FB000010688
FB000008505
FB000010688
FB000008722
FB000000298
FB000008643
FB000008499
FB000002141
FB000002190
FB000002196
FB000006429
FB000000699
FB000002197
FB000001599
FB000001608-9
FB000000425
FB000005827
FB000005802-R
FB000008499
Source Code Produced by Facebook

Other Materials

<https://web.archive.org/web/20101016010319/http://developer.yahoo.com/blogs/ydn/posts/2010/10/how-many-users-have-javascript-disabled/>

<https://gds.blog.gov.uk/2013/10/21/how-many-people-are-missing-out-on-javascript-enhancement/>

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

<https://web.archive.org/web/20101205130048/http://developers.facebook.com/docs/reference/plugins/activity>

<http://developers.facebook.com/docs/reference/plugins/activity>

<http://blogs.wsj.com/digits/2012/10/03/how-private-are-your-private-messages/>

<https://developers.facebook.com/blog/post/476>

<https://www.facebook.com/1556441609>

<https://www.facebook.com/michael.s.hurley.73>

Campbell v. Facebook Inc., 77 F. Supp. 3d 836, 844 (N.D. Cal. 2014).

In re Google Inc. Gmail Litig., 2013 U.S. Dist. LEXIS 172784 (N.D. Cal. Sept. 26, 2013)

In re Carrier IQ, Inc., Consumer Privacy Litig., 78 F. Supp. 3d 1051, 1076 (N.D. Cal. 2015)

EXHIBIT 3

FILED UNDER SEAL

EXHIBIT 4

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EXHIBIT 5

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EXHIBIT 6

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EXHIBIT 19

facebook[®]

Quarterly Earnings Slides

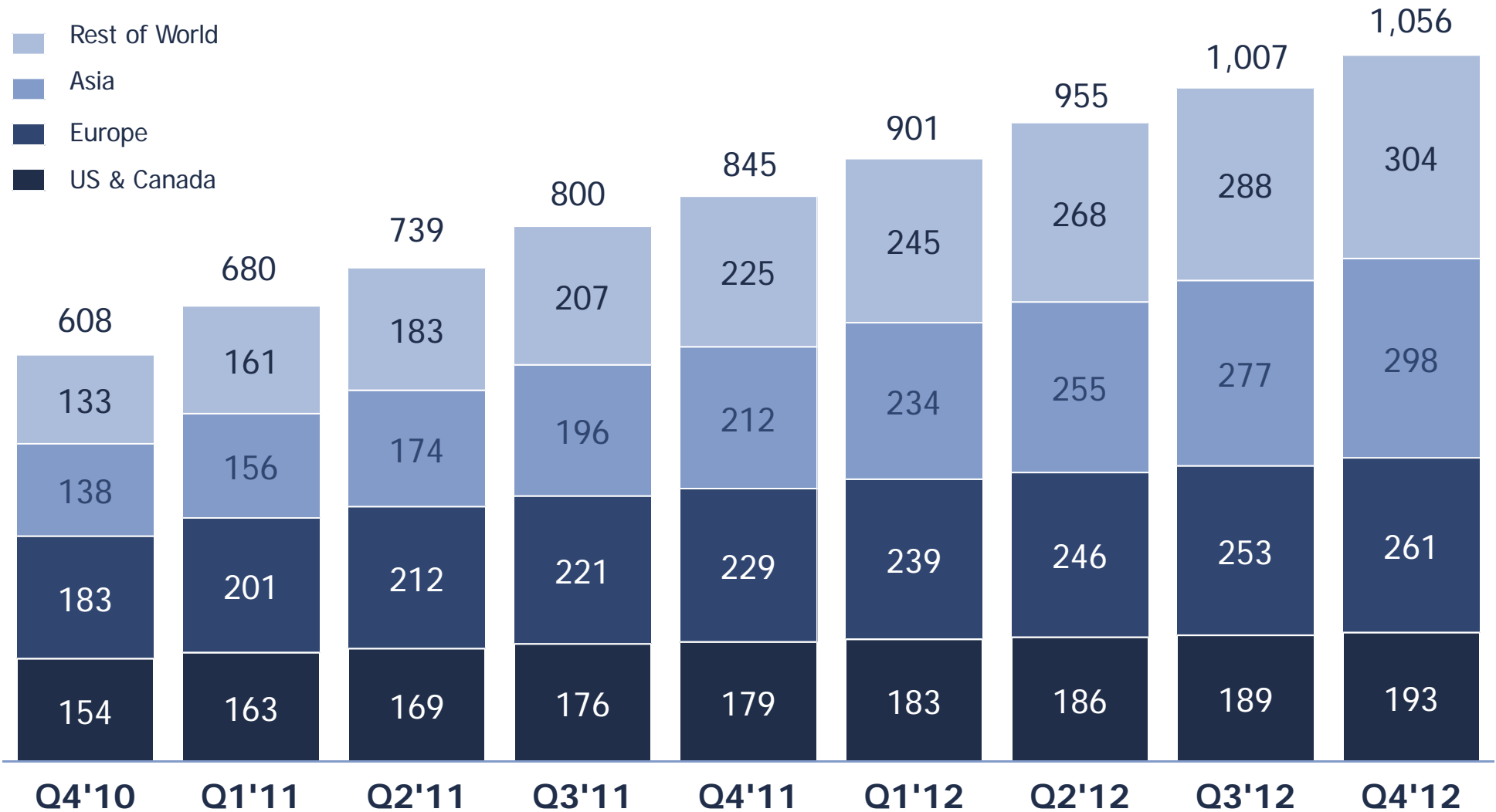
Q4 2012

Safe Harbor

In addition to U.S. GAAP financials, this presentation includes certain non-GAAP financial measures. These non-GAAP measures are in addition to, not a substitute for or superior to, measures of financial performance prepared in accordance with U.S. GAAP. A reconciliation of non-GAAP financial measures to the corresponding GAAP measures is provided in the appendix to this presentation. Please also see the appendix to this presentation for information concerning limitations of our key user metrics.

Monthly Active Users (MAUs)

Millions of MAUs



Please see Facebook's Form 10-K for the year ended December 31, 2012 for definitions of user activity used to determine the number of our MAUs, DAUs and mobile MAUs. The number of MAUs, DAUs, and mobile MAUs do not include Instagram users unless such users would otherwise qualify as MAUs, DAUs, and mobile MAUs based on activity that is shared back to Facebook.

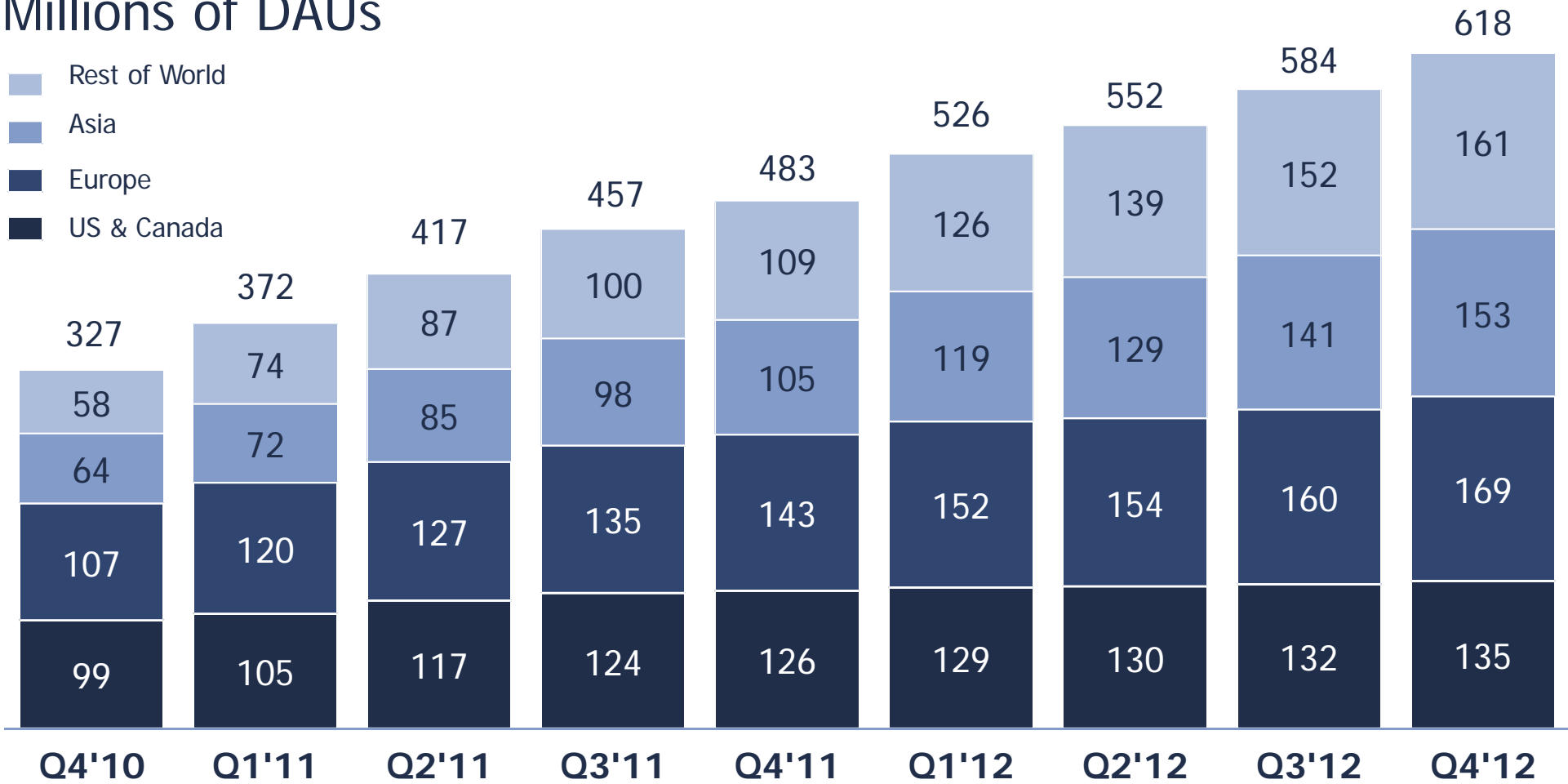
In June 2012, we discovered an error in the algorithm we used to estimate the geographic location of our users that affected our attribution of certain user locations for the first quarter of 2012. The first quarter of 2012 user metrics reflect a reclassification to more correctly attribute users by geographic region.

facebook

Daily Active Users (DAUs)

Millions of DAUs

- Rest of World
- Asia
- Europe
- US & Canada



DAUs / MAUs

Q4'10	Q1'11	Q2'11	Q3'11	Q4'11	Q1'12	Q2'12	Q3'12	Q4'12
54%	55%	56%	57%	57%	58%	58%	58%	59%

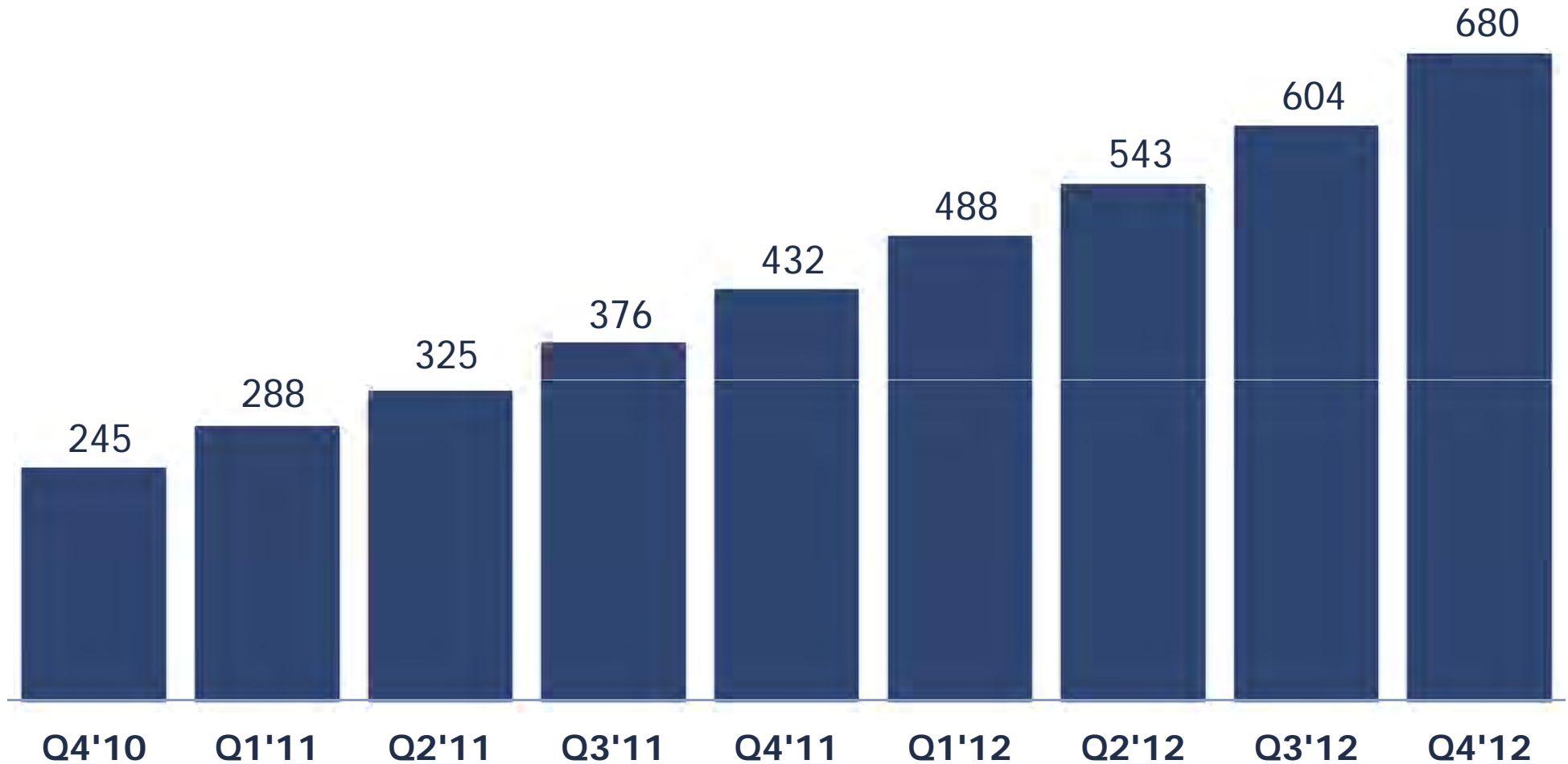
Please see Facebook's Form 10-K for the year ended December 31, 2012 for definitions of user activity used to determine the number of our MAUs, DAUs and mobile MAUs. The number of MAUs, DAUs, and mobile MAUs do not include Instagram users unless such users would otherwise qualify as MAUs, DAUs, and mobile MAUs based on activity that is shared back to Facebook.

For non-worldwide DAU user numbers presented for the periods marked March 31, 2012 and June 30, 2012, the figures represent an average of the first 25 days of the period and the last 27 days of the period, respectively, due to the algorithm error described in the MAU note on slide 3. These average numbers do not meaningfully differ from the average numbers when calculated over a full month.

facebook

Mobile Monthly Active Users (Mobile MAUs)

Millions of Mobile MAUs



Please see Facebook's Form 10-K for the year ended December 31, 2012 for definitions of user activity used to determine the number of our MAUs, DAUs and mobile MAUs. The number of MAUs, DAUs, and mobile MAUs do not include Instagram users unless such users would otherwise qualify as MAUs, DAUs, and mobile MAUs based on activity that is shared back to Facebook.

facebook

Mobile Only Monthly Active Users (Mobile Only MAUs)

Millions of Mobile Only MAUs



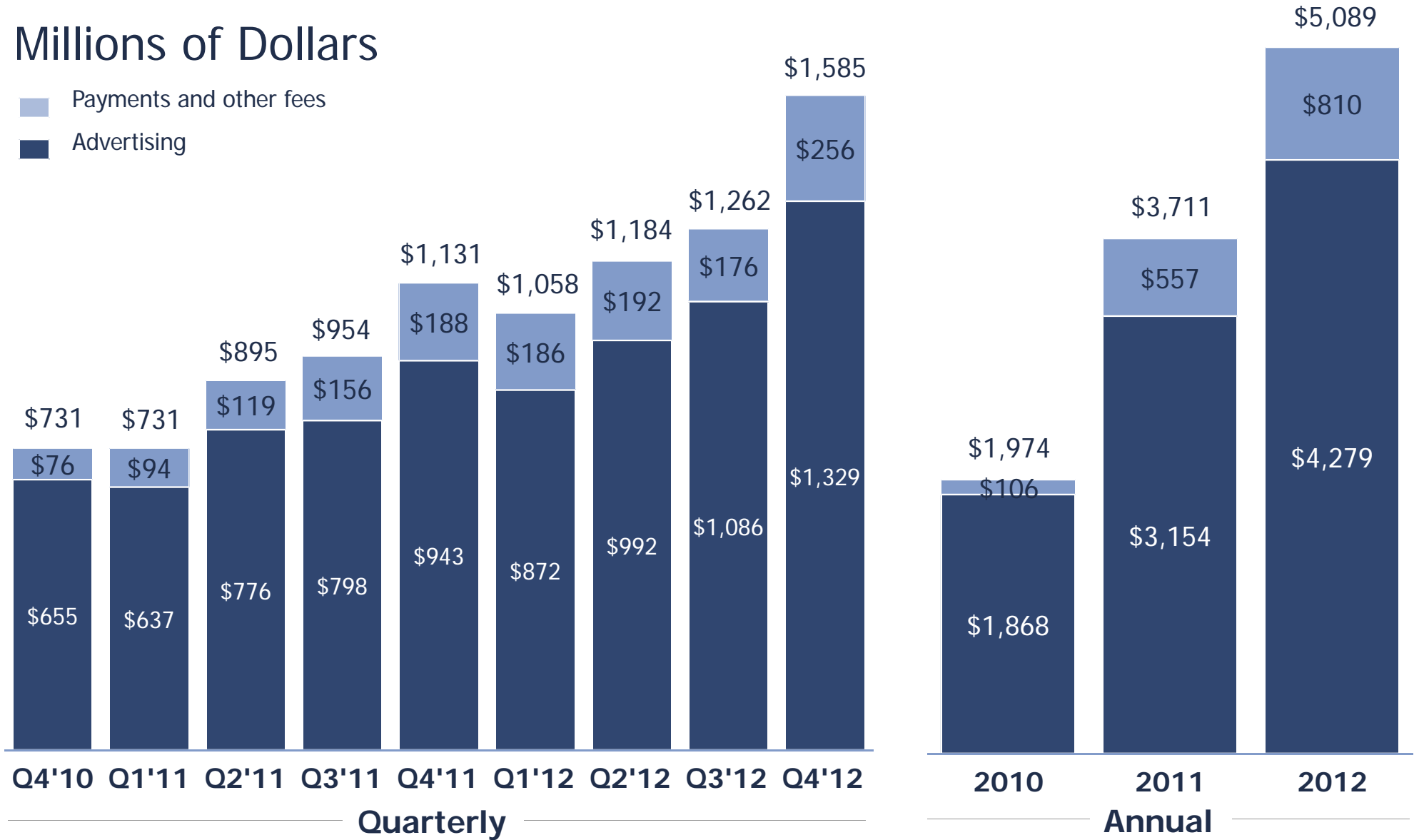
Mobile Only MAUs are mobile MAUs that accessed Facebook solely through mobile apps or our mobile website.

facebook

Revenue

Millions of Dollars

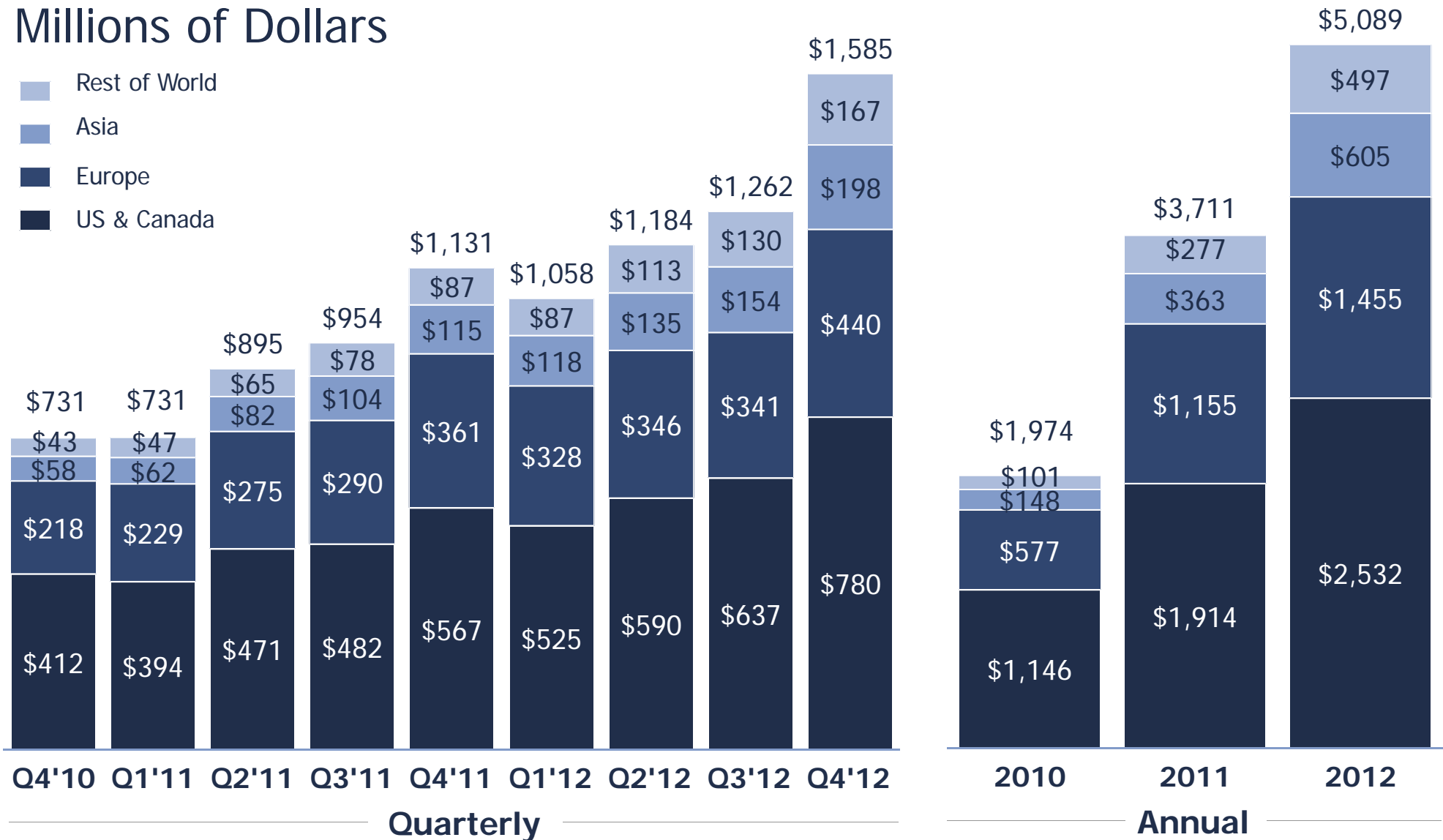
- Payments and other fees
- Advertising



Revenue by User Geography

Millions of Dollars

- Rest of World
- Asia
- Europe
- US & Canada



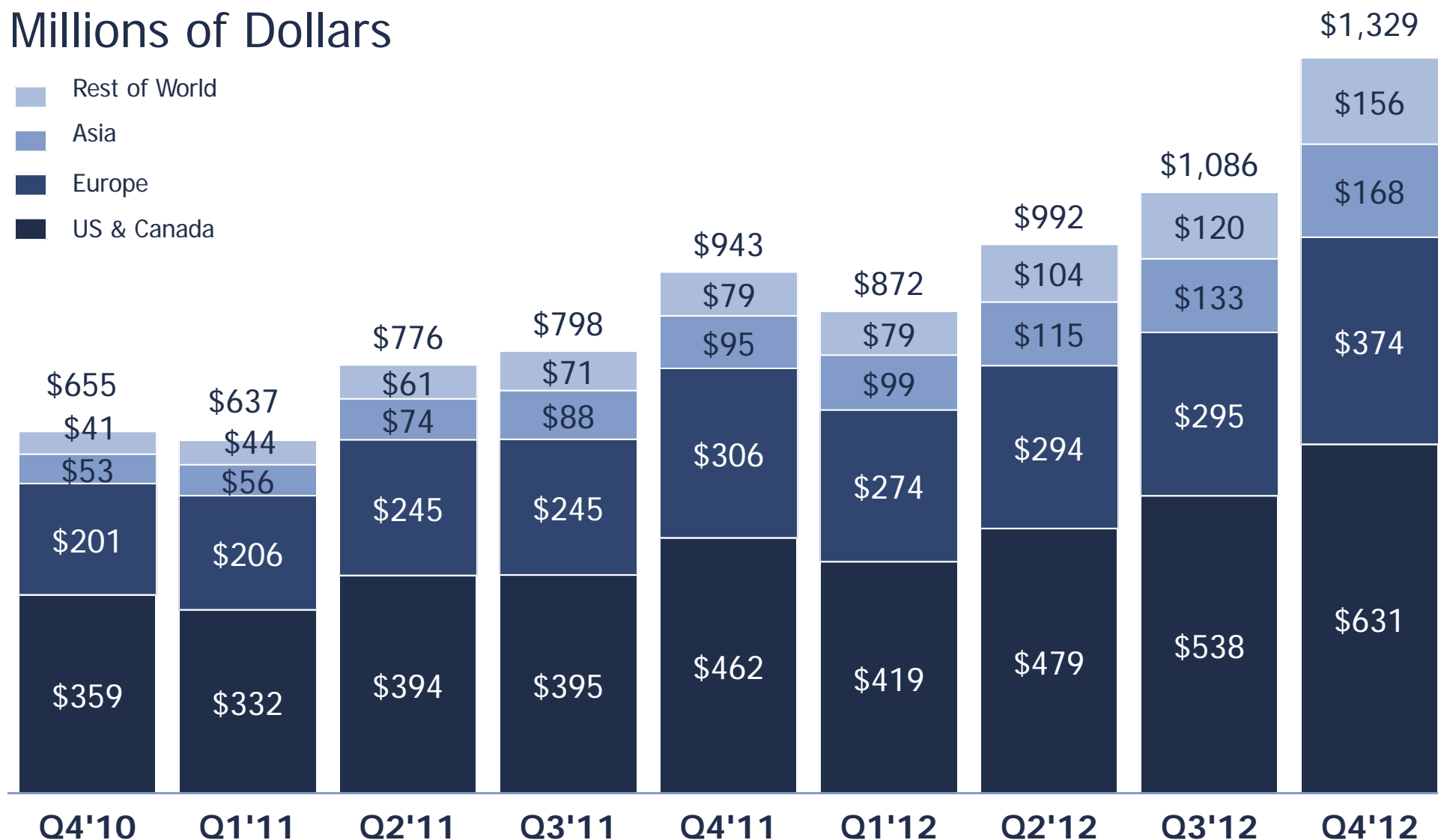
Revenue by user geography is geographically apportioned based on our estimation of the geographic location of our users when they perform a revenue-generating activity. This allocation differs from our revenue by geography disclosure in our consolidated financial statements where revenue is geographically apportioned based on the location of the advertiser or developer.



Advertising Revenue by User Geography

Millions of Dollars

- Rest of World
- Asia
- Europe
- US & Canada



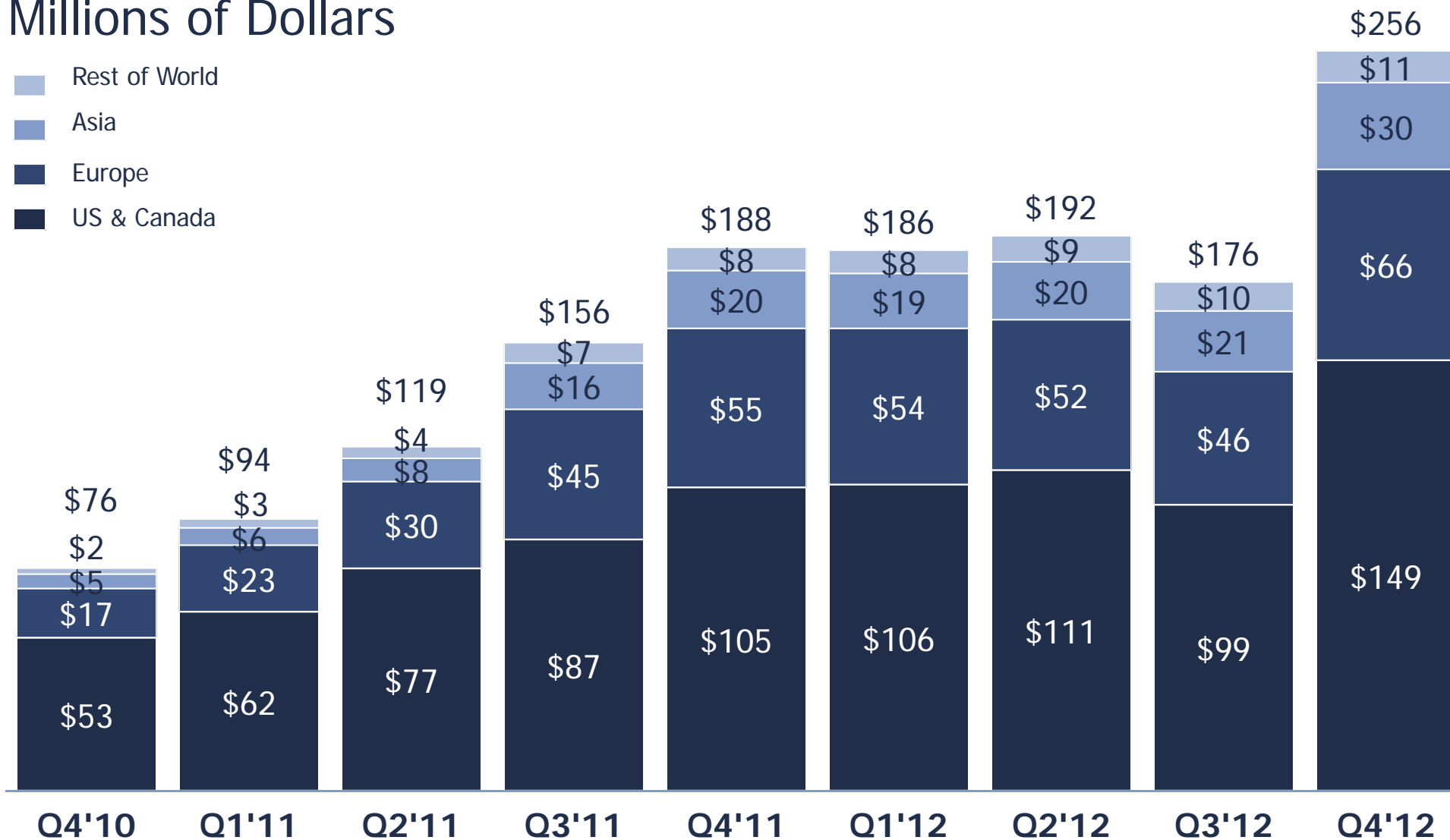
Revenue by user geography is geographically apportioned based on our estimation of the geographic location of our users when they perform a revenue-generating activity. This allocation differs from our revenue by geography disclosure in our consolidated financial statements where revenue is geographically apportioned based on the location of the advertiser or developer.

facebook

Payments & Other Revenue by User Geography

Millions of Dollars

- Rest of World
- Asia
- Europe
- US & Canada



Revenue by user geography is geographically apportioned based on our estimation of the geographic location of our users when they perform a revenue-generating activity. This allocation differs from our revenue by geography disclosure in our consolidated financial statements where revenue is geographically apportioned based on the location of the advertiser or developer.

facebook

Payments Revenue Recognition Timing

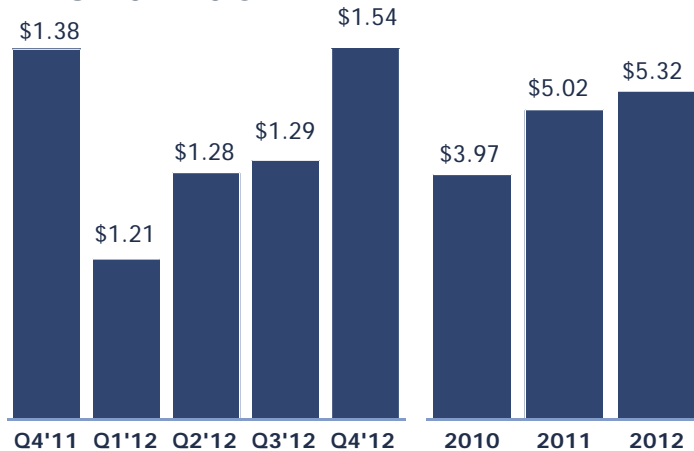
- Payments terms and conditions provide for a 30-day claim period following a Payments transaction during which the customer may dispute the transaction.
- In Q3 2012 and prior, due to insufficient transaction history, Payments revenues were recognized after the claim period lapsed.
 - For example, transactions occurring in June were recognized as revenue 30 days later, in July, and included in Q3 2012 revenue. Therefore, Q3 2012 revenue reflects transactions that occurred during the months of June, July and August.
- As of Q4 2012, we had 24 months of historical transactional information. As a result, starting in Q4 2012 we recorded all Payments revenues in the month the transaction occurs, net of estimated refunds or chargebacks.

This change resulted in a one-time increase in Payments revenue in the fourth quarter as we recognized revenue from an extra month of payments transactions (those occurring in September through December.)

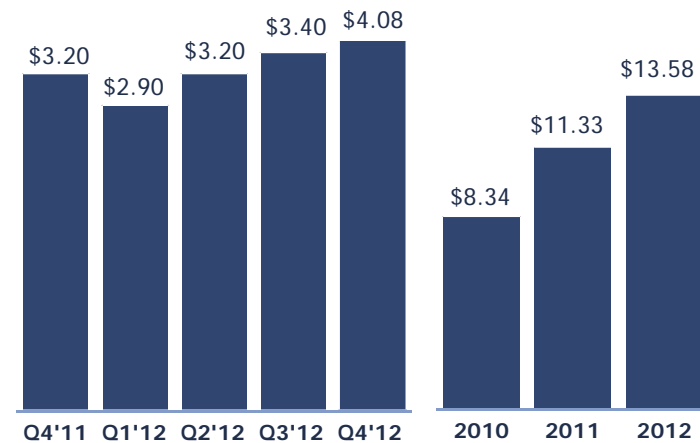


Average Revenue per User (ARPU)

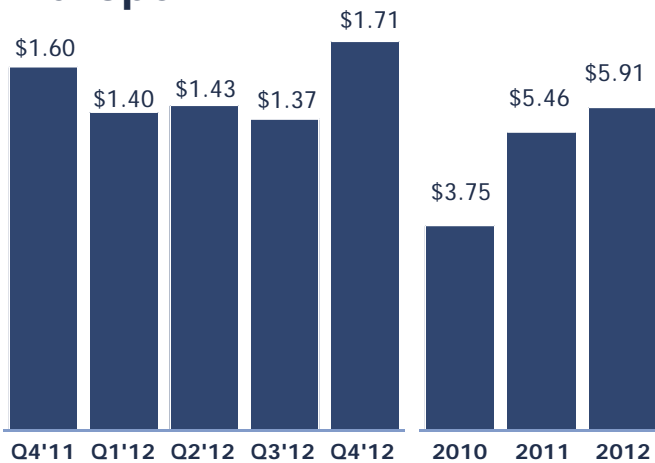
Worldwide



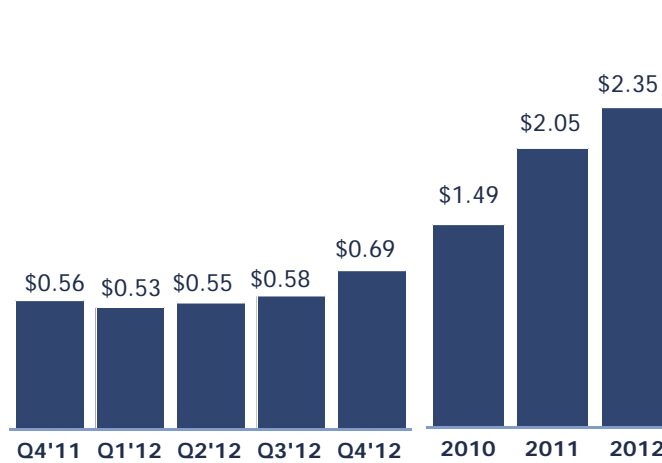
US & Canada



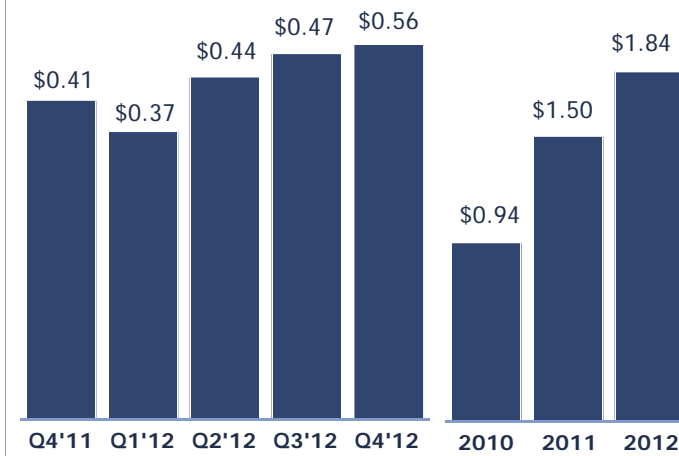
Europe



Asia



Rest of World



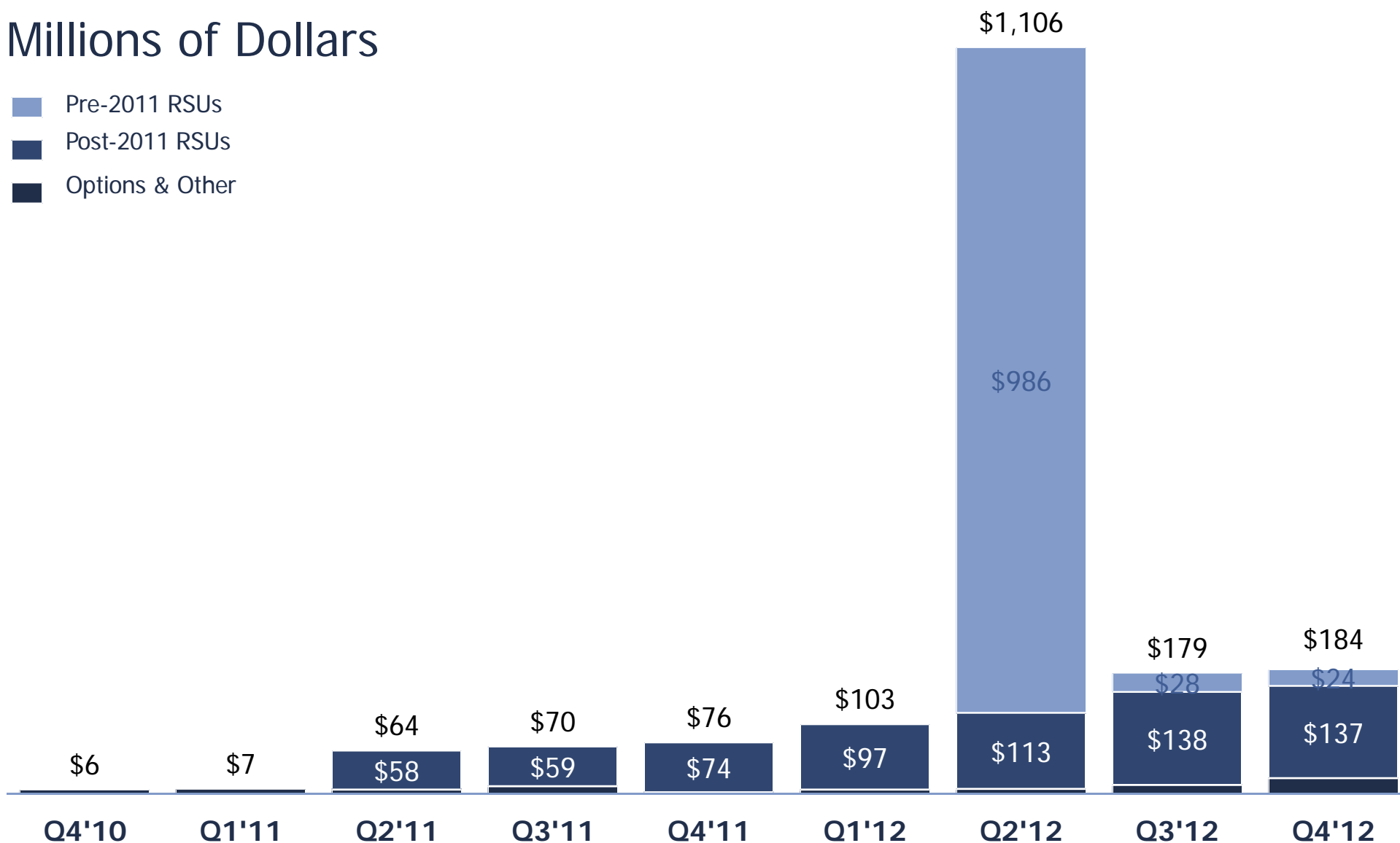
Revenue by user geography is geographically apportioned based on our estimation of the geographic location of our users when they perform a revenue-generating activity. This allocation differs from our revenue by geography disclosure in our consolidated financial statements where revenue is geographically apportioned based on the location of the advertiser or developer. The ARPU amount for US & Canada region in Q1 2012 reflects an adjustment based on the reclassification of certain users between geographical regions to more correctly attribute users by geographic region. Please see Facebook's Form 10-K for the year ended December 31, 2012 for definitions of ARPU and annual ARPU.

facebook

Share-Based Compensation Expense

Millions of Dollars

- Pre-2011 RSUs
- Post-2011 RSUs
- Options & Other



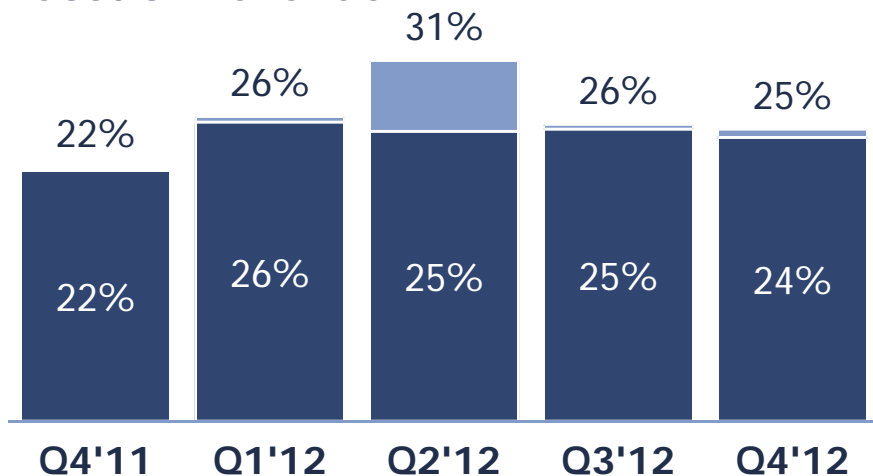
Q4 2012 expenses are estimates and exclude any potential impact of future acquisitions.

Expenses as a % of Revenue

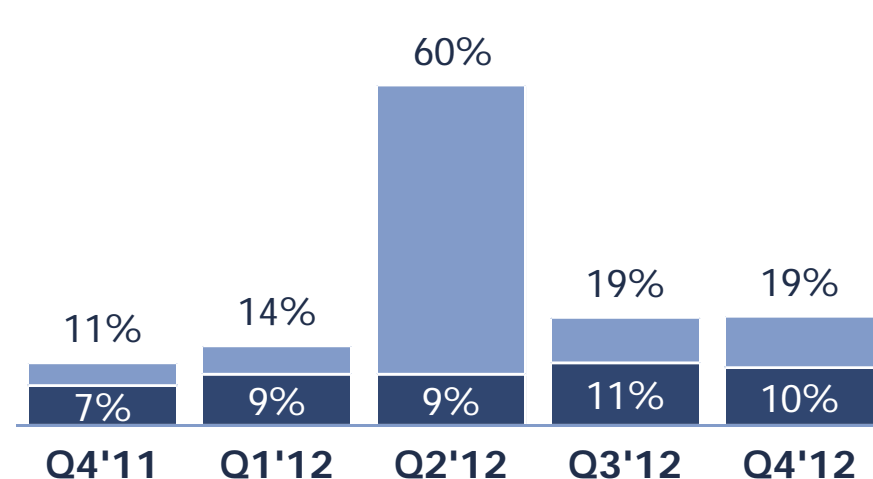
■ Share-based compensation + Payroll tax related to share-based compensation

■ All other expenses

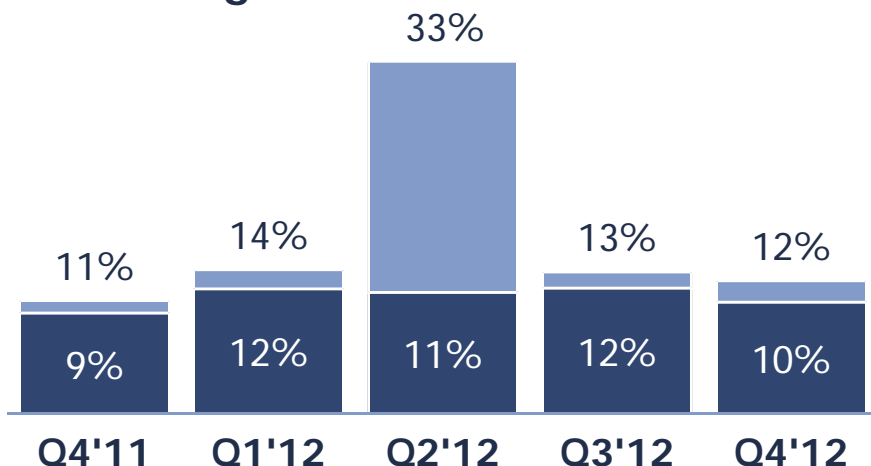
Cost of Revenue



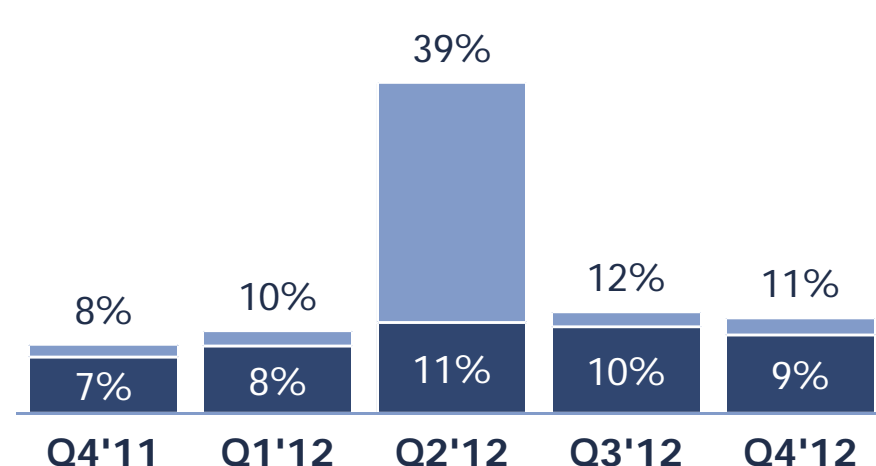
Research & Development



Marketing & Sales



General & Administrative

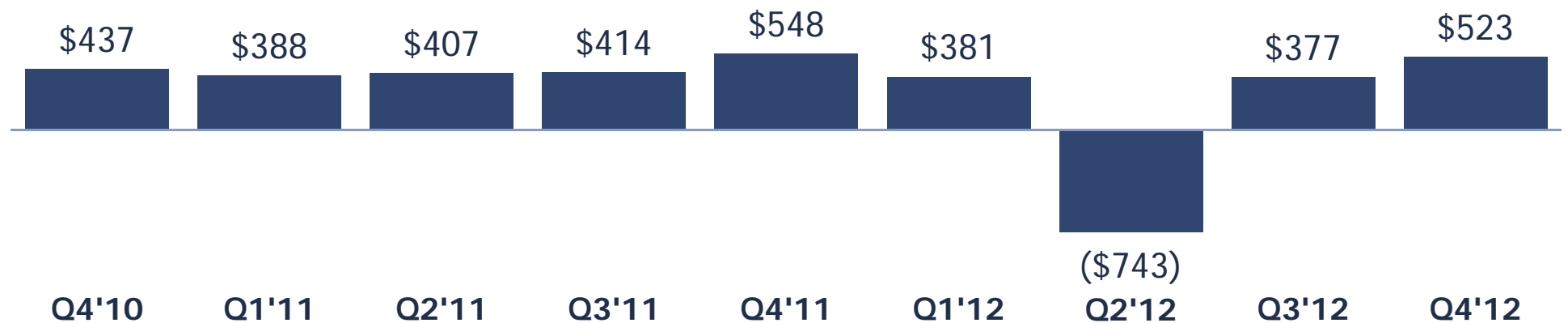


We have reclassified certain prior period amounts in marketing and sales to general and administrative expense to conform to our current period presentation. These reclassifications did not affect revenue, total costs and expenses, income (loss) from operations, or net (loss) income.

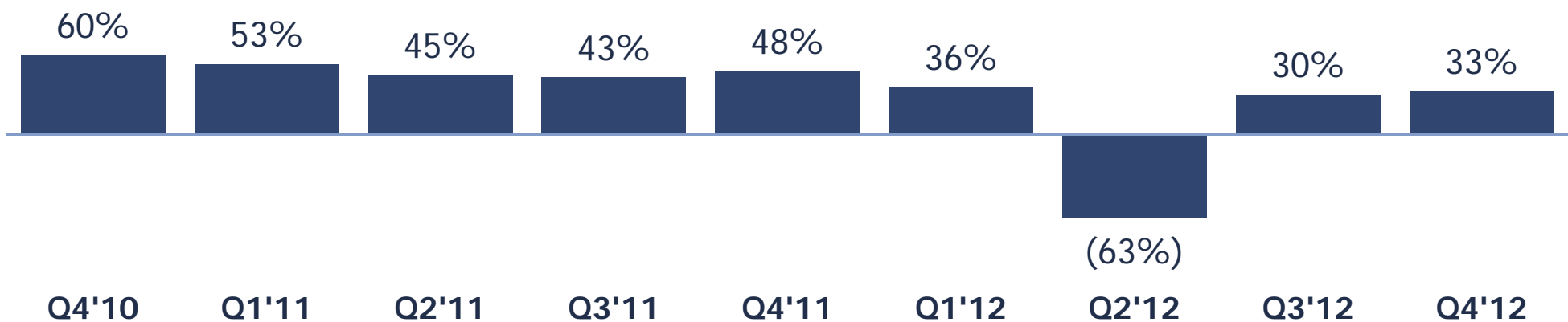
facebook

GAAP Income (Loss) from Operations & Margin

Income (Loss) from Operations (\$M)



Operating Margin



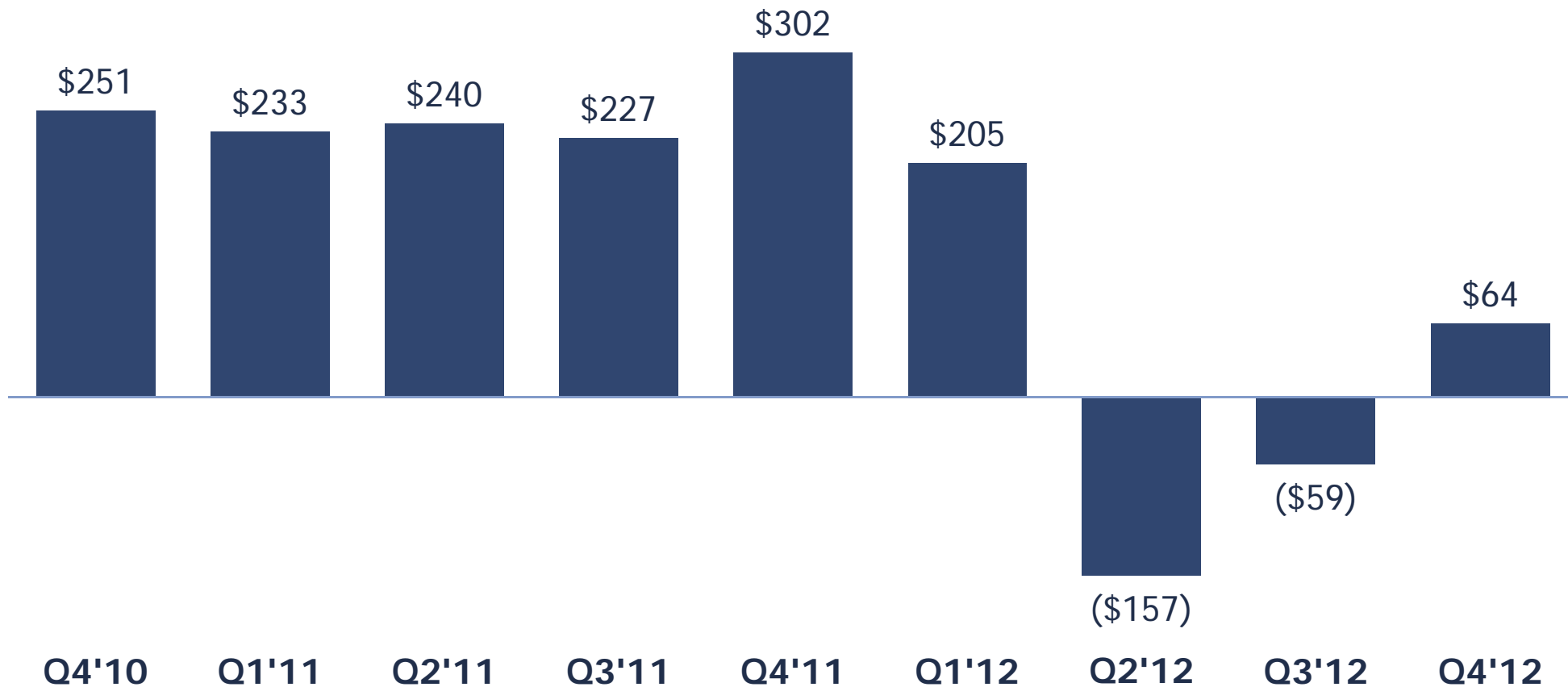
Effective Tax Rate

(in millions)	Q1 2012	Q2 2012	Q3 2012	Q4 2012	2011	2012
Revenue	\$ 1,058	\$ 1,184	\$ 1,262	\$ 1,585	\$ 3,711	\$ 5,089
Costs and expenses:						
Cost of revenue	277	367	322	398	860	1,364
Research and development	153	705	244	297	388	1,399
Marketing and sales	143	392	168	193	393	896
General and administrative	104	463	151	174	314	892
Total costs and expenses	677	1,927	885	1,062	1,955	4,551
Income from operations	381	(743)	377	523	1,756	538
Interest and other income (expense), net	(13)	(10)	(11)	(16)	(42)	(51)
Interest expense						
Other income (expense), net	14	(12)	6	(2)	(19)	7
Income (loss) before provision for income taxes	382	(765)	372	505	1,695	494
Provision for (benefit from) income taxes	177	(608)	431	441	695	441
Net income (loss)	\$ 205	\$ (157)	\$ (59)	\$ 64	\$ 1,000	\$ 53
Effective Tax Rate	46%	79%	116%	87%	41%	89%

Q2 through Q4 effective tax rates were influenced by significant share-based compensation expense resulting from our initial public offering, a portion of which is not tax-deductible

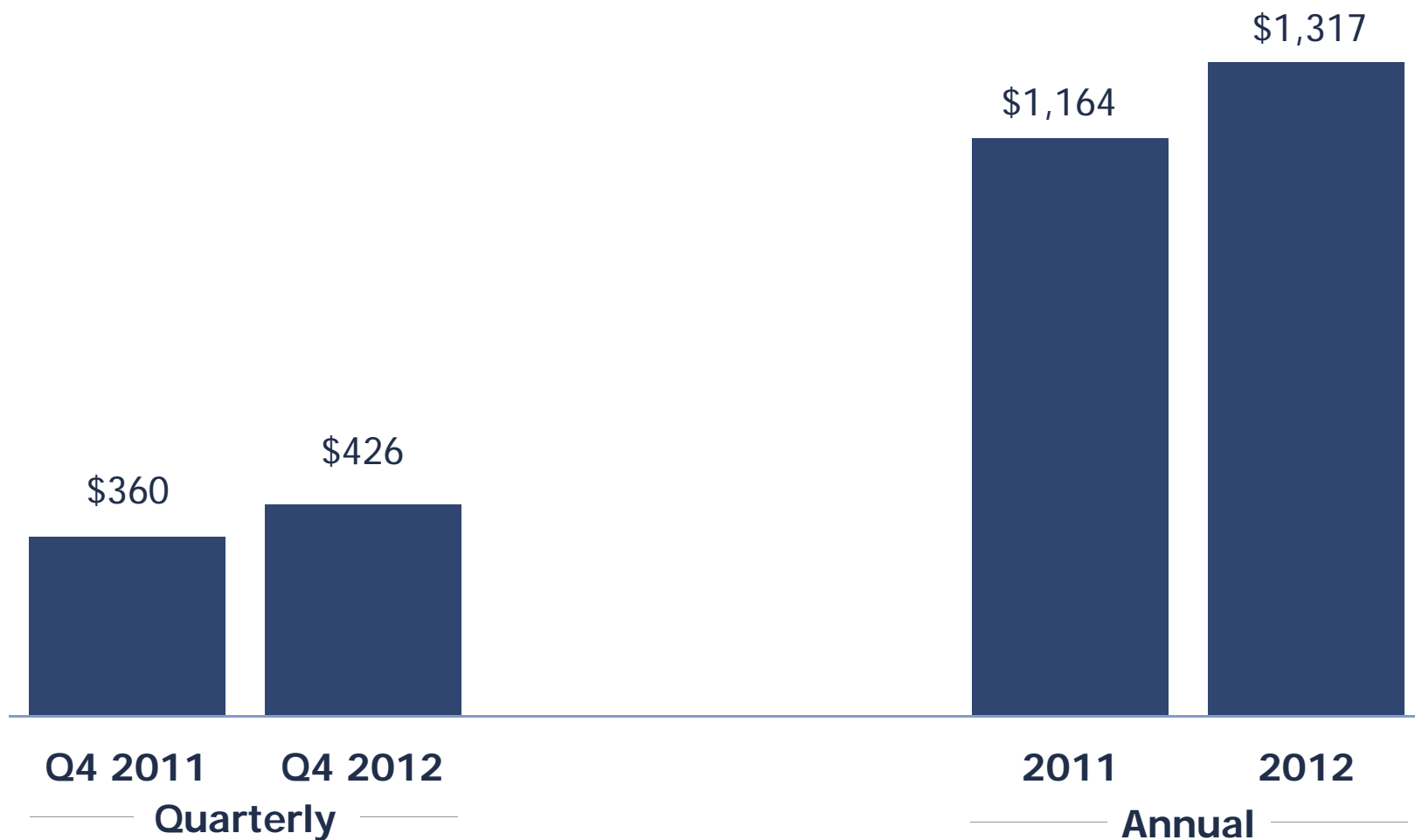
GAAP Net Income (Loss)

Millions of Dollars



Non-GAAP Net Income

Millions of Dollars



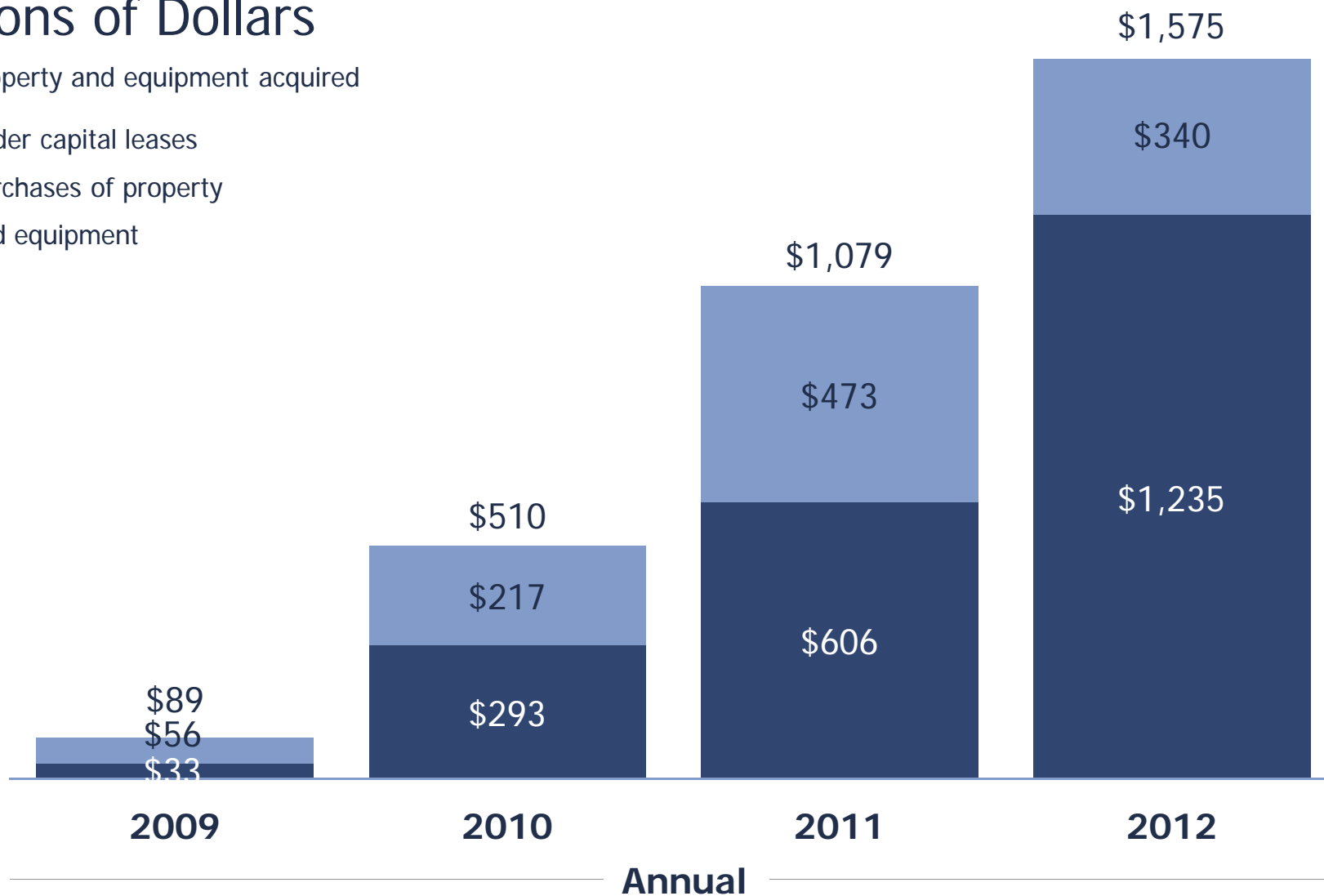
Non-GAAP net income excludes share-based compensation expense, payroll tax expenses related to share-based compensation, and related income tax adjustments—see the Appendix for a reconciliation of this non-GAAP measure to GAAP net income.

facebook

Capital Investments

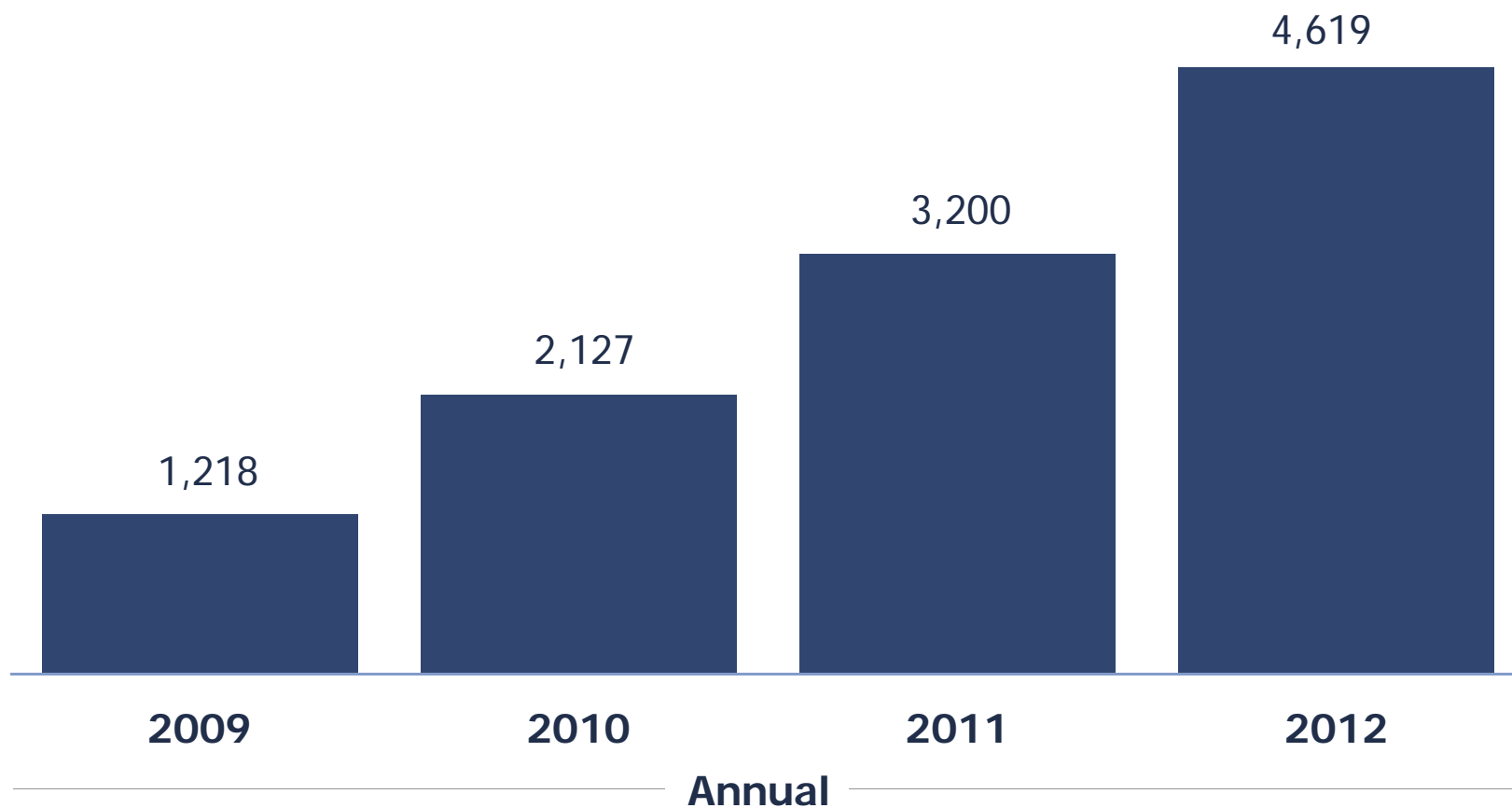
Millions of Dollars

- Property and equipment acquired under capital leases
- Purchases of property and equipment



Employees

Period-end Headcount



facebook[®]
Appendix

Reconciliations

	Three Months Ended December 31,		Year Ended December 31,	
	2011	2012	2011	2012
GAAP net income	\$ 302	\$ 64	\$ 1,000	\$ 53
Share-based compensation expense	76	184	217	1,572
Payroll tax expenses related to share-based compensation	-	29	7	151
Income tax adjustments	(18)	149	(60)	(459)
Non-GAAP net income	\$ 360	\$ 426	\$ 1,164	\$ 1,317

Limitations of Key Metrics

The numbers of our monthly active users (MAUs) and daily active users (DAUs) and average revenue per user (ARPU) are calculated using internal company data based on the activity of user accounts. While these numbers are based on what we believe to be reasonable estimates of our user base for the applicable period of measurement, there are inherent challenges in measuring usage of our products across large online and mobile populations around the world. For example, there may be individuals who maintain one or more Facebook accounts in violation of our terms of service, despite our efforts to detect and suppress such behavior. We estimate, for example, that “duplicate” accounts (an account that a user maintains in addition to his or her principal account) may have represented approximately 5.0% of our worldwide MAUs as of December 31, 2012. We also seek to identify “false” accounts, which we divide into two categories: (1) user-misclassified accounts, where users have created personal profiles for a business, organization, or non-human entity such as a pet (such entities are permitted on Facebook using a Page rather than a personal profile under our terms of service); and (2) undesirable accounts, which represent user profiles that we determine are intended to be used for purposes that violate our terms of service, such as spamming. As of December 31, 2012, for example, we estimate user-misclassified accounts may have represented approximately 1.3% of our worldwide MAUs and undesirable accounts may have represented approximately 0.9% of our worldwide MAUs. We believe the percentage of accounts that are duplicate or false is meaningfully lower in developed markets such as the United States or Australia and higher in developing markets such as Indonesia and Turkey. However, these estimates are based on an internal review of a limited sample of accounts and we apply significant judgment in making this determination, such as identifying names that appear to be fake or other behavior that appears inauthentic to the reviewers. As such, our estimation of duplicate or false accounts may not accurately represent the actual number of such accounts. We are continually seeking to improve our ability to identify duplicate or false accounts and estimate the total number of such accounts, and such estimates may be affected by improvements or changes in our methodology.

Limitations of Key Metrics (continued)

Some of our historical metrics through the second quarter of 2012 have also been affected by applications on certain mobile devices that automatically contact our servers for regular updates with no user action involved, and this activity can cause our system to count the user associated with such a device as an active user on the day such contact occurs. For example, we estimate that less than 5% of our estimated worldwide DAUs as of December 31, 2011 and 2010 resulted from this type of automatic mobile activity, and that this type of activity had a substantially smaller effect on our estimate of worldwide MAUs and mobile MAUs. The impact of this automatic activity on our metrics varies by geography because mobile usage varies in different regions of the world. In addition, our data regarding the geographic location of our users is estimated based on a number of factors, such as the user's IP address and self-disclosed location. These factors may not always accurately reflect the user's actual location. For example, a mobile-only user may appear to be accessing Facebook from the location of the proxy server that the user connects to rather than from the user's actual location. The methodologies used to measure user metrics may also be susceptible to algorithm or other technical errors. For example, in early June 2012, we discovered an error in the algorithm we used to estimate the geographic location of our users that affected our attribution of certain user locations for the period ended March 31, 2012. While this issue did not affect our overall worldwide MAU number, it did affect our attribution of users to different geographic regions. We estimate that the number of MAUs as of March 31, 2012 for the United States & Canada region was overstated as a result of the error by approximately 3% and these overstatements were offset by understatements in other regions. In addition, our estimates for revenue by user location are also affected by these factors. We regularly review and may adjust our processes for calculating these metrics to improve their accuracy. In addition, our MAU and DAU estimates will differ from estimates published by third parties due to differences in methodology. For example, some third parties are not able to accurately measure mobile users or do not count mobile users for certain user groups or at all in their analyses.

The number of MAUs, DAUs, mobile MAUs, and ARPU discussed in these slides do not include users of Instagram unless such users would otherwise qualify as MAUs, DAUs, and mobile MAUs, respectively, based on activity that is shared back to Facebook.

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EXHIBIT 20

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13 Attorneys for Defendant
 14 FACEBOOK, INC.

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

18 MATTHEW CAMPBELL, MICHAEL
 19 HURLEY, and DAVID SHADPOUR,

20 Plaintiffs,

21 v.

22 FACEBOOK, INC.,

23 Defendant.

Case No. C 13-05996 PJH (MEJ)

PUTATIVE CLASS ACTION

**DEFENDANT FACEBOOK, INC.'S
 SUPPLEMENTAL RESPONSES AND
 OBJECTIONS TO PLAINTIFFS'
 NARROWED SECOND SET OF
 INTERROGATORIES**

1 Defendant Facebook, Inc. (“Defendant” or “Facebook”), by and through its attorneys, and
2 pursuant to Rules 26 and 33 of the Federal Rules of Civil Procedure, the Local Civil Rules of the U.S.
3 District Court for the Northern District of California, the Court orders in this action, and the parties’
4 agreements, provides the following supplemental responses and objections to Plaintiffs’ Narrowed
5 Second Set of Interrogatories (the “Interrogatories”).

6 **PRELIMINARY STATEMENT**

7 1. Facebook’s responses to the Interrogatories are made to the best of Facebook’s current
8 knowledge, information, and belief. Facebook reserves the right to supplement or amend any of its
9 responses should future investigation indicate that such supplementation or amendment is necessary.

10 2. Facebook’s responses to the Interrogatories are made solely for the purpose of and in
11 relation to this action. Each response is given subject to all appropriate objections (including, but not
12 limited to, objections concerning privilege, competency, relevancy, materiality, propriety, and
13 admissibility). All objections are reserved and may be interposed at any time.

14 3. Facebook’s responses are premised on its understanding that Plaintiffs seek only that
15 information that is within Facebook’s possession, custody, and control.

16 4. Facebook incorporates by reference each and every general objection set forth below
17 into each and every specific response. From time to time, a specific response may repeat a general
18 objection for emphasis or some other reason. The failure to include any general objection in any
19 specific response shall not be interpreted as a waiver of any general objection to that response.

20 5. Nothing contained in these Responses and Objections or provided in response to the
21 Interrogatories consists of, or should be construed as, an admission relating to the accuracy,
22 relevance, existence, or nonexistence of any alleged facts or information referenced in any
23 Interrogatory.

24 **GENERAL OBJECTIONS**

25 1. Facebook objects to each Interrogatory, including the Definitions and Instructions, to
26 the extent that it purports to impose obligations beyond those imposed by the Federal Rules of Civil
27 Procedure, the Federal Rules of Evidence, the Local Civil Rules of the U.S. District Court for the
28 Northern District of California, and any agreements between the parties.

1 2. Facebook objects to each Interrogatory to the extent that it is not limited to the
2 relevant time period, thus making the Interrogatory overly broad, unduly burdensome, and not
3 relevant to the claims or defenses in this action. Unless otherwise specified in its responses, and
4 pursuant to the agreement of the parties, Facebook's responses will be limited to information
5 generated between April 1, 2010 and December 30, 2013.

6 3. Facebook objects to each Interrogatory to the extent that it seeks information unrelated
7 and irrelevant to the claims or defenses in this litigation and not reasonably calculated to lead to the
8 discovery of admissible evidence.

9 4. Facebook objects to each Interrogatory as overly broad and unduly burdensome,
10 particularly in view of Facebook's disproportionate cost necessary to investigate as weighed against
11 Plaintiffs' need for the information. The Interrogatories seek broad and vaguely defined categories of
12 materials that are not reasonably tailored to the subject matter of this action.

13 5. Facebook objects to each Interrogatory to the extent that it purports to request the
14 identification and disclosure of information or documents that were prepared in anticipation of
15 litigation, constitute attorney work product, reveal privileged attorney-client communications, or are
16 otherwise protected from disclosure under any applicable privileges, laws, or rules. Facebook hereby
17 asserts all such applicable privileges and protections, and excludes privileged and protected
18 information from its responses to each Interrogatory. *See generally* Fed. R. Evid. 502; Cal. Code
19 Evid. § 954. Inadvertent production of any information or documents that are privileged or otherwise
20 immune from discovery shall not constitute a waiver of any privilege or of any other ground for
21 objecting to the discovery with respect to such information or documents or the subject matter
22 thereof, or the right of Facebook to object to the use of any such information or documents or the
23 subject matter thereof during these or any other proceedings. In the event of inadvertent disclosure
24 of any information or inadvertent production or identification of documents or communications that
25 are privileged or otherwise immune from discovery, Plaintiffs will return the information and
26 documents to Facebook and will be precluded from disclosing or relying upon such information or
27 documents in any way.

28 6. Facebook objects to each and every Interrogatory to the extent that the information

1 sought by the Interrogatory is more appropriately pursued through another means of discovery, such
2 as a request for production or deposition.

3 7. Facebook objects to each and every Interrogatory, Definition, and Instruction to the
4 extent that it seeks information outside of Facebook's possession, custody, and control.

5 8. Facebook objects to each Interrogatory to the extent that it requests information
6 protected by the right of privacy of Facebook and/or third parties, or information that is confidential,
7 proprietary, or competitively sensitive.

8 9. Facebook objects to each Interrogatory to the extent that it seeks documents or
9 information already in Plaintiffs' possession or available in the public domain. Such information is
10 equally available to Plaintiffs.

11 10. Facebook objects to each Interrogatory on the ground and to the extent that it exceeds
12 the bounds of Federal Rule of Civil Procedure 33(a)(1), which provides that "a party may serve on
13 any other party no more than 25 written interrogatories, including all discrete subparts."

14 **OBJECTIONS TO DEFINITIONS**

15 1. Facebook objects to Plaintiffs' definition of "Association" to the extent that it is
16 vague, ambiguous, overly broad, and unduly burdensome. Facebook further objects to the definition
17 to the extent that Plaintiffs purport to use this defined term to seek materials that are not relevant to
18 the claims and defenses in this action.

19 2. Facebook objects to Plaintiffs' definition of "Association Type" or "(atype)" to the
20 extent that it is vague, ambiguous, overly broad, and unduly burdensome. Facebook further objects
21 to the definition to the extent that Plaintiffs purport to use this defined term to seek materials that are
22 not relevant to the claims and defenses in this action.

23 3. Facebook generally objects to Plaintiffs' definitions of "Communication,"
24 "Document(s)," "Electronic Media," "ESI," "Electronically Stored Information," "Identify," and
25 "Metadata" to the extent that Plaintiffs purport to use these defined terms to request the identification
26 and disclosure of documents that: (a) were prepared in anticipation of litigation; (b) constitute
27 attorney work product; (c) reveal privileged attorney-client communications; or (d) are otherwise
28 protected from disclosure under any applicable privileges, laws, and/or rules. Facebook further

1 objects to the extent that these definitions purport to impose obligations that go beyond the
2 requirements of the Federal and Local Rules.

3 4. Facebook objects to Plaintiffs' definition of "Destination Object" or "(id2)" to the
4 extent that it is vague, ambiguous, overly broad, and unduly burdensome. Facebook further objects
5 to the definition to the extent that Plaintiffs purport to use this defined term to seek materials that are
6 not relevant to the claims and defenses in this action.

7 5. Facebook objects to Plaintiffs' definition of "(id)" to the extent that it is vague,
8 ambiguous, overly broad, and unduly burdensome. Facebook further objects to the definition to the
9 extent that Plaintiffs purport to use this defined term to seek materials that are not relevant to the
10 claims and defenses in this action.

11 6. Facebook objects to Plaintiffs' definition of "Key -> Value Pair" to the extent that it is
12 vague, ambiguous, overly broad, and unduly burdensome. Facebook further objects to the definition
13 to the extent that Plaintiffs purport to use this defined term to seek materials that are not relevant to
14 the claims and defenses in this action.

15 7. Facebook objects to Plaintiffs' definition of "Object" to the extent that it is vague,
16 ambiguous, overly broad, and unduly burdensome. Facebook further objects to the definition to the
17 extent that Plaintiffs purport to use this defined term to seek materials that are not relevant to the
18 claims and defenses in this action.

19 8. Facebook objects to Plaintiffs' definition of "Object type" or "(otype)" to the extent
20 that it is vague, ambiguous, overly broad, and unduly burdensome. Facebook further objects to the
21 definition to the extent that Plaintiffs purport to use this defined term to seek materials that are not
22 relevant to the claims and defenses in this action.

23 9. Facebook objects to Plaintiffs' definition and use of the term "Person" as vague,
24 ambiguous, overly broad, and unduly burdensome to the extent that Plaintiffs intend to use this term
25 to include "any natural person or any business, legal or governmental entity or association" over
26 which Facebook exercises no control.

27 10. Facebook objects to Plaintiffs' definition of "Process" to the extent that it is vague,
28 ambiguous, overly broad, and unduly burdensome. Facebook further objects to the definition to the

1 extent that Plaintiffs purport to use this defined term to seek materials that are not relevant to the
2 claims and defenses in this action.

3 11. Facebook objects to Plaintiffs' definition of "Private Message(s)" to the extent that it
4 is vague, ambiguous, overly broad, and unduly burdensome. Facebook further objects to the
5 definition to the extent that Plaintiffs purport to use this defined term to seek materials that are not
6 relevant to the claims and defenses in this action.

7 12. Facebook objects to Plaintiffs' definitions of "Relate(s) to," "Related to" and
8 "Relating to" on the ground that the definitions make the Interrogatories overly broad and unduly
9 burdensome and impose obligations that go beyond the requirements of the Federal and Local Rules.
10 Facebook shall construe these terms as commonly and ordinarily understood.

11 13. Facebook objects to Plaintiffs' definition of "Source Object" or "(id1)" to the extent
12 that it is vague, ambiguous, overly broad, and unduly burdensome. Facebook further objects to the
13 definition to the extent that Plaintiffs purport to use this defined term to seek materials that are not
14 relevant to the claims and defenses in this action.

15 14. Facebook objects to Plaintiffs' definition and use of the terms "You," "Your," or
16 "Facebook" as vague, ambiguous, overly broad, and unduly burdensome to the extent the terms are
17 meant to include "directors, officers, employees, partners, members, representatives, agents
18 (including attorneys, accountants, consultants, investment advisors or bankers), and any other person
19 purporting to act on [Facebook, Inc.'s] behalf. . . . parents, subsidiaries, affiliates, predecessor
20 entities, successor entities, divisions, departments, groups, acquired entities and/or related entities or
21 any other entity acting or purporting to act on its behalf" over which Facebook exercises no control,
22 and to the extent that Plaintiffs purport to use these terms to impose obligations that go beyond the
23 requirements of the Federal and Local Rules.

24 **OBJECTIONS TO "RULES OF CONSTRUCTION" AND INSTRUCTIONS**

25 1. Facebook objects to Plaintiffs' "Rules of Construction" and "Instructions" to the
26 extent they impose obligations that go beyond the requirements of the Federal and Local Rules.

27 2. Facebook objects to Plaintiffs' Instruction No. 2 to the extent that it is not limited to
28 the relevant time period, thus making the Instruction overly broad, unduly burdensome, and not

1 relevant to the claims or defenses in this action. Unless otherwise specified in its responses, and
2 pursuant to the agreement of the parties, Facebook’s response will be limited to information
3 generated between April 1, 2010 and December 30, 2013.

4 3. Facebook objects to Plaintiffs’ Instruction No. 6 as ambiguous and unduly
5 burdensome. Facebook further objects to the instruction to the extent it exceeds the requirements of
6 the Federal and Local Rules.

7 **OBJECTION TO PURPORTED “RELEVANT TIME PERIOD”**

8 Facebook objects to Plaintiffs’ proposed “Relevant Time Period” (September 26, 2006
9 through the present) because it substantially exceeds the proposed class period identified in Plaintiffs’
10 Consolidated Amended Complaint, does not reflect the time period that is relevant to Plaintiffs’
11 claims in this action, and renders the Interrogatories overly broad, unduly burdensome, and irrelevant.
12 Unless otherwise specified, and pursuant to the agreement of the parties, Facebook’s Responses to
13 these Interrogatories will be limited to information generated between April 1, 2010 and December
14 30, 2013. Facebook otherwise objects to the remainder of Plaintiffs’ statement regarding the
15 “Relevant Time Period” to the extent that it purports to impose obligations beyond those imposed by
16 the Federal and Local Rules.

17 **SPECIFIC RESPONSES AND OBJECTIONS**

18 **INTERROGATORY NO. 8:**

19 Identify all facts relating to the Processing of each Private Message sent or received by
20 Plaintiffs containing a URL¹, including, for each Private Message:

- 21 (A) all Objects that were created during the Processing of the Private Message, including
22 the (id) and the Object Type for each Object, as well as any Key -> Value Pair(s)
23 contained in each Object;

24
25
26
27 ¹ Each such Private Message has been identified by each Plaintiff in Exhibit 1 to his respective Objections and
28 Responses to Defendant’s First Set of Interrogatories.

- 1 (B) all Objects that were created specifically when the embedded URL was shared,
2 including the (id) and the Object Type for each Object, as well as any Key -> Value
3 Pair(s) contained in each Object;
- 4 (C) all Associations related to each Private Message, identified by the Source Object,
5 Association Type, and Destination Object, as well as any Key -> Value Pair(s)
6 contained in each Association;
- 7 (D) the database names and table names in which each Association and Object is stored;
- 8 (E) each application or feature in Facebook that uses the Objects or Associations created
9 for each Private Message; and
- 10 (F) how each Object associated with the Private Message was used by Facebook.

11 **RESPONSE TO INTERROGATORY NO. 8:**

12 Facebook restates and incorporates its Preliminary Statement, General Objections, Objections
13 to “Rules of Construction,” Instructions, and Purported “Relevant Time Period” as though fully set
14 forth in this Response. Facebook further objects to this Interrogatory on the following additional
15 grounds:

16 (A) The Interrogatory is vague and ambiguous in its use of the terms and phrases
17 “Processing”; “Private Message”; “Objects”; “(id)”; “Object Type”; “Key -> Value Pair(s)”; “Objects
18 that were created specifically when the embedded URL was shared”; “Associations”; “Source
19 Object”; “Association Type”; “Destination Object”; “database names and table names”; and
20 “application or feature.”

21 (B) The Interrogatory is compound.

22 (C) The Interrogatory seeks information that is not relevant to the claims or defenses in
23 this action to the extent it concerns practices other than those challenged in this action (the alleged
24 increase in the Facebook “Like” count on a website when the URL for that website was contained in
25 a message transmitted through Facebook’s Messages product during the class period).

26 (D) The Interrogatory is vague, unduly burdensome, and overly broad in that it purports to
27 seek “all facts relating to the Processing of each Private Message sent or received by Plaintiffs
28 containing a URL.”

1 (E) The Interrogatory seeks information that reflects trade secrets, confidential, and/or
2 proprietary company information.

3 (F) The Interrogatory exceeds the bounds of Federal Rule of Civil Procedure 33(a)(1),
4 which provides that “a party may serve on any other party no more than 25 written interrogatories,
5 including all discrete subparts.”

6 Subject to and without waiving the foregoing general and specific objections, and subject to
7 the ongoing nature of discovery in this action, Facebook responds as follows:

8 Facebook refers Plaintiffs to Facebook’s Responses and Objections to Plaintiffs’ Interrogatory
9 Nos. 2, 3, and 4. Facebook also will meet and confer with Plaintiffs’ counsel to determine the proper
10 scope of this overly broad and ambiguous Interrogatory.

11 **SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 8:**

12 Facebook restates and incorporates its Preliminary Statement, General Objections, Objections
13 to “Rules of Construction,” Instructions, and Purported “Relevant Time Period” as though fully set
14 forth in this Response. Facebook further objects to this Interrogatory on the following additional
15 grounds:

16 (A) The Interrogatory is vague and ambiguous in its use of the terms and phrases
17 “Processing”; “Private Message”; “Objects”; “(id)”; “Object Type”; “Key -> Value Pair(s)”; “Objects
18 that were created specifically when the embedded URL was shared”; “Associations”; “Source
19 Object”; “Association Type”; “Destination Object”; “database names and table names”; and
20 “application or feature.”

21 (B) The Interrogatory is compound.

22 (C) The Interrogatory seeks information that is not relevant to the claims or defenses in
23 this action to the extent it concerns practices other than those challenged in this action (the alleged
24 increase in the Facebook “Like” count on a website when the URL for that website was contained in
25 a message transmitted through Facebook’s Messages product during the class period).

26 (D) The Interrogatory is vague, unduly burdensome, and overly broad in that it purports to
27 seek “all facts relating to the Processing of each Private Message sent or received by Plaintiffs
28 containing a URL.”

1 (E) The Interrogatory seeks information that reflects trade secrets, confidential, and/or
2 proprietary company information.

3 (F) The Interrogatory exceeds the bounds of Federal Rule of Civil Procedure 33(a)(1),
4 which provides that “a party may serve on any other party no more than 25 written interrogatories,
5 including all discrete subparts.”

6 Subject to and without waiving the foregoing general and specific objections, and subject to
7 the ongoing nature of discovery in this action, Facebook responds as follows:

8 Facebook refers Plaintiffs to Facebook’s Responses and Objections to Plaintiffs’ Interrogatory
9 Nos. 2, 3, and 4. Additionally, and pursuant to Rule 33(d) of the Federal Rules of Civil Procedure,
10 Facebook refers Plaintiffs to documents bearing production numbers FB000005502 through
11 FB000006175, which contain information responsive to this Interrogatory for the messages identified
12 in Plaintiffs’ letter of July 24, 2015 that could be located after a reasonable search and diligent
13 inquiry. The chart attached as Exhibit 1 identifies the production numbers of the documents that
14 correspond to the messages identified in Plaintiffs’ July 24, 2015 letter.

15 DATED: September 1, 2015

GIBSON, DUNN & CRUTCHER LLP

16 By: _____/s/
17 Joshua A. Jessen

18 Attorneys for Defendant FACEBOOK, INC.

Exhibit 1

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

	To	From	Date	URL	Production Number(s)
1					FB000005502-FB000005527
					FB000005528-FB000005574
					FB000005575-FB000005576
2					FB000005577-FB000005578
3					FB000005579-FB000005600
					FB000005601-FB000005646
					FB000005647-FB000005648
4					FB000005649-FB000005672
					FB000005673-FB000005719
					FB000005720-FB000005721
5					FB000005722-FB000005749
					FB000005750-FB000005797
					FB000005798-FB000005799
6	FB000005800-FB000005801				
7	FB000005802-FB000005826				
	FB000005827-FB000005879				
	FB000005880-FB000005881				
10	Unavailable.				
68	FB000005882-FB000005883				

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

	To	From	Date	URL	Production Number(s)
89					FB000005884-FB000005886 FB000005887-FB000005932 FB000005933-FB000005934
93					FB000005935-FB000005957 FB000005958-FB000006004 FB000006005-FB000006006
99					FB000006007-FB000006008
113					FB000006009-FB000006037 FB000006038-FB000006084 FB000006085-FB000006087
115					Unavailable.
123					FB000006088-FB000006089
200					FB000006090-FB000006119 FB000006120-FB000006169 FB000006170-FB000006171
410					Unavailable.

	To	From	Date	URL	Production Number(s)
					
654					FB000006172-FB000006173
482					FB000006174-FB000006175

1 **PROOF OF SERVICE**

2 I, Ashley M. Rogers, declare as follows:

3 I am employed in the County of Santa Clara, State of California, I am over the age of eighteen
4 years and am not a party to this action; my business address is 1881 Page Mill Road, Palo Alto, CA
94304-1211, in said County and State. On September 1, 2015, I served the following document(s):

5 **DEFENDANT FACEBOOK, INC.’S SUPPLEMENTAL RESPONSES AND**
6 **OBJECTIONS TO PLAINTIFFS’ NARROWED SECOND SET OF**
7 **INTERROGATORIES**

8 on the parties stated below, by the following means of service:

9 David F. Slade
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16 Michael W. Sobol
17 Lief Cabraser Heimann & Bernstein, LLP
msobol@lchb.com

- 18
- 19 **BY ELECTRONIC SERVICE:** On the above-mentioned date, based on a court order or
20 an agreement of the parties to accept service by electronic transmission, I caused the
documents to be sent to the persons at the electronic notification addresses as shown
21 above.
 - 22 I am employed in the office of Joshua A. Jessen and am a member of the bar of this court.
 - 23 I declare under penalty of perjury that the foregoing is true and correct.

24 Executed on September 1, 2015.

25
26 _____ /s/
Ashley M. Rogers

EXHIBIT 21

This agreement was written in English (US). To the extent any translated version of this agreement conflicts with the English version, the English version controls. Please note that Section 16 contains certain changes to the general terms for users outside the United States.

Date of Last Revision: April 26, 2011.

Statement of Rights and Responsibilities

This Statement of Rights and Responsibilities (Statement) derives from the [Facebook Principles](#), and governs our relationship with users and others who interact with Facebook. By using or accessing Facebook, you agree to this Statement.

1. Privacy

Your privacy is very important to us. We designed our [Privacy Policy](#) to make important disclosures about how you can use Facebook to share with others and how we collect and can use your content and information. We encourage you to read the Privacy Policy, and to use it to help make informed decisions.

2. Sharing Your Content and Information

You own all of the content and information you post on Facebook, and you can control how it is shared through your [privacy](#) and [application settings](#). In addition:

1. For content that is covered by intellectual property rights, like photos and videos (IP content), you specifically give us the following permission, subject to your [privacy](#) and [application settings](#): you grant us a non-exclusive, transferable, sub-licensable, royalty-free, worldwide license to use any IP content that you post on or in connection with Facebook (IP License). This IP License ends when you delete your IP content or your account unless your content has been shared with others, and they have not deleted it.
2. When you delete IP content, it is deleted in a manner similar to emptying the recycle bin on a computer. However, you understand that removed content may persist in backup copies for a reasonable period of time (but will not be available to others).
3. When you use an application, your content and information is shared with the application. We require applications to respect your privacy, and your agreement with that application will control how the application can use, store, and transfer that content and information. (To learn more about Platform, read our [Privacy Policy](#) and [Platform Page](#).)
4. When you publish content or information using the everyone setting, it means that you are allowing everyone, including people off of Facebook, to access and use that information, and to associate it with you (i.e., your name and profile picture).
5. We always appreciate your feedback or other suggestions about Facebook, but you understand that we may use them without any obligation to compensate you for them (just as you have no obligation to offer them).

3. Safety

We do our best to keep Facebook safe, but we cannot guarantee it. We need your help to do that, which includes the following commitments:

1. You will not send or otherwise post unauthorized commercial communications (such as spam) on Facebook.
2. You will not collect users' content or information, or otherwise access Facebook, using automated means (such as harvesting bots, robots, spiders, or scrapers) without our permission.
3. You will not engage in unlawful multi-level marketing, such as a pyramid scheme, on Facebook.
4. You will not upload viruses or other malicious code.
5. You will not solicit login information or access an account belonging to someone else.
6. You will not bully, intimidate, or harass any user.
7. You will not post content that: is hateful, threatening, or pornographic; incites violence; or contains nudity or graphic or gratuitous violence.
8. You will not develop or operate a third-party application containing alcohol-related or other mature content (including advertisements) without appropriate age-based restrictions.
9. You will follow our [Promotions Guidelines](#) and all applicable laws if you publicize or offer any contest, giveaway, or sweepstakes ("promotion") on Facebook.
10. You will not use Facebook to do anything unlawful, misleading, malicious, or discriminatory.
11. You will not do anything that could disable, overburden, or impair the proper working of Facebook, such as a denial of service attack.
12. You will not facilitate or encourage any violations of this Statement.

4. Registration and Account Security

Facebook users provide their real names and information, and we need your help to keep it that way. Here are some commitments you make to us relating to registering and maintaining the security of your account:

1. You will not provide any false personal information on Facebook, or create an account for anyone other than yourself without permission.
2. You will not create more than one personal profile.
3. If we disable your account, you will not create another one without our permission.
4. You will not use your personal profile for your own commercial gain (such as selling your status update to an advertiser).
5. You will not use Facebook if you are under 13.
6. You will not use Facebook if you are a convicted sex offender.
7. You will keep your contact information accurate and up-to-date.
8. You will not share your password, (or in the case of developers, your secret key), let anyone else access your account, or do anything else that might jeopardize the security of your account.
9. You will not transfer your account (including any page or application you administer) to

anyone without first getting our written permission.

10. If you select a username for your account we reserve the right to remove or reclaim it if we believe appropriate (such as when a trademark owner complains about a username that does not closely relate to a user's actual name).

5. Protecting Other People's Rights

We respect other people's rights, and expect you to do the same.

1. You will not post content or take any action on Facebook that infringes or violates someone else's rights or otherwise violates the law.
2. We can remove any content or information you post on Facebook if we believe that it violates this Statement.
3. We will provide you with tools to help you protect your intellectual property rights. To learn more, visit our [How to Report Claims of Intellectual Property Infringement](#) page.
4. If we remove your content for infringing someone else's copyright, and you believe we removed it by mistake, we will provide you with an opportunity to appeal.
5. If you repeatedly infringe other people's intellectual property rights, we will disable your account when appropriate.
6. You will not use our copyrights or trademarks (including Facebook, the Facebook and F Logos, FB, Face, Poke, Wall and 32665), or any confusingly similar marks, without our written permission.
7. If you collect information from users, you will: obtain their consent, make it clear you (and not Facebook) are the one collecting their information, and post a privacy policy explaining what information you collect and how you will use it.
8. You will not post anyone's identification documents or sensitive financial information on Facebook.
9. You will not tag users or send email invitations to non-users without their consent.

6. Mobile

1. We currently provide our mobile services for free, but please be aware that your carrier's normal rates and fees, such as text messaging fees, will still apply.
2. In the event you change or deactivate your mobile telephone number, you will update your account information on Facebook within 48 hours to ensure that your messages are not sent to the person who acquires your old number.
3. You provide all rights necessary to enable users to sync (including through an application) their contact lists with any basic information and contact information that is visible to them on Facebook, as well as your name and profile picture.

7. Payments and Deals

1. If you make a payment on Facebook or use Facebook Credits, you agree to our [Payments Terms](#).
2. If purchase a Deal, you agree to our [Deals Terms](#).
3. If you provide a Deal or partner with us to provide a Deal, you agree to the [Merchant Deal Terms](#) in addition to any other agreements you may have with us.

8. Special Provisions Applicable to Share Links

If you include our Share Link button on your website, the following additional terms apply to you:

1. We give you permission to use Facebook's Share Link button so that users can post links or content from your website on Facebook.
2. You give us permission to use and allow others to use such links and content on Facebook.
3. You will not place a Share Link button on any page containing content that would violate this Statement if posted on Facebook.

9. Special Provisions Applicable to Developers/Operators of Applications and Websites

If you are a developer or operator of a Platform application or website, the following additional terms apply to you:

1. You are responsible for your application and its content and all uses you make of Platform. This includes ensuring your application or use of Platform meets our [Facebook Platform Policies](#) and our [Advertising Guidelines](#).
2. Your access to and use of data you receive from Facebook, will be limited as follows:
 1. You will only request data you need to operate your application.
 2. You will have a privacy policy that tells users what user data you are going to use and how you will use, display, share, or transfer that data and you will include your privacy policy URL in the [Developer Application](#).
 3. You will not use, display, share, or transfer a user's data in a manner inconsistent with your privacy policy.
 4. You will delete all data you receive from us concerning a user if the user asks you to do so, and will provide a mechanism for users to make such a request.
 5. You will not include data you receive from us concerning a user in any advertising creative.
 6. You will not directly or indirectly transfer any data you receive from us to (or use such data in connection with) any ad network, ad exchange, data broker, or other advertising related toolset, even if a user consents to that transfer or use.
 7. You will not sell user data. If you are acquired by or merge with a third party, you can continue to use user data within your application, but you cannot transfer user data outside of your application.
 8. We can require you to delete user data if you use it in a way that we determine is inconsistent with users' expectations.
 9. We can limit your access to data.
 10. You will comply with all other restrictions contained in our [Facebook Platform Policies](#).
3. You will not give us information that you independently collect from a user or a user's content without that user's consent.
4. You will make it easy for users to remove or disconnect from your application.
5. You will make it easy for users to contact you. We can also share your email address with users and others claiming that you have infringed or otherwise violated their rights.

6. You will provide customer support for your application.
7. You will not show third party ads or web search boxes on Facebook.
8. We give you all rights necessary to use the code, APIs, data, and tools you receive from us.
9. You will not sell, transfer, or sublicense our code, APIs, or tools to anyone.
10. You will not misrepresent your relationship with Facebook to others.
11. You may use the logos we make available to developers or issue a press release or other public statement so long as you follow our [Facebook Platform Policies](#).
12. We can issue a press release describing our relationship with you.
13. You will comply with all applicable laws. In particular you will (if applicable):
 1. have a policy for removing infringing content and terminating repeat infringers that complies with the Digital Millennium Copyright Act.
 2. comply with the Video Privacy Protection Act (VPPA), and obtain any opt-in consent necessary from users so that user data subject to the VPPA may be shared on Facebook. You represent that any disclosure to us will not be incidental to the ordinary course of your business.
14. We do not guarantee that Platform will always be free.
15. You give us all rights necessary to enable your application to work with Facebook, including the right to incorporate content and information you provide to us into streams, profiles, and user action stories.
16. You give us the right to link to or frame your application, and place content, including ads, around your application.
17. We can analyze your application, content, and data for any purpose, including commercial (such as for targeting the delivery of advertisements and indexing content for search).
18. To ensure your application is safe for users, we can audit it.
19. We can create applications that offer similar features and services to, or otherwise compete with, your application.

10. About Advertisements and Other Commercial Content Served or Enhanced by Facebook

Our goal is to deliver ads that are not only valuable to advertisers, but also valuable to you. In order to do that, you agree to the following:

1. You can use your [privacy settings](#) to limit how your name and profile picture may be associated with commercial, sponsored, or related content (such as a brand you like) served or enhanced by us. You give us permission to use your name and profile picture in connection with that content, subject to the limits you place.
2. We do not give your content or information to advertisers without your consent.
3. You understand that we may not always identify paid services and communications as such.

11. Special Provisions Applicable to Advertisers

You can target your specific audience by buying ads on Facebook or our publisher network. The following additional terms apply to you if you place an order through our online advertising

portal (Order):

1. When you place an Order, you will tell us the type of advertising you want to buy, the amount you want to spend, and your bid. If we accept your Order, we will deliver your ads as inventory becomes available. When serving your ad, we do our best to deliver the ads to the audience you specify, although we cannot guarantee in every instance that your ad will reach its intended target.
2. In instances where we believe doing so will enhance the effectiveness of your advertising campaign, we may broaden the targeting criteria you specify.
3. You will pay for your Orders in accordance with our Payments Terms. The amount you owe will be calculated based on our tracking mechanisms.
4. Your ads will comply with our Advertising Guidelines.
5. We will determine the size, placement, and positioning of your ads.
6. We do not guarantee the activity that your ads will receive, such as the number of clicks you will get.
7. We cannot control how people interact with your ads, and are not responsible for click fraud or other improper actions that affect the cost of running ads. We do, however, have systems to detect and filter certain suspicious activity, learn more here.
8. You can cancel your Order at any time through our online portal, but it may take up to 24 hours before the ad stops running. You are responsible for paying for those ads.
9. Our license to run your ad will end when we have completed your Order. You understand, however, that if users have interacted with your ad, your ad may remain until the users delete it.
10. We can use your ads and related content and information for marketing or promotional purposes.
11. You will not issue any press release or make public statements about your relationship with Facebook without written permission.
12. We may reject or remove any ad for any reason.
13. If you are placing ads on someone else's behalf, we need to make sure you have permission to place those ads, including the following:
 1. You warrant that you have the legal authority to bind the advertiser to this Statement.
 2. You agree that if the advertiser you represent violates this Statement, we may hold you responsible for that violation.

12. Special Provisions Applicable to Pages

If you create or administer a Page on Facebook, you agree to our Pages Terms.

13. Amendments

1. We can change this Statement if we provide you notice (by posting the change on the Facebook Site Governance Page) and an opportunity to comment. To get notice of any future changes to this Statement, visit our Facebook Site Governance Page and become a fan.
2. For changes to sections 7, 8, 9, and 11 (sections relating to payments, application developers, website operators, and advertisers), we will give you a minimum of three days notice. For all other changes we will give you a minimum of seven days notice. All

such comments must be made on the [Facebook Site Governance Page](#).

3. If more than 7,000 users comment on the proposed change, we will also give you the opportunity to participate in a vote in which you will be provided alternatives. The vote shall be binding on us if more than 30% of all active registered users as of the date of the notice vote.
4. We can make changes for legal or administrative reasons, or to correct an inaccurate statement, upon notice without opportunity to comment.

14. Termination

If you violate the letter or spirit of this Statement, or otherwise create risk or possible legal exposure for us, we can stop providing all or part of Facebook to you. We will notify you by email or at the next time you attempt to access your account. You may also delete your account or disable your application at any time. In all such cases, this Statement shall terminate, but the following provisions will still apply: 2.2, 2.4, 3-5, 8.2, 9.1-9.3, 9.9, 9.10, 9.13, 9.15, 9.18, 10.3, 11.2, 11.5, 11.6, 11.9, 11.12, 11.13, and 14-18.

15. Disputes

1. You will resolve any claim, cause of action or dispute (claim) you have with us arising out of or relating to this Statement or Facebook exclusively in a state or federal court located in Santa Clara County. The laws of the State of California will govern this Statement, as well as any claim that might arise between you and us, without regard to conflict of law provisions. You agree to submit to the personal jurisdiction of the courts located in Santa Clara County, California for the purpose of litigating all such claims.
2. If anyone brings a claim against us related to your actions, content or information on Facebook, you will indemnify and hold us harmless from and against all damages, losses, and expenses of any kind (including reasonable legal fees and costs) related to such claim.
3. WE TRY TO KEEP FACEBOOK UP, BUG-FREE, AND SAFE, BUT YOU USE IT AT YOUR OWN RISK. WE ARE PROVIDING FACEBOOK AS IS WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. WE DO NOT GUARANTEE THAT FACEBOOK WILL BE SAFE OR SECURE. FACEBOOK IS NOT RESPONSIBLE FOR THE ACTIONS, CONTENT, INFORMATION, OR DATA OF THIRD PARTIES, AND YOU RELEASE US, OUR DIRECTORS, OFFICERS, EMPLOYEES, AND AGENTS FROM ANY CLAIMS AND DAMAGES, KNOWN AND UNKNOWN, ARISING OUT OF OR IN ANY WAY CONNECTED WITH ANY CLAIM YOU HAVE AGAINST ANY SUCH THIRD PARTIES. IF YOU ARE A CALIFORNIA RESIDENT, YOU WAIVE CALIFORNIA CIVIL CODE §1542, WHICH SAYS: A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM MUST HAVE MATERIALLY AFFECTED HIS SETTLEMENT WITH THE DEBTOR. WE WILL NOT BE LIABLE TO YOU FOR ANY LOST PROFITS OR OTHER

CONSEQUENTIAL, SPECIAL, INDIRECT, OR INCIDENTAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THIS STATEMENT OR FACEBOOK, EVEN IF WE HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. OUR AGGREGATE LIABILITY ARISING OUT OF THIS STATEMENT OR FACEBOOK WILL NOT EXCEED THE GREATER OF ONE HUNDRED DOLLARS (\$100) OR THE AMOUNT YOU HAVE PAID US IN THE PAST TWELVE MONTHS. APPLICABLE LAW MAY NOT ALLOW THE LIMITATION OR EXCLUSION OF LIABILITY OR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. IN SUCH CASES, FACEBOOK'S LIABILITY WILL BE LIMITED TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW.

16. Special Provisions Applicable to Users Outside the United States

We strive to create a global community with consistent standards for everyone, but we also strive to respect local laws. The following provisions apply to users outside the United States:

1. You consent to having your personal data transferred to and processed in the United States.
2. If you are located in a country embargoed by the United States, or are on the U.S. Treasury Department's list of Specially Designated Nationals you will not engage in commercial activities on Facebook (such as advertising or payments) or operate a Platform application or website.
3. Certain specific terms that apply only for German users are available [here](#).

17. Definitions

1. By Facebook we mean the features and services we make available, including through (a) our website at www.facebook.com and any other Facebook branded or co-branded websites (including sub-domains, international versions, widgets, and mobile versions); (b) our Platform; (c) social plugins such as the like button, the share button and other similar offerings and (d) other media, software (such as a toolbar), devices, or networks now existing or later developed.
2. By Platform we mean a set of APIs and services that enable others, including application developers and website operators, to retrieve data from Facebook or provide data to us.
3. By information we mean facts and other information about you, including actions you take.
4. By content we mean anything you post on Facebook that would not be included in the definition of information.
5. By data we mean content and information that third parties can retrieve from Facebook or provide to Facebook through Platform.
6. By post we mean post on Facebook or otherwise make available to us (such as by using an application).
7. By use we mean use, copy, publicly perform or display, distribute, modify, translate, and create derivative works of.
8. By active registered user we mean a user who has logged into Facebook at least once in the previous 30 days.

9. By application we mean any application or website that uses or accesses Platform, as well as anything else that receives or has received data from us. If you no longer access Platform but have not deleted all data from us, the term application will apply until you delete the data.

18. Other

1. If you are a resident of or have your principal place of business in the US or Canada, this Statement is an agreement between you and Facebook, Inc. Otherwise, this Statement is an agreement between you and Facebook Ireland Limited. References to “us,” “we,” and “our” mean either Facebook, Inc. or Facebook Ireland Limited, as appropriate.
2. This Statement makes up the entire agreement between the parties regarding Facebook, and supersedes any prior agreements.
3. If any portion of this Statement is found to be unenforceable, the remaining portion will remain in full force and effect.
4. If we fail to enforce any of this Statement, it will not be considered a waiver.
5. Any amendment to or waiver of this Statement must be made in writing and signed by us.
6. You will not transfer any of your rights or obligations under this Statement to anyone else without our consent.
7. All of our rights and obligations under this Statement are freely assignable by us in connection with a merger, acquisition, or sale of assets, or by operation of law or otherwise.
8. Nothing in this Statement shall prevent us from complying with the law.
9. This Statement does not confer any third party beneficiary rights.
10. You will comply with all applicable laws when using or accessing Facebook.

You may also want to review the following documents:

- Privacy Policy: The Privacy Policy is designed to help you understand how we collect and use information.
 - Payment Terms: These additional terms apply to all payments made on or through Facebook.
 - Platform Page: This page helps you better understand what happens when you add a third-party application or use Facebook Connect, including how they may access and use your data.
 - Facebook Platform Policies: These guidelines outline the policies that apply to applications, including Connect sites.
 - Advertising Guidelines: These guidelines outline the policies that apply to advertisements placed on Facebook.
 - Promotions Guidelines: These guidelines outline the policies that apply if you have obtained written pre-approval from us to offer contests, sweepstakes, and other types of promotions on Facebook.
 - How to Report Claims of Intellectual Property Infringement
 - How to Appeal Claims of Copyright Infringement
 - Pages Terms
- **To access the Statement of Rights and Responsibilities in several different languages,**

change the language setting for your Facebook session by clicking on the language link in the left corner of most pages. If the Statement is not available in the language you select, we will default to the English version.

EXHIBIT 22

This agreement was written in English (US). To the extent any translated version of this agreement conflicts with the English version, the English version controls. Please note that Section 17 contains certain changes to the general terms for users outside the United States.

Date of Last Revision: June 8, 2012.

Statement of Rights and Responsibilities

This Statement of Rights and Responsibilities ("Statement," "Terms," or "SRR") derives from the [Facebook Principles](#), and is our terms of service that governs our relationship with users and others who interact with Facebook. By using or accessing Facebook, you agree to this Statement, as updated from time to time in accordance with Section 14 below. Additionally, you will find resources at the end of this document that help you understand how Facebook works.

1. Privacy

Your privacy is very important to us. We designed our [Data Use Policy](#) to make important disclosures about how you can use Facebook to share with others and how we collect and can use your content and information. We encourage you to read the Data Use Policy, and to use it to help you make informed decisions.

2. Sharing Your Content and Information

You own all of the content and information you post on Facebook, and you can control how it is shared through your [privacy](#) and [application settings](#). In addition:

1. For content that is covered by intellectual property rights, like photos and videos (IP content), you specifically give us the following permission, subject to your [privacy](#) and [application settings](#): you grant us a non-exclusive, transferable, sub-licensable, royalty-free, worldwide license to use any IP content that you post on or in connection with Facebook (IP License). This IP License ends when you delete your IP content or your account unless your content has been shared with others, and they have not deleted it.
2. When you delete IP content, it is deleted in a manner similar to emptying the recycle bin on a computer. However, you understand that removed content may persist in backup copies for a reasonable period of time (but will not be available to others).
3. When you use an application, the application may ask for your permission to access your content and information as well as content and information that others have shared with you. We require applications to respect your privacy, and your agreement with that application will control how the application can use, store, and transfer that content and information. (To learn more about Platform, including how you can control what information other people may share with applications, read our [Data Use Policy](#) and [Platform Page](#).)

4. When you publish content or information using the Public setting, it means that you are allowing everyone, including people off of Facebook, to access and use that information, and to associate it with you (i.e., your name and profile picture).
5. We always appreciate your feedback or other suggestions about Facebook, but you understand that we may use them without any obligation to compensate you for them (just as you have no obligation to offer them).

3. Safety

We do our best to keep Facebook safe, but we cannot guarantee it. We need your help to keep Facebook safe, which includes the following commitments by you:

1. You will not post unauthorized commercial communications (such as spam) on Facebook.
2. You will not collect users' content or information, or otherwise access Facebook, using automated means (such as harvesting bots, robots, spiders, or scrapers) without our prior permission.
3. You will not engage in unlawful multi-level marketing, such as a pyramid scheme, on Facebook.
4. You will not upload viruses or other malicious code.
5. You will not solicit login information or access an account belonging to someone else.
6. You will not bully, intimidate, or harass any user.
7. You will not post content that: is hate speech, threatening, or pornographic; incites violence; or contains nudity or graphic or gratuitous violence.
8. You will not develop or operate a third-party application containing alcohol-related, dating or other mature content (including advertisements) without appropriate age-based restrictions.
9. You will follow our [Promotions Guidelines](#) and all applicable laws if you publicize or offer any contest, giveaway, or sweepstakes ("promotion") on Facebook.
10. You will not use Facebook to do anything unlawful, misleading, malicious, or discriminatory.
11. You will not do anything that could disable, overburden, or impair the proper working or appearance of Facebook, such as a denial of service attack or interference with page rendering or other Facebook functionality.
12. You will not facilitate or encourage any violations of this Statement or our policies.

4. Registration and Account Security

Facebook users provide their real names and information, and we need your help to keep it that way. Here are some commitments you make to us relating to registering and maintaining the security of your account:

1. You will not provide any false personal information on Facebook, or create an account for anyone other than yourself without permission.
2. You will not create more than one personal account.
3. If we disable your account, you will not create another one without our permission.
4. You will not use your personal timeline for your own commercial gain (such as selling

- your status update to an advertiser).
5. You will not use Facebook if you are under 13.
 6. You will not use Facebook if you are a convicted sex offender.
 7. You will keep your contact information accurate and up-to-date.
 8. You will not share your password (or in the case of developers, your secret key), let anyone else access your account, or do anything else that might jeopardize the security of your account.
 9. You will not transfer your account (including any Page or application you administer) to anyone without first getting our written permission.
 10. If you select a username or similar identifier for your account or Page, we reserve the right to remove or reclaim it if we believe it is appropriate (such as when a trademark owner complains about a username that does not closely relate to a user's actual name).

5. Protecting Other People's Rights

We respect other people's rights, and expect you to do the same.

1. You will not post content or take any action on Facebook that infringes or violates someone else's rights or otherwise violates the law.
2. We can remove any content or information you post on Facebook if we believe that it violates this Statement or our policies.
3. We provide you with tools to help you protect your intellectual property rights. To learn more, visit our [How to Report Claims of Intellectual Property Infringement](#) page.
4. If we remove your content for infringing someone else's copyright, and you believe we removed it by mistake, we will provide you with an opportunity to appeal.
5. If you repeatedly infringe other people's intellectual property rights, we will disable your account when appropriate.
6. You will not use our copyrights or trademarks (including Facebook, the Facebook and F Logos, FB, Face, Poke, Book and Wall), or any confusingly similar marks, except as expressly permitted by our Brand Usage Guidelines or with our prior written permission.
7. If you collect information from users, you will: obtain their consent, make it clear you (and not Facebook) are the one collecting their information, and post a privacy policy explaining what information you collect and how you will use it.
8. You will not post anyone's identification documents or sensitive financial information on Facebook.
9. You will not tag users or send email invitations to non-users without their consent. Facebook offers social reporting tools to enable users to provide feedback about tagging.

6. Mobile and Other Devices

1. We currently provide our mobile services for free, but please be aware that your carrier's normal rates and fees, such as text messaging fees, will still apply.
2. In the event you change or deactivate your mobile telephone number, you will update your account information on Facebook within 48 hours to ensure that your messages are not sent to the person who acquires your old number.

3. You provide consent and all rights necessary to enable users to sync (including through an application) their devices with any information that is visible to them on Facebook.

7. Payments

If you make a payment on Facebook or use Facebook Credits, you agree to our [Payments Terms](#).

8. Special Provisions Applicable to Social Plugins

If you include our Social Plugins, such as the Share or Like buttons on your website, the following additional terms apply to you:

1. We give you permission to use Facebook's Social Plugins so that users can post links or content from your website on Facebook.
2. You give us permission to use and allow others to use such links and content on Facebook.
3. You will not place a Social Plugin on any page containing content that would violate this Statement if posted on Facebook.

9. Special Provisions Applicable to Developers/Operators of Applications and Websites

If you are a developer or operator of a Platform application or website, the following additional terms apply to you:

1. You are responsible for your application and its content and all uses you make of Platform. This includes ensuring your application or use of Platform meets our [Facebook Platform Policies](#) and our [Advertising Guidelines](#).
2. Your access to and use of data you receive from Facebook, will be limited as follows:
 1. You will only request data you need to operate your application.
 2. You will have a privacy policy that tells users what user data you are going to use and how you will use, display, share, or transfer that data and you will include your privacy policy URL in the [Developer Application](#).
 3. You will not use, display, share, or transfer a user's data in a manner inconsistent with your privacy policy.
 4. You will delete all data you receive from us concerning a user if the user asks you to do so, and will provide a mechanism for users to make such a request.
 5. You will not include data you receive from us concerning a user in any advertising creative.
 6. You will not directly or indirectly transfer any data you receive from us to (or use such data in connection with) any ad network, ad exchange, data broker, or other advertising related toolset, even if a user consents to that transfer or use.
 7. You will not sell user data. If you are acquired by or merge with a third party, you can continue to use user data within your application, but you cannot transfer user data outside of your application.

8. We can require you to delete user data if you use it in a way that we determine is inconsistent with users' expectations.
9. We can limit your access to data.
10. You will comply with all other restrictions contained in our Facebook Platform Policies.
3. You will not give us information that you independently collect from a user or a user's content without that user's consent.
4. You will make it easy for users to remove or disconnect from your application.
5. You will make it easy for users to contact you. We can also share your email address with users and others claiming that you have infringed or otherwise violated their rights.
6. You will provide customer support for your application.
7. You will not show third party ads or web search boxes on www.facebook.com.
8. We give you all rights necessary to use the code, APIs, data, and tools you receive from us.
9. You will not sell, transfer, or sublicense our code, APIs, or tools to anyone.
10. You will not misrepresent your relationship with Facebook to others.
11. You may use the logos we make available to developers or issue a press release or other public statement so long as you follow our Facebook Platform Policies.
12. We can issue a press release describing our relationship with you.
13. You will comply with all applicable laws. In particular you will (if applicable):
 1. have a policy for removing infringing content and terminating repeat infringers that complies with the Digital Millennium Copyright Act.
 2. comply with the Video Privacy Protection Act (VPPA), and obtain any opt-in consent necessary from users so that user data subject to the VPPA may be shared on Facebook. You represent that any disclosure to us will not be incidental to the ordinary course of your business.
14. We do not guarantee that Platform will always be free.
15. You give us all rights necessary to enable your application to work with Facebook, including the right to incorporate content and information you provide to us into streams, timelines, and user action stories.
16. You give us the right to link to or frame your application, and place content, including ads, around your application.
17. We can analyze your application, content, and data for any purpose, including commercial (such as for targeting the delivery of advertisements and indexing content for search).
18. To ensure your application is safe for users, we can audit it.
19. We can create applications that offer similar features and services to, or otherwise compete with, your application.

10. About Advertisements and Other Commercial Content Served or Enhanced by Facebook

Our goal is to deliver ads and commercial content that are valuable to our users and advertisers. In order to help us do that, you agree to the following:

1. You can use your privacy settings to limit how your name and profile picture may be associated with commercial, sponsored, or related content (such as a brand you like)

- served or enhanced by us. You give us permission to use your name and profile picture in connection with that content, subject to the limits you place.
2. We do not give your content or information to advertisers without your consent.
 3. You understand that we may not always identify paid services and communications as such.

11. Special Provisions Applicable to Advertisers

You can target your desired audience by buying ads on Facebook or our publisher network. The following additional terms apply to you if you place an order through our online advertising portal (Order):

1. When you place an Order, you will tell us the type of advertising you want to buy, the amount you want to spend, and your bid. If we accept your Order, we will deliver your ads as inventory becomes available. When serving your ad, we do our best to deliver the ads to the audience you specify, although we cannot guarantee in every instance that your ad will reach its intended target.
2. In instances where we believe doing so will enhance the effectiveness of your advertising campaign, we may broaden the targeting criteria you specify.
3. You will pay for your Orders in accordance with our [Payments Terms](#). The amount you owe will be calculated based on our tracking mechanisms.
4. Your ads will comply with our [Advertising Guidelines](#).
5. We will determine the size, placement, and positioning of your ads.
6. We do not guarantee the activity that your ads will receive, such as the number of clicks your ads will get.
7. We cannot control how clicks are generated on your ads. We have systems that attempt to detect and filter certain click activity, but we are not responsible for click fraud, technological issues, or other potentially invalid click activity that may affect the cost of running ads.
8. You can cancel your Order at any time through our online portal, but it may take up to 24 hours before the ad stops running. You are responsible for paying for all ads that run.
9. Our license to run your ad will end when we have completed your Order. You understand, however, that if users have interacted with your ad, your ad may remain until the users delete it.
10. We can use your ads and related content and information for marketing or promotional purposes.
11. You will not issue any press release or make public statements about your relationship with Facebook without our prior written permission.
12. We may reject or remove any ad for any reason.
13. If you are placing ads on someone else's behalf, you must have permission to place those ads, including the following:
 1. You warrant that you have the legal authority to bind the advertiser to this Statement.
 2. You agree that if the advertiser you represent violates this Statement, we may hold you responsible for that violation.

12. Special Provisions Applicable to Pages

If you create or administer a Page on Facebook, you agree to our [Pages Terms](#).

13. Special Provisions Applicable to Software

1. If you download our software, such as a stand-alone software product or a browser plugin, you agree that from time to time, the software may download upgrades, updates and additional features from us in order to improve, enhance and further develop the software.
2. You will not modify, create derivative works of, decompile or otherwise attempt to extract source code from us, unless you are expressly permitted to do so under an open source license or we give you express written permission.

14. Amendments

1. We can change this Statement if we provide you notice (by posting the change on the [Facebook Site Governance Page](#)) and an opportunity to comment. To get notice of any future changes to this Statement, visit our [Facebook Site Governance Page](#) and "like" the Page.
2. For changes to sections 7, 8, 9, and 11 (sections relating to payments, application developers, website operators, and advertisers), we will give you a minimum of three days notice. For all other changes we will give you a minimum of seven days notice. Comments to proposed changes will be made on the [Facebook Site Governance Page](#).
3. If more than 7,000 users post a substantive comment on a particular proposed change, we will also give you the opportunity to participate in a vote in which you will be provided alternatives. The vote shall be binding on us if more than 30% of all active registered users as of the date of the notice vote.
4. If we make changes to policies referenced in or incorporated by this Statement, we may provide notice on the Site Governance Page.
5. We can make changes for legal or administrative reasons, or to correct an inaccurate statement, upon notice without opportunity to comment.
6. Your continued use of Facebook following changes to our terms constitutes your acceptance of our amended terms.

15. Termination

If you violate the letter or spirit of this Statement, or otherwise create risk or possible legal exposure for us, we can stop providing all or part of Facebook to you. We will notify you by email or at the next time you attempt to access your account. You may also delete your account or disable your application at any time. In all such cases, this Statement shall terminate, but the following provisions will still apply: 2.2, 2.4, 3-5, 8.2, 9.1-9.3, 9.9, 9.10, 9.13, 9.15, 9.18, 10.3, 11.2, 11.5, 11.6, 11.9, 11.12, 11.13, and 15-19.

16. Disputes

1. You will resolve any claim, cause of action or dispute (claim) you have with us arising out of or relating to this Statement or Facebook exclusively in a state or federal court located in Santa Clara County. The laws of the State of California will govern this Statement, as well as any claim that might arise between you and us, without regard to conflict of law provisions. You agree to submit to the personal jurisdiction of the courts located in Santa Clara County, California for the purpose of litigating all such claims.
2. If anyone brings a claim against us related to your actions, content or information on Facebook, you will indemnify and hold us harmless from and against all damages, losses, and expenses of any kind (including reasonable legal fees and costs) related to such claim. Although we provide rules for user conduct, we do not control or direct users' actions on Facebook and are not responsible for the content or information users transmit or share on Facebook. We are not responsible for any offensive, inappropriate, obscene, unlawful or otherwise objectionable content or information you may encounter on Facebook. We are not responsible for the conduct, whether online or offline, or any user of Facebook.
3. WE TRY TO KEEP FACEBOOK UP, BUG-FREE, AND SAFE, BUT YOU USE IT AT YOUR OWN RISK. WE ARE PROVIDING FACEBOOK AS IS WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. WE DO NOT GUARANTEE THAT FACEBOOK WILL ALWAYS BE SAFE, SECURE OR ERROR-FREE OR THAT FACEBOOK WILL ALWAYS FUNCTION WITHOUT DISRUPTIONS, DELAYS OR IMPERFECTIONS. FACEBOOK IS NOT RESPONSIBLE FOR THE ACTIONS, CONTENT, INFORMATION, OR DATA OF THIRD PARTIES, AND YOU RELEASE US, OUR DIRECTORS, OFFICERS, EMPLOYEES, AND AGENTS FROM ANY CLAIMS AND DAMAGES, KNOWN AND UNKNOWN, ARISING OUT OF OR IN ANY WAY CONNECTED WITH ANY CLAIM YOU HAVE AGAINST ANY SUCH THIRD PARTIES. IF YOU ARE A CALIFORNIA RESIDENT, YOU WAIVE CALIFORNIA CIVIL CODE §1542, WHICH SAYS: A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM MUST HAVE MATERIALLY AFFECTED HIS SETTLEMENT WITH THE DEBTOR. WE WILL NOT BE LIABLE TO YOU FOR ANY LOST PROFITS OR OTHER CONSEQUENTIAL, SPECIAL, INDIRECT, OR INCIDENTAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THIS STATEMENT OR FACEBOOK, EVEN IF WE HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. OUR AGGREGATE LIABILITY ARISING OUT OF THIS STATEMENT OR FACEBOOK WILL NOT EXCEED THE GREATER OF ONE HUNDRED DOLLARS (\$100) OR THE AMOUNT YOU HAVE PAID US IN THE PAST TWELVE MONTHS. APPLICABLE LAW MAY NOT ALLOW THE LIMITATION OR EXCLUSION OF LIABILITY OR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION

MAY NOT APPLY TO YOU. IN SUCH CASES, FACEBOOK'S LIABILITY WILL BE LIMITED TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW.

17. Special Provisions Applicable to Users Outside the United States

We strive to create a global community with consistent standards for everyone, but we also strive to respect local laws. The following provisions apply to users and non-users who interact with Facebook outside the United States:

1. You consent to having your personal data transferred to and processed in the United States.
2. If you are located in a country embargoed by the United States, or are on the U.S. Treasury Department's list of Specially Designated Nationals you will not engage in commercial activities on Facebook (such as advertising or payments) or operate a Platform application or website.
3. Certain specific terms that apply only for German users are available [here](#).

18. Definitions

1. By "Facebook" we mean the features and services we make available, including through (a) our website at www.facebook.com and any other Facebook branded or co-branded websites (including sub-domains, international versions, widgets, and mobile versions); (b) our Platform; (c) social plugins such as the Like button, the Share button and other similar offerings and (d) other media, software (such as a toolbar), devices, or networks now existing or later developed.
2. By "Platform" we mean a set of APIs and services (such as content) that enable others, including application developers and website operators, to retrieve data from Facebook or provide data to us.
3. By "information" we mean facts and other information about you, including actions taken by users and non-users who interact with Facebook.
4. By "content" we mean anything you or other users post on Facebook that would not be included in the definition of information.
5. By "data" or "user data" or "user's data" we mean any data, including a user's content or information that you or third parties can retrieve from Facebook or provide to Facebook through Platform.
6. By "post" we mean post on Facebook or otherwise make available by using Facebook.
7. By "use" we mean use, copy, publicly perform or display, distribute, modify, translate, and create derivative works of.
8. By "active registered user" we mean a user who has logged into Facebook at least once in the previous 30 days.
9. By "application" we mean any application or website that uses or accesses Platform, as well as anything else that receives or has received data from us. If you no longer access Platform but have not deleted all data from us, the term application will apply until you delete the data.

19. Other

1. If you are a resident of or have your principal place of business in the US or Canada, this Statement is an agreement between you and Facebook, Inc. Otherwise, this Statement is an agreement between you and Facebook Ireland Limited. References to “us,” “we,” and “our” mean either Facebook, Inc. or Facebook Ireland Limited, as appropriate.
2. This Statement makes up the entire agreement between the parties regarding Facebook, and supersedes any prior agreements.
3. If any portion of this Statement is found to be unenforceable, the remaining portion will remain in full force and effect.
4. If we fail to enforce any of this Statement, it will not be considered a waiver.
5. Any amendment to or waiver of this Statement must be made in writing and signed by us.
6. You will not transfer any of your rights or obligations under this Statement to anyone else without our consent.
7. All of our rights and obligations under this Statement are freely assignable by us in connection with a merger, acquisition, or sale of assets, or by operation of law or otherwise.
8. Nothing in this Statement shall prevent us from complying with the law.
9. This Statement does not confer any third party beneficiary rights.
10. We reserve all rights not expressly granted to you.
11. You will comply with all applicable laws when using or accessing Facebook.

You may also want to review the following documents, which provide additional information about your use of Facebook:

- [Data Use Policy](#): The Data Use Policy contains information to help you understand how we collect and use information.
- [Payment Terms](#): These additional terms apply to all payments made on or through Facebook.
- [Platform Page](#): This page helps you better understand what happens when you add a third-party application or use Facebook Connect, including how they may access and use your data.
- [Facebook Platform Policies](#): These guidelines outline the policies that apply to applications, including Connect sites.
- [Advertising Guidelines](#): These guidelines outline the policies that apply to advertisements placed on Facebook.
- [Promotions Guidelines](#): These guidelines outline the policies that apply if you offer contests, sweepstakes, and other types of promotions on Facebook.
- [Brand Permissions Center](#): These guidelines outline the policies that apply to use of Facebook trademarks, logos and screenshots.
- [How to Report Claims of Intellectual Property Infringement](#)
- [Pages Terms](#): These guidelines apply to your use of Facebook Pages.
- [Community Standards](#): These guidelines outline our expectations regarding the content you post to Facebook and your activity on Facebook.

To access the Statement of Rights and Responsibilities in several different languages, change the

language setting for your Facebook session by clicking on the language link in the left corner of most pages. If the Statement is not available in the language you select, we will default to the English version.

EXHIBIT 23

This agreement was written in English (US). To the extent any translated version of this agreement conflicts with the English version, the English version controls. Please note that Section 17 contains certain changes to the general terms for users outside the United States.

Date of Last Revision: November 15, 2013.

Statement of Rights and Responsibilities

This Statement of Rights and Responsibilities ("Statement," "Terms," or "SRR") derives from the [Facebook Principles](#), and is our terms of service that governs our relationship with users and others who interact with Facebook. By using or accessing Facebook, you agree to this Statement, as updated from time to time in accordance with Section 14 below. Additionally, you will find resources at the end of this document that help you understand how Facebook works.

1. Privacy

Your privacy is very important to us. We designed our [Data Use Policy](#) to make important disclosures about how you can use Facebook to share with others and how we collect and can use your content and information. We encourage you to read the Data Use Policy, and to use it to help you make informed decisions.

2. Sharing Your Content and Information

You own all of the content and information you post on Facebook, and you can control how it is shared through your [privacy](#) and [application settings](#). In addition:

1. For content that is covered by intellectual property rights, like photos and videos (IP content), you specifically give us the following permission, subject to your [privacy](#) and [application settings](#): you grant us a non-exclusive, transferable, sub-licensable, royalty-free, worldwide license to use any IP content that you post on or in connection with Facebook (IP License). This IP License ends when you delete your IP content or your account unless your content has been shared with others, and they have not deleted it.
2. When you delete IP content, it is deleted in a manner similar to emptying the recycle bin on a computer. However, you understand that removed content may persist in backup copies for a reasonable period of time (but will not be available to others).
3. When you use an application, the application may ask for your permission to access your content and information as well as content and information that others have shared with you. We require applications to respect your privacy, and your agreement with that application will control how the application can use, store, and transfer that content and information. (To learn more about Platform, including how you can control what information other people may share with applications, read our [Data Use Policy](#) and [Platform Page](#).)
4. When you publish content or information using the Public setting, it means that you are allowing everyone, including people off of Facebook, to access and use that information, and to associate it with you (i.e., your name and profile picture).
5. We always appreciate your feedback or other suggestions about Facebook, but you understand that we may use them without any obligation to compensate you for them (just as you have no obligation to offer them).

3. Safety

We do our best to keep Facebook safe, but we cannot guarantee it. We need your help to keep Facebook safe, which includes the following commitments by you:

1. You will not post unauthorized commercial communications (such as spam) on Facebook.
2. You will not collect users' content or information, or otherwise access Facebook, using automated means (such as harvesting bots, robots, spiders, or scrapers) without our prior permission.

3. You will not engage in unlawful multi-level marketing, such as a pyramid scheme, on Facebook.
4. You will not upload viruses or other malicious code.
5. You will not solicit login information or access an account belonging to someone else.
6. You will not bully, intimidate, or harass any user.
7. You will not post content that: is hate speech, threatening, or pornographic; incites violence; or contains nudity or graphic or gratuitous violence.
8. You will not develop or operate a third-party application containing alcohol-related, dating or other mature content (including advertisements) without appropriate age-based restrictions.
9. You will follow our [Promotions Guidelines](#) and all applicable laws if you publicize or offer any contest, giveaway, or sweepstakes (“promotion”) on Facebook.
10. You will not use Facebook to do anything unlawful, misleading, malicious, or discriminatory.
11. You will not do anything that could disable, overburden, or impair the proper working or appearance of Facebook, such as a denial of service attack or interference with page rendering or other Facebook functionality.
12. You will not facilitate or encourage any violations of this Statement or our policies.

4. **Registration and Account Security**

Facebook users provide their real names and information, and we need your help to keep it that way. Here are some commitments you make to us relating to registering and maintaining the security of your account:

1. You will not provide any false personal information on Facebook, or create an account for anyone other than yourself without permission.
2. You will not create more than one personal account.
3. If we disable your account, you will not create another one without our permission.
4. You will not use your personal timeline primarily for your own commercial gain, and will use a Facebook Page for such purposes.
5. You will not use Facebook if you are under 13.
6. You will not use Facebook if you are a convicted sex offender.
7. You will keep your contact information accurate and up-to-date.
8. You will not share your password (or in the case of developers, your secret key), let anyone else access your account, or do anything else that might jeopardize the security of your account.
9. You will not transfer your account (including any Page or application you administer) to anyone without first getting our written permission.
10. If you select a username or similar identifier for your account or Page, we reserve the right to remove or reclaim it if we believe it is appropriate (such as when a trademark owner complains about a username that does not closely relate to a user's actual name).

5. **Protecting Other People's Rights**

We respect other people's rights, and expect you to do the same.

1. You will not post content or take any action on Facebook that infringes or violates someone else's rights or otherwise violates the law.
2. We can remove any content or information you post on Facebook if we believe that it violates this Statement or our policies.
3. We provide you with tools to help you protect your intellectual property rights. To learn more, visit our [How to Report Claims of Intellectual Property Infringement](#) page.
4. If we remove your content for infringing someone else's copyright, and you believe we removed it by mistake, we will provide you with an opportunity to appeal.
5. If you repeatedly infringe other people's intellectual property rights, we will disable your account when appropriate.
6. You will not use our copyrights or trademarks (including Facebook, the Facebook and F Logos, FB, Face, Poke, Book and Wall), or any confusingly similar marks, except as expressly permitted by our Brand

Usage Guidelines or with our prior written permission.

7. If you collect information from users, you will: obtain their consent, make it clear you (and not Facebook) are the one collecting their information, and post a privacy policy explaining what information you collect and how you will use it.
8. You will not post anyone's identification documents or sensitive financial information on Facebook.
9. You will not tag users or send email invitations to non-users without their consent. Facebook offers social reporting tools to enable users to provide feedback about tagging.

6. Mobile and Other Devices

1. We currently provide our mobile services for free, but please be aware that your carrier's normal rates and fees, such as text messaging and data charges, will still apply.
2. In the event you change or deactivate your mobile telephone number, you will update your account information on Facebook within 48 hours to ensure that your messages are not sent to the person who acquires your old number.
3. You provide consent and all rights necessary to enable users to sync (including through an application) their devices with any information that is visible to them on Facebook.

7. Payments

If you make a payment on Facebook or use Facebook Credits, you agree to our [Payments Terms](#).

8. Special Provisions Applicable to Social Plugins

If you include our Social Plugins, such as the Share or Like buttons on your website, the following additional terms apply to you:

1. We give you permission to use Facebook's Social Plugins so that users can post links or content from your website on Facebook.
2. You give us permission to use and allow others to use such links and content on Facebook.
3. You will not place a Social Plugin on any page containing content that would violate this Statement if posted on Facebook.

9. Special Provisions Applicable to Developers/Operators of Applications and Websites

If you are a developer or operator of a Platform application or website, the following additional terms apply to you:

1. You are responsible for your application and its content and all uses you make of Platform. This includes ensuring your application or use of Platform meets our [Facebook Platform Policies](#) and our [Advertising Guidelines](#).
2. Your access to and use of data you receive from Facebook, will be limited as follows:
 1. You will only request data you need to operate your application.
 2. You will have a privacy policy that tells users what user data you are going to use and how you will use, display, share, or transfer that data and you will include your privacy policy URL in the [Developer Application](#).
 3. You will not use, display, share, or transfer a user's data in a manner inconsistent with your privacy policy.
 4. You will delete all data you receive from us concerning a user if the user asks you to do so, and will provide a mechanism for users to make such a request.
 5. You will not include data you receive from us concerning a user in any advertising creative.
 6. You will not directly or indirectly transfer any data you receive from us to (or use such data in

connection with) any ad network, ad exchange, data broker, or other advertising related toolset, even if a user consents to that transfer or use.

7. You will not sell user data. If you are acquired by or merge with a third party, you can continue to use user data within your application, but you cannot transfer user data outside of your application.
8. We can require you to delete user data if you use it in a way that we determine is inconsistent with users' expectations.
9. We can limit your access to data.
10. You will comply with all other restrictions contained in our [Facebook Platform Policies](#).
3. You will not give us information that you independently collect from a user or a user's content without that user's consent.
4. You will make it easy for users to remove or disconnect from your application.
5. You will make it easy for users to contact you. We can also share your email address with users and others claiming that you have infringed or otherwise violated their rights.
6. You will provide customer support for your application.
7. You will not show third party ads or web search boxes on www.facebook.com.
8. We give you all rights necessary to use the code, APIs, data, and tools you receive from us.
9. You will not sell, transfer, or sublicense our code, APIs, or tools to anyone.
10. You will not misrepresent your relationship with Facebook to others.
11. You may use the logos we make available to developers or issue a press release or other public statement so long as you follow our [Facebook Platform Policies](#).
12. We can issue a press release describing our relationship with you.
13. You will comply with all applicable laws. In particular you will (if applicable):
 1. have a policy for removing infringing content and terminating repeat infringers that complies with the Digital Millennium Copyright Act.
 2. comply with the Video Privacy Protection Act (VPPA), and obtain any opt-in consent necessary from users so that user data subject to the VPPA may be shared on Facebook. You represent that any disclosure to us will not be incidental to the ordinary course of your business.
14. We do not guarantee that Platform will always be free.
15. You give us all rights necessary to enable your application to work with Facebook, including the right to incorporate content and information you provide to us into streams, timelines, and user action stories.
16. You give us the right to link to or frame your application, and place content, including ads, around your application.
17. We can analyze your application, content, and data for any purpose, including commercial (such as for targeting the delivery of advertisements and indexing content for search).
18. To ensure your application is safe for users, we can audit it.
19. We can create applications that offer similar features and services to, or otherwise compete with, your application.

10. **About Advertisements and Other Commercial Content Served or Enhanced by Facebook**

Our goal is to deliver advertising and other commercial or sponsored content that is valuable to our users and advertisers. In order to help us do that, you agree to the following:

1. You give us permission to use your name, profile picture, content, and information in connection with commercial, sponsored, or related content (such as a brand you like) served or enhanced by us. This means, for example, that you permit a business or other entity to pay us to display your name and/or profile picture with your content or information, without any compensation to you. If you have selected a specific audience for your content or information, we will respect your choice when we use it.
2. We do not give your content or information to advertisers without your consent.
3. You understand that we may not always identify paid services and communications as such.

11. Special Provisions Applicable to Advertisers

You can target your desired audience by buying ads on Facebook or our publisher network. The following additional terms apply to you if you place an order through our online advertising portal (Order):

1. When you place an Order, you will tell us the type of advertising you want to buy, the amount you want to spend, and your bid. If we accept your Order, we will deliver your ads as inventory becomes available. When serving your ad, we do our best to deliver the ads to the audience you specify, although we cannot guarantee in every instance that your ad will reach its intended target.
2. In instances where we believe doing so will enhance the effectiveness of your advertising campaign, we may broaden the targeting criteria you specify.
3. You will pay for your Orders in accordance with our [Payments Terms](#). The amount you owe will be calculated based on our tracking mechanisms.
4. Your ads will comply with our [Advertising Guidelines](#).
5. We will determine the size, placement, and positioning of your ads.
6. We do not guarantee the activity that your ads will receive, such as the number of clicks your ads will get.
7. We cannot control how clicks are generated on your ads. We have systems that attempt to detect and filter certain click activity, but we are not responsible for click fraud, technological issues, or other potentially invalid click activity that may affect the cost of running ads.
8. You can cancel your Order at any time through our online portal, but it may take up to 24 hours before the ad stops running. You are responsible for paying for all ads that run.
9. Our license to run your ad will end when we have completed your Order. You understand, however, that if users have interacted with your ad, your ad may remain until the users delete it.
10. We can use your ads and related content and information for marketing or promotional purposes.
11. You will not issue any press release or make public statements about your relationship with Facebook without our prior written permission.
12. We may reject or remove any ad for any reason.
13. If you are placing ads on someone else's behalf, you must have permission to place those ads, including the following:
 1. You warrant that you have the legal authority to bind the advertiser to this Statement.
 2. You agree that if the advertiser you represent violates this Statement, we may hold you responsible for that violation.

12. Special Provisions Applicable to Pages

If you create or administer a Page on Facebook, or run a promotion or an offer from your Page, you agree to our [Pages Terms](#).

13. Special Provisions Applicable to Software

1. If you download or use our software, such as a stand-alone software product, an app, or a browser plugin, you agree that from time to time, the software may download and install upgrades, updates and additional features from us in order to improve, enhance, and further develop the software.
2. You will not modify, create derivative works of, decompile, or otherwise attempt to extract source code from us, unless you are expressly permitted to do so under an open source license, or we give you express written permission.

14. Amendments

1. Unless we make a change for legal or administrative reasons, or to correct an inaccurate statement, we will provide you with seven (7) days notice (for example, by posting the change on the [Facebook Site Governance Page](#)) and an opportunity to comment on changes to this Statement. You can also visit our

Facebook Site Governance Page and "like" the Page to get updates about changes to this Statement.

2. If we make changes to policies referenced in or incorporated by this Statement, we may provide notice on the Site Governance Page.
3. Your continued use of Facebook following changes to our terms constitutes your acceptance of our amended terms.

15. Termination

If you violate the letter or spirit of this Statement, or otherwise create risk or possible legal exposure for us, we can stop providing all or part of Facebook to you. We will notify you by email or at the next time you attempt to access your account. You may also delete your account or disable your application at any time. In all such cases, this Statement shall terminate, but the following provisions will still apply: 2.2, 2.4, 3-5, 8.2, 9.1-9.3, 9.9, 9.10, 9.13, 9.15, 9.18, 10.3, 11.2, 11.5, 11.6, 11.9, 11.12, 11.13, and 15-19.

16. Disputes

1. You will resolve any claim, cause of action or dispute (claim) you have with us arising out of or relating to this Statement or Facebook exclusively in the U.S. District Court for the Northern District of California or a state court located in San Mateo County, and you agree to submit to the personal jurisdiction of such courts for the purpose of litigating all such claims. The laws of the State of California will govern this Statement, as well as any claim that might arise between you and us, without regard to conflict of law provisions.
2. If anyone brings a claim against us related to your actions, content or information on Facebook, you will indemnify and hold us harmless from and against all damages, losses, and expenses of any kind (including reasonable legal fees and costs) related to such claim. Although we provide rules for user conduct, we do not control or direct users' actions on Facebook and are not responsible for the content or information users transmit or share on Facebook. We are not responsible for any offensive, inappropriate, obscene, unlawful or otherwise objectionable content or information you may encounter on Facebook. We are not responsible for the conduct, whether online or offline, or any user of Facebook.
3. WE TRY TO KEEP FACEBOOK UP, BUG-FREE, AND SAFE, BUT YOU USE IT AT YOUR OWN RISK. WE ARE PROVIDING FACEBOOK AS IS WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. WE DO NOT GUARANTEE THAT FACEBOOK WILL ALWAYS BE SAFE, SECURE OR ERROR-FREE OR THAT FACEBOOK WILL ALWAYS FUNCTION WITHOUT DISRUPTIONS, DELAYS OR IMPERFECTIONS. FACEBOOK IS NOT RESPONSIBLE FOR THE ACTIONS, CONTENT, INFORMATION, OR DATA OF THIRD PARTIES, AND YOU RELEASE US, OUR DIRECTORS, OFFICERS, EMPLOYEES, AND AGENTS FROM ANY CLAIMS AND DAMAGES, KNOWN AND UNKNOWN, ARISING OUT OF OR IN ANY WAY CONNECTED WITH ANY CLAIM YOU HAVE AGAINST ANY SUCH THIRD PARTIES. IF YOU ARE A CALIFORNIA RESIDENT, YOU WAIVE CALIFORNIA CIVIL CODE §1542, WHICH SAYS: A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM MUST HAVE MATERIALLY AFFECTED HIS SETTLEMENT WITH THE DEBTOR. WE WILL NOT BE LIABLE TO YOU FOR ANY LOST PROFITS OR OTHER CONSEQUENTIAL, SPECIAL, INDIRECT, OR INCIDENTAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THIS STATEMENT OR FACEBOOK, EVEN IF WE HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. OUR AGGREGATE LIABILITY ARISING OUT OF THIS STATEMENT OR FACEBOOK WILL NOT EXCEED THE GREATER OF ONE HUNDRED DOLLARS (\$100) OR THE AMOUNT YOU HAVE PAID US IN THE PAST TWELVE MONTHS. APPLICABLE LAW MAY NOT ALLOW THE LIMITATION OR EXCLUSION OF LIABILITY OR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. IN

SUCH CASES, FACEBOOK'S LIABILITY WILL BE LIMITED TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW.

17. Special Provisions Applicable to Users Outside the United States

We strive to create a global community with consistent standards for everyone, but we also strive to respect local laws. The following provisions apply to users and non-users who interact with Facebook outside the United States:

1. You consent to having your personal data transferred to and processed in the United States.
2. If you are located in a country embargoed by the United States, or are on the U.S. Treasury Department's list of Specially Designated Nationals you will not engage in commercial activities on Facebook (such as advertising or payments) or operate a Platform application or website. You will not use Facebook if you are prohibited from receiving products, services, or software originating from the United States.
3. Certain specific terms that apply only for German users are available [here](#).

18. Definitions

1. By "Facebook" we mean the features and services we make available, including through (a) our website at www.facebook.com and any other Facebook branded or co-branded websites (including sub-domains, international versions, widgets, and mobile versions); (b) our Platform; (c) social plugins such as the Like button, the Share button and other similar offerings and (d) other media, software (such as a toolbar), devices, or networks now existing or later developed.
2. By "Platform" we mean a set of APIs and services (such as content) that enable others, including application developers and website operators, to retrieve data from Facebook or provide data to us.
3. By "information" we mean facts and other information about you, including actions taken by users and non-users who interact with Facebook.
4. By "content" we mean anything you or other users post on Facebook that would not be included in the definition of information.
5. By "data" or "user data" or "user's data" we mean any data, including a user's content or information that you or third parties can retrieve from Facebook or provide to Facebook through Platform.
6. By "post" we mean post on Facebook or otherwise make available by using Facebook.
7. By "use" we mean use, run, copy, publicly perform or display, distribute, modify, translate, and create derivative works of.
8. By "active registered user" we mean a user who has logged into Facebook at least once in the previous 30 days.
9. By "application" we mean any application or website that uses or accesses Platform, as well as anything else that receives or has received data from us. If you no longer access Platform but have not deleted all data from us, the term application will apply until you delete the data.

19. Other

1. If you are a resident of or have your principal place of business in the US or Canada, this Statement is an agreement between you and Facebook, Inc. Otherwise, this Statement is an agreement between you and Facebook Ireland Limited. References to "us," "we," and "our" mean either Facebook, Inc. or Facebook Ireland Limited, as appropriate.
2. This Statement makes up the entire agreement between the parties regarding Facebook, and supersedes any prior agreements.
3. If any portion of this Statement is found to be unenforceable, the remaining portion will remain in full force and effect.
4. If we fail to enforce any of this Statement, it will not be considered a waiver.
5. Any amendment to or waiver of this Statement must be made in writing and signed by us.
6. You will not transfer any of your rights or obligations under this Statement to anyone else without our

consent.

7. All of our rights and obligations under this Statement are freely assignable by us in connection with a merger, acquisition, or sale of assets, or by operation of law or otherwise.
8. Nothing in this Statement shall prevent us from complying with the law.
9. This Statement does not confer any third party beneficiary rights.
10. We reserve all rights not expressly granted to you.
11. You will comply with all applicable laws when using or accessing Facebook.

You may also want to review the following documents, which provide additional information about your use of Facebook:

- [Data Use Policy](#): The Data Use Policy contains information to help you understand how we collect and use information.
- [Payment Terms](#): These additional terms apply to all payments made on or through Facebook.
- [Platform Page](#): This page helps you better understand what happens when you add a third-party application or use Facebook Connect, including how they may access and use your data.
- [Facebook Platform Policies](#): These guidelines outline the policies that apply to applications, including Connect sites.
- [Advertising Guidelines](#): These guidelines outline the policies that apply to advertisements placed on Facebook.
- [Promotions Guidelines](#): These guidelines outline the policies that apply if you offer contests, sweepstakes, and other types of promotions on Facebook.
- [Facebook Brand Resources](#): These guidelines outline the policies that apply to use of Facebook trademarks, logos and screenshots.
- [How to Report Claims of Intellectual Property Infringement](#)
- [Pages Terms](#): These guidelines apply to your use of Facebook Pages.
- [Community Standards](#): These guidelines outline our expectations regarding the content you post to Facebook and your activity on Facebook.

To access the Statement of Rights and Responsibilities in several different languages, change the language setting for your Facebook session by clicking on the language link in the left corner of most pages. If the Statement is not available in the language you select, we will default to the English version.

EXHIBIT 24

Data Use Policy

Date of Last Revision: September 7, 2011

Information we receive and how it is used

- > Information we receive about you
- > Public information
- > Usernames and User IDs
- < How we use the information we receive
- < Deleting and deactivating your account

Sharing and finding you on Facebook

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- < Controlling what is shared when the people you share with use applications
- < Logging in to another site using Facebook
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How advertising works

- < Personalized ads
- < Ads + social context
- < Sponsored stories
- > Featured content

Minors and Safety

Some other things you need to know

I. Information we receive and how it is used

Information we receive about you

We receive a number of different types of information about you, including:

Your information

Your information is the information that's required when you sign up for the site, as well as the information you choose to share.

- > **Registration information:** When you sign up for Facebook, you are required to provide your name, email address, birthday, and gender.
- < **Information you choose to share:** Your information also includes the information you choose to share on Facebook, such as when you post a status update, upload a photo, or comment on a friend's post.

It also includes the information you choose to share when you take an action, such as when you add a friend, like a Page or a website, tag a place in your post, find friends using our contact importers, or indicate you are in a relationship.

- ❖ Your name, profile picture, networks, username and User ID are treated just like information you choose to make public.
- ❖ Your birthday allows us to do things like show you age-appropriate content and advertisements.

Information others share about you

We receive information about you from your friends, such as when they tag you in a photo or at a location, or add you to a group.

We may also receive information about you from the games, applications, and websites you use, but only when you have given them permission. If you have given a game, application, or website permission to post information on your Wall, you can remove it from your "Apps you use" setting.

Other information we receive about you

We also receive other types of information about you:

- > We receive data about you whenever you interact with Facebook, such as when you look at another person's profile, send someone a message, search for a friend or a Page, click on an ad, or purchase Facebook Credits.
- < When you post things like photos or videos on Facebook, we may receive additional related data (or metadata), such as the time, date, and place you took the photo or video.
- < We receive data from the computer, mobile phone or other device you use to access Facebook. This may include your IP address, location, the type of browser you use, or the pages you visit. For example, we may get your GPS location so we can tell you if any of your friends are nearby.
- > We receive data whenever you visit a game, application, or website that uses Facebook Platform or visit a site with a Facebook feature (such as a social plugin). This may include the date and time you visit the site; the web address, or URL, you're on; technical information about the IP address, browser and the operating system you use; and, if you are logged in to Facebook, your User ID.
- > Sometimes we get data from our advertising partners, customers and other third parties that helps us (or them) deliver ads, understand online activity, and generally make Facebook better. For example, an advertiser may tell us how you responded to an ad on Facebook or on another site in order to measure the effectiveness of – and improve the quality of – those ads.

We also put together data from the information we already have about you and your friends. For example, we may put together data about you to determine which friends we should show you in your News Feed or suggest you tag in the photos you post. We may put together your current city with GPS and other location information we have about you to, for example, tell you and your friends about people or events nearby, or offer deals to you that you might be interested in. We may also put together data about you to serve you ads that might be more relevant to you.

- ❖ When we get your GPS location, we put it together with other location information we have about you (like your current city). But we only keep it until it is no longer useful to provide you services.
- ❖ We only provide data to our advertising partners or customers after we have removed your name or any other personally identifying information from it, or have combined it with other people's data in a way that it is no longer associated with you. Similarly, when we receive data about you from our advertising partners or customers, we keep the data for 180 days. After that, we combine the data with other people's data in a way that it is no longer associated with you.

Public information

When we use the phrase "public information" (which we sometimes refer to as "Everyone information"), we mean the information you choose to make public, as well as information that is always publicly available.

Information you choose to make public

Choosing to make your information public is exactly what it sounds like: **anyone**, including people off of Facebook, will be able to see it.

Choosing to make your information public also means that this information:

- › can be associated with you (i.e., your name, profile picture, Facebook profile, User ID, etc.) even off Facebook
- › can show up when someone does a search on Facebook or on a public search engine
- › will be accessible to the games, applications, and websites you and your friends use
- › will be accessible to anyone who uses our APIs such as our Graph API.

⚠ Sometimes you will not be able to select an audience when you post something (like when you write on a Page's wall or comment on a news article that uses our comments plugin). This is because some types of posts are always public posts. As a general rule, you should assume that if you do not see a sharing icon, the information will be publicly available.

⚠ When others share information about you, they can also choose to make it public.

Information that is always publicly available

The types of information listed below are always publicly available, and are treated just like information you decided to make public.

- › **Name:** This helps your friends and family find you. If you are uncomfortable sharing your real name, you can always deactivate or delete your account.
- › **Profile Pictures:** This helps your friends and family recognize you. If you are uncomfortable making your profile picture public, you can always delete it by hovering over your photo and clicking "Change Picture."
- › **Network:** This helps you see whom you will be sharing information with before you choose "Friends and Networks" as a custom audience. If you are uncomfortable making your network public, you can leave the network.
- › **Username and User ID:** These allow you to give out a custom link to your profile or Page, receive email at your Facebook email address, and help make Facebook Platform possible.

Usernames and User IDs

A Username (or Facebook URL) is a custom link to your profile that you can give out to people or post on external websites. If you have selected a username, it will always appear in the URL on your profile page. If you have not selected a username, then the URL on your profile page will contain your User ID, which is what we use to identify your Facebook account.

If someone has your Username or User ID, they can use it to access information about you through the facebook.com website. For example, if someone has your Username, they can type facebook.com/Username into their browser and see your public information as well as anything else you've let them see. Similarly, someone with your Username or User ID can access information about you through our APIs, such as our Graph API. Specifically, they can access your public information, along with your age range, locale (or language) and gender.

If you do not want your information to be accessible through our APIs, you can turn off all Platform applications from your Privacy Settings. If you turn off Platform you will no longer be able to use any games or other applications.

⚠ If you want to see information available about you through our Graph API, just type [https://graph.facebook.com/\[User ID or Username\]?metadata=1](https://graph.facebook.com/[User ID or Username]?metadata=1) into your browser.

⚠ When you sign up for a Facebook email address, you will first have to select a public username. Your email address will include your public username like so: username@facebook.com. You can control who can send you messages using your "How You Connect" settings.

How we use the information we receive

We use the information we receive about you in connection with the services and features we provide to you and other users like your friends, the advertisers that purchase ads on the site, and the developers that build the games, applications, and websites you use. For example, we may use the information we receive about you:

- › as part of our efforts to keep Facebook safe and secure;
- › to provide you with location features and services, like telling you and your friends when something is going on nearby;
- › to measure or understand the effectiveness of ads you and others see;
- › to make suggestions to you and other users on Facebook, such as: suggesting that your friend use our contact importer because you found friends using it, suggesting that another user add you as a friend because the user imported the same email address as you did, or suggesting that your friend tag you in a picture they have uploaded with you in it.

Granting us this permission not only allows us to provide Facebook as it exists today, but it also allows us to provide you with innovative features and services we develop in the future that use the information we receive about you in new ways.

While you are allowing us to use the information we receive about you, you always own all of your information. Your trust is important to us, which is why we don't share information we receive about you with others unless we have:

- › received your permission;
- › given you notice, such as by telling you about it in this policy; or
- › removed your name or any other personally identifying information from it.

⚠ We are able to suggest that your friend tag you in a picture by comparing your friend's pictures to information we've put together from the photos you've been tagged in. You can control whether we suggest that another user tag you in a photo using the "How Tags work" settings.

Deleting and deactivating your account

If you want to stop using your account, you can either **deactivate** or **delete** it.

Deactivate

Deactivating your account puts your account on hold. Other users will no longer see your profile, but we do not delete any of your information. Deactivating an account is the same as you telling us not to delete any information because you might want to reactivate your account at some point in the future. You can deactivate your account at:

<https://www.facebook.com/editaccount.php>

Deletion

When you delete an account, it is permanently deleted from Facebook. It typically takes about one month to delete an account, but some information may remain in backup copies and logs for up to 90 days. You should only delete your account if you are sure you never want to reactivate it. You can delete your account at:

https://www.facebook.com/help/contact.php?show_form=delete_account

II. Sharing and finding you on Facebook

Control each time you post

Whenever you post content (like a status update, photo or check-in), you can select a specific audience, or even customize your audience. To do this, simply click on the sharing icon and choose who can see it.

Choose this icon if you want to make something **Public**. Choosing to make something public is exactly what it sounds like. It means that anyone, including people off of Facebook, will be able to see or access it.

☼ Choose this icon if you want to share with your Facebook **Friends**.

☼ Choose this icon if you want to **Customize** your audience. You can also use this to hide your post from specific people.

If you do not make a selection, your information will be shared with the last audience you selected. If you want to change your selection later you can do that too on your profile.

If you tag someone, that person and their friends can see your post no matter what audience you selected. The same is true when you approve a tag someone else adds to your post.

Always think before you post. Just like anything else you post on the web or send in an email, information you share on Facebook can be copied or re-shared by anyone who can see it.

☼ When you comment on or "like" someone else's post, or write on their Wall, that person gets to select the audience.

☼ You can control who can see the Facebook Pages you've "liked" by visiting your profile and clicking "Edit Profile."

☼ Sometimes you will not see a sharing icon when you post something (like when you write on a Page's wall or comment on a news article that uses our comments plugin). This is because some types of posts are always public posts. As a general rule, you should assume that if you do not see a sharing icon, the information will be publicly available.

Control over your profile

Whenever you add things to your profile you can select a specific audience, or even customize your audience. To do this, simply click on the sharing icon and choose who can see it.

Choose this icon if you want to make something **Public**. Choosing to make something public is exactly what it sounds like. It means that anyone, including people off of Facebook, will be able to see or access it.

☼ Choose this icon if you want to share with your Facebook **Friends**.

☼ Choose this icon if you want to **Customize** your audience. You can also use this to hide the item on your profile from specific people.

When you select an audience for your friend list, you are only controlling who can see it on your profile. We call this a profile visibility control. This is because your friend list is always available to the games, applications and websites you use, and your friendships may be visible elsewhere (such as on your friends' profiles or in searches). For example, if you select "Only Me" as the audience for your friend list, but your friend sets her friend list to "Public," anyone will be able to see your connection on your friend's profile.

Similarly, if you choose to hide your gender, it only hides it on your profile. This is because we, just like the applications you and your friends use, need to use your gender to refer to you properly on the site.

When someone tags you in a post (such as a photo, status update or check-in), you can choose whether you want that post to appear on your profile. You can either approve each post individually or approve all posts by your friends. If you approve a post and later change your mind, you can remove it from your profile.

☼ To make it easier for your friends to find you, we allow anyone with your contact information (such as your email address or mobile number), to find you through Facebook search, as well as other tools we provide, such as contact importers.

☼ If you share your contact information (such as your email address or mobile number) with your friends, they may be able to use third party applications to sync that information with other address books, including ones on their mobile phones.

☼ Some things (like your name and profile picture) do not have sharing icons because they are always publicly available. As a general rule, you should assume that if you do not see a sharing icon, the information will be publicly available.

What your friends share about you

Tags

A tag is a link to your profile. For example, if you are tagged in a post (such as a photo or a status update), that post will contain a link to your profile. If someone clicks on the link, they will see your public information and anything else you let them see.

Anyone can tag you in anything. Once you are tagged in a post, you and your friends will be able to see it. For example, your friends may be able to see the post in their News Feed or when they search for you. It may also appear on your profile.

You can choose whether a post you've been tagged in appears on your profile. You can either approve each post individually or approve all posts by your friends. If you approve a post and later change your mind, you can always remove it from your profile.

If you do not want someone to tag you in their posts, we encourage you to reach out to them and give them that feedback. If that does not work, you can block them. This will prevent them from tagging you going forward.

☼ If you are tagged in a private space (such as a message or a group) only the people who can see the private space can see the tag. Similarly, if you are tagged in a comment, only the people who can see the comment can see the tag.

Groups

Your friends can add you to the Groups they are in. You can always leave a Group, which will prevent others from adding you to it again.

About Pages

Facebook Pages are public pages. Companies use Pages to share information about their products. Celebrities use Pages to talk about their latest projects. And communities use pages to discuss topics of interest, everything from baseball to the opera.

Because Pages are public, information you share with a Page is public information. This means, for example, that if you post a comment on a Page, that comment can be used by the Page owner off of Facebook, and anyone can see it.

When you "like" a Page, you create a connection to that Page. That connection is added to your profile and your friends may see it in their News Feeds. You may also receive updates from the Page in your News Feed and your messages. You can remove the Pages you've "liked" from your profile.

Some Pages contain content that comes directly from the Page owner. Page owners can do this through online plugins, such as an iframe, and it works just like the games and other applications you use through Facebook. Because this content comes directly from the Page owner, that Page may be able to collect information about you, just like any website.

III. Sharing with other websites and applications

About Facebook Platform

Facebook Platform (or simply Platform) refers to the way we help you share your information with the games, applications, and websites you and your friends use. Facebook Platform also lets you bring your friends with you, so you can connect with them off of Facebook. In these two ways, Facebook Platform helps you make your experiences on the web more personalized and social.

Remember that these games, applications and websites are created and maintained by other businesses and developers who are not part of Facebook, so you should always make sure

to read their terms of service and privacy policies.

Controlling what information you share with applications

When you go to a game or application, or connect with a website using Facebook Platform, we give the game, application, or website (sometimes referred to as just "Applications" or "Apps") your User ID, as well your friends' User IDs (or your friend list).

Your friend list helps the application make your experience more social because it lets you find your friends on that application. Your User ID helps the application personalize your experience because it can connect your account on that application with your Facebook account, and it can access your public information. This includes the information you choose to make public, as well as information that is always publicly available. If the application needs additional information, it will have to ask you for specific permission.

The "Apps you use" setting lets you control the applications you use. You can see the permissions you have given these applications, as well as the last time an application accessed your information. You can also remove applications you no longer want, or turn off all Platform applications. When you turn all Platform applications off, your User ID is no longer given to applications, even when your friends use those applications. But you will no longer be able to use any games, applications or websites through Facebook.

❖ Applications also get your age range, locale, and gender when you and your friends visit them. Age range (e.g., 18–21) lets applications provide you with age-appropriate content. Locale (e.g., en-US) lets applications know what language you speak. Gender lets applications refer to you correctly. If you do not want applications to receive this information about you, you can turn off all Facebook applications using your Privacy Settings.

❖ Sometimes a game console, mobile phone, or other device might ask for permission to share specific information with the games and applications you use on that device (such as your public information). If you say okay, those applications will not be able to access any other information about you without asking specific permission from you or your friends.

❖ Instant Personalization sites receive your User ID and friend list when you visit them.

Controlling what is shared when the people you share with use applications

Just like when you share information by email or elsewhere on the web, information you share on Facebook can be re-shared. This means that if you share something on Facebook, anyone who can see it can share it with others, including the games, applications, and websites they use.

Your friends and the other people you share information with often want to share your information with applications to make their experiences on those application more personalized and social. For example, one of your friends might want to use a music application that allows them to see what their friends are listening to. To get the full benefit of that application, your friend would want to give the application her friend list – which includes your User ID – so the application knows which of her friends is also using it. Your friend might also want to share the music you "like" on Facebook. If you have made that information public, then the application can access it just like anyone else. But if you've shared your likes with just your friends, the application could ask your friend for permission to share them.

You can control most of the information other people can share with applications from the "Apps and Websites" settings page. But these controls do not let you limit access to your public information and friend list.

If you want to completely block applications from getting your information, you will need to turn off all Platform applications. This means that you will no longer be able to use any games, applications or websites.

❖ If an application asks permission from someone else to access your information, the application will be allowed to use that information only in connection with the person that gave the permission and no one else.

Logging in to another site using Facebook

Facebook Platform also lets you log into other applications and websites using your Facebook account. When you log in using Facebook, we give the site your User ID, but we do not share your email address or password with that website.

If you already have an account on that website, the site may also be able to connect that account with your Facebook account. Sometimes it does this using what is called an "email hash", which is similar to searching for someone on Facebook using an email address. Only the email addresses in this case are encrypted so no email addresses are actually shared between Facebook and the website.

How it works

The website sends over an encrypted version of your email address, and we match it with a database of email addresses that we have also encrypted. If there is a match, then we tell the website the User ID associated with the email address. This way, when you log into the website using Facebook, the website can link your Facebook account to your account on that website.

About social plugins

Social plugins are buttons, boxes, and stories (such as the Like button) that other websites can use to present Facebook content to you and create more social and personal experiences for you. While you view these buttons, boxes, and stories on other sites, the content comes directly from Facebook.

If you make something public using a plugin, such as posting a public comment on a newspaper's website, then that website can access your comment (along with your User ID) just like everyone else.

❖ Websites that use social plugins can sometimes tell that you have engaged with the social plugin. For example, they may know that you clicked on a Like button in a social plugin.

❖ We receive data when you visit a site with a social plugin. We keep this data for 90 days. After that, we remove your name or any other personally identifying information from the data, or combine it with other people's data in a way that it is no longer associated with you.

About instant personalization

Instant personalization is a way for Facebook to help partner sites (such as Bing and Rotten Tomatoes) create a more personalized and social experience than a social plugin can offer. When you visit a site using instant personalization, it will know some information about you and your friends the moment you arrive. This is because instant personalization sites can access your User ID, your friend list, and your public information.

The first time you visit an instant personalization site, you will see a notification letting you know that the site has partnered with Facebook to provide a personalized experience.

The notification will give you the ability to disable or turn off instant personalization for that site. If you do that, that site is required to delete all of the information about you it received from Facebook. In addition, we will prevent that site from accessing your information in the future, even when your friends use that site.

If you decide that you do not want to experience instant personalization for all partner sites, you can disable instant personalization from the "Apps and Websites" settings page.

If you turn off instant personalization, partner sites will not be able to access your public information, even when your friends visit those sites.

❖ If you turn off an instant personalization site after you have been using it or visited it a few times (or after you have given it specific permission to access your data), it will not automatically delete your data. But the site is contractually required to delete your data if you ask it to.

How it works

To join the instant personalization program, a potential partner must enter into an agreement with us designed to protect your privacy. For example, this agreement requires that the partner delete your data if you turn off instant personalization when you first visit the site. It also prevents the partner from accessing any information about you until you or your

friends visit its site.

Instant personalization partners sometimes use an email hash process to see if any of their users are on Facebook and get those users' User IDs. This process is similar to searching for someone on Facebook using an email address, except in this case the email addresses are encrypted so no actual email addresses are exchanged. The partner is also contractually required not to use your User ID for any purpose (other than associating it with your account) until you or your friends visit the site.

When you visit an instant personalization site, we provide the site with your User ID and your friend list (as well as your age range, locale, and gender). The site can then connect your account on that site with your friends' accounts to make the site instantly social. The site can also access public information associated with any of the User IDs it receives, which it can use to make the site instantly personalized. For example, if the site is a music site, it can access your music interests to suggest songs you may like, and access your friends' music interests to let you know what they are listening to. Of course it can only access you or your friends' music interests if they are public. If the site wants any additional information, it will have to get your specific permission.

Public search engines

Your Public Search setting controls whether people who enter your name on a public search engine may see your public profile (including in sponsored results). You can find your Public Search setting on the "Apps and Websites" settings page. You can preview your public profile at: [http://www.facebook.com/\[Your Username or UserID\]?p](http://www.facebook.com/[Your Username or UserID]?p)

❖ This setting does not apply to search engines that access your information as an application using Facebook Platform.

❖ If you turn your public search setting off and then search for yourself on a public search engine, you may still see a preview of your profile. This is because some search engines cache information for a period of time. You can learn more about how to request a search engine to remove you from cached information at: <https://www.facebook.com/help/?faq=13323>

IV. How Advertising Works

Personalized ads

We do not share any of your information with advertisers (unless, of course, you give us permission).

When an advertiser creates an ad on Facebook, they are given the opportunity to choose their audience by location, demographics, likes, keywords, and any other information we receive or can tell about you and other users. For example, an advertiser can choose to target 18 to 35 year-old women who live in the United States and like basketball.

Try this tool yourself to see one of the ways advertisers target ads and what information they see at: <https://www.facebook.com/ads/create/>

If the advertiser chooses to run the ad (also known as placing the order), we serve the ad to people who meet the criteria the advertiser selected, but we do not tell the advertiser who any of those people are. So, for example, if a person clicks on the ad, the advertiser might infer that the person is an 18-to-35-year-old woman who lives in the US and likes basketball. But we would not tell the advertiser who that person is.

After the ad runs, we provide advertisers with reports on how their ads performed. For example we give advertisers reports telling them how many users saw or clicked on their ads. But these reports are anonymous. We do not tell advertisers who saw or clicked on their ads.

❖ Advertisers sometimes place cookies on your computer in order to make their ads more effective. Learn more at: http://www.networkadvertising.org/managing/opt_out.asp

❖ Sometimes we allow advertisers to target a category of user, like a "moviegoer" or a "sci-fi fan." We do this by bundling characteristics that we believe are related to the category. For example, if a person "likes" the "Star Trek" Page and mentions "Star Wars" when they check into a movie theater, we may conclude that this person is likely to be a sci-fi fan.

Ads + social context

Facebook Ads are sometimes paired with social actions your friends have taken. For example, an ad for a sushi restaurant may be paired with a news story that one of your friends likes that restaurant's Facebook page.

This is the same type of news story that could show up in your News Feed, only we place it next to a paid advertisement to make that ad more relevant and interesting.

When you show up in one of these news stories, we will only pair it with ads shown to your friends. If you do not want to appear in stories paired with Facebook Ads, you can opt out using your "Edit social ads" setting.

❖ Learn what happens when you click "Like" on an advertisement or an advertiser's Facebook Page at: <https://www.facebook.com/help/?faq=19399>

❖ We may serve ads with social context (or serve just social context) on other sites. These work just like the ads we serve on Facebook – the advertisers do not receive any of your information.

❖ We sometimes allow businesses or anyone else to sponsor stories like the ones that show up in your News Feed, subject to the audience set for that story. While these are sponsored, they are different from ads because they don't contain a message from the person that sponsored them. Your friends will see these stories even if you have opted out of the "Show my social actions in Facebook Ads" setting

❖ Your "Show my social actions in Facebook Ads" setting does not control ads about Facebook's services and features.

❖ Games, applications and websites can serve ads directly to you if they have your User ID.

Sponsored stories

Many of the things you do on Facebook (like "liking" a Page) are posted to your Wall and shared in News Feed. But there's a lot to read in News Feed. That's why we allow people to "sponsor" your stories to make sure your friends see them. For example, if you RSVP to an event hosted by a local restaurant, that restaurant may want to make sure your friends see it so they can come too. If they do sponsor a story, that story will appear in the same place ads usually do under the heading "Sponsored Stories" or something similar. Only people that could originally see the story can see the sponsored story, and no personal information about you (or your friends) is shared with the sponsor.

Featured content

We like to tell you about some of the features your friends use on Facebook to help you have a better experience. For example, if your friend uses our friend finder tool to find more friends on Facebook, we may tell you about it to encourage you to use it as well. This of course means your friend may similarly see suggestions based on the things you do. But we will try to only show it to friends that could benefit from your experience.

V. Minors and safety

We take safety issues very seriously, especially with children, and we encourage parents to teach their children about safe internet practices. To learn more, visit our Safety Center.

To protect minors, we may put special safeguards in place (such as placing restrictions on the ability of adults to share and connect with them), recognizing this may provide minors a more limited experience on Facebook.

VI. Some other things you need to know

Safe harbor

Facebook complies with the EU Safe Harbor framework as set forth by the Department of Commerce regarding the collection, use, and retention of data from the European Union. As part of our participation in the Safe Harbor, we agree to resolve all disputes you have with us in connection with our policies and practices through TRUSTe. To view our certification,

visit the U.S. Department of Commerce's Safe Harbor website at: <https://safeharbor.export.gov/list.aspx>

Responding to legal requests and preventing harm

We may share your information in response to a legal request (like a search warrant, court order or subpoena) if we have a good faith belief that the law requires us to do so. This may include responding to legal requests from jurisdictions outside of the United States where we have a good faith belief that the response is required by law in that jurisdiction, affects users in that jurisdiction, and is consistent with internationally recognized standards. We may also share information when we have a good faith belief it is necessary to: detect, prevent and address fraud and other illegal activity; to protect ourselves and you from violations of our Statement of Rights and Responsibilities; and to prevent death or imminent bodily harm.

Access requests

We provide initial responses to access requests within a reasonable period of time, typically within thirty days. You can also download a copy of everything you've put into Facebook by visiting your "Account Settings" and clicking on "Download a copy of your Facebook data".

Notifications and Other Messages

We may send you notifications and other messages using the contact information we have for you, like your email address. You can control most of the notifications you receive, including ones from Pages you like and applications you use, using your "Notifications" settings.

Friend finder

We offer tools to help you upload your friends' contact information so that you can find your friends on Facebook, and invite friends who do not use Facebook to join. If you do not want us to store this information, visit this help page at: https://www.facebook.com/contact_importer/remove_uploads.php

If you give us your password, we will delete it after you upload your friends' contact information.

Invitations

When you invite a friend to join Facebook, we send a message on your behalf using your name, and up to two reminders. We may also include names and pictures of other people your friend might know on Facebook. The invitation will also give your friend the opportunity to opt out of receiving other invitations to join Facebook.

Memorializing accounts

We may memorialize the account of a deceased person. When we memorialize an account we keep the profile on Facebook, but only let friends and family look at pictures or write on the user's Wall in remembrance. You can report a deceased person's profile at: https://www.facebook.com/help/contact.php?show_form=deceased

We also may close an account if we receive a formal request from the person's next of kin.

Cookies

Cookies are small pieces of data that we store on your computer, mobile phone or other device to make Facebook easier to use, make our advertising better, and to protect you (and Facebook). For example, we may use them to know you are logged in to Facebook, to help you use social plugins and share buttons, or to know when you are interacting with our advertising or Platform partners. We may also ask advertisers to serve ads to computers, mobile phones or other devices with a cookie placed by Facebook (although we would not share any other information with that advertiser). Most companies on the web use cookies (or similar technological methods), including our advertising and Platform partners. You can always remove or block cookies (such as by using the settings in your browser), but it may affect your ability to use Facebook. Learn more at: <https://www.facebook.com/help/?page=176591669064814>

Service Providers

We give your information to the people and companies that help us provide the services we offer. For example, we may use outside vendors to help host our website, serve photos and videos, process payments, or provide search results. In some cases we provide the service jointly with another company, such as the Facebook Marketplace. In all of these cases our partners must agree to only use your information consistent with the agreement we enter into with them, as well as this privacy policy.

Security

We do our best to keep your information secure, but we need your help. For more detailed information about staying safe on Facebook, visit the Facebook Security Page.

Change of Control

If the ownership of our business changes, we may transfer your information to the new owner so they can continue to operate the service. But they will still have to honor the commitments we have made in this privacy policy.

Notice of Changes

If we make changes to this Privacy Policy we will notify you by publication here and on the Facebook Site Governance Page. If the changes are material, we will provide you additional, prominent notice as appropriate under the circumstances. You can make sure that you receive notice directly by liking the Facebook Site Governance Page.

Opportunity to comment and vote

Unless we make a change for legal or administrative reasons, or to correct an inaccurate statement, we will give you seven (7) days to provide us with comments on the change. If we receive more than 7000 comments concerning a particular change, we will put the change up for a vote. The vote will be binding on us if more than 30% of all active registered users as of the date of the notice vote.

EXHIBIT 25

Data Use Policy

Date of Last Revision: June 8, 2012

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I. Information we receive and how it is used

Information we receive about you

We receive a number of different types of information about you, including:

Your information

Your information is the information that's required when you sign up for the site, as well as the information you choose to share.

- **Registration information:** When you sign up for Facebook, you are required to provide your name, email address, birthday, and gender.
- **Information you choose to share:** Your information also includes the information you choose to share on Facebook, such as when you post a status update, upload a photo, or comment on a friend's story.

It also includes the information you choose to share when you take an action, such as when you add a friend, like a Page or a website, add a place to your story, find friends using our contact importers, or indicate you are in a relationship.

Your name, profile pictures, cover photos, gender, networks, username and User ID are treated just like information you choose to make public.

Your birthday allows us to do things like show you age-appropriate content and advertisements.

Information others share about you

We receive information about you from your friends and others, such as when they upload your contact information, post a photo of you, tag you in a photo or status update, or at a location, or add you to a group.

When people use Facebook, they may store and share information about you and others that they have, such as when they upload and manage their invites and contacts.

Other information we receive about you

We also receive other types of information about you:

- We receive data about you whenever you interact with Facebook, such as when you look at another person's timeline, send or receive a message, search for a friend or a Page, click on, view or otherwise interact with things, use a Facebook mobile app, or purchase Facebook Credits or make other purchases through Facebook.
- When you post things like photos or videos on Facebook, we may receive additional related data (or metadata), such as the time, date, and place you took the photo or video.
- We receive data from the computer, mobile phone or other device you use to access Facebook, including when multiple users log in from the same device. This may include your IP address and other information about things like your internet service, location, the type (including identifiers) of browser you use, or the pages you visit. For example, we may get your GPS or other location information so we can tell you if any of your friends are nearby.
- We receive data whenever you visit a game, application, or website that uses Facebook Platform or visit a site with a Facebook feature (such as a social plugin), sometimes through cookies. This may include the date and time you visit the site; the web address, or URL, you're on; technical information about the IP address, browser and the operating system you use; and, if you are logged in to Facebook, your User ID.
- Sometimes we get data from our advertising partners, customers and other third parties that helps us (or them) deliver ads, understand online activity, and generally make Facebook better. For example, an advertiser may tell us information about you (like how you responded to an ad on Facebook or on another site) in order to measure the effectiveness of - and improve the quality of - ads.

We also put together data from the information we already have about you and your friends. For example, we may put together data about you to determine which friends we should show you in your News Feed or suggest you tag in the photos you post. We may put together your current city with GPS and other location information we have about you to, for example, tell you and your friends about people or events nearby, or offer deals to you that you might be interested in. We may also put together data about you to serve you ads that might be more relevant to you.

When we get your GPS location, we put it together with other location information we have about you (like your current city). But we only keep it until it is no longer useful to provide you services, like keeping your last GPS coordinates to send you relevant notifications.

We only provide data to our advertising partners or customers after we have removed your name or any other personally identifying information from it, or have combined it with other people's data in a way that it is no longer associated with you.

Public information

When we use the phrase "public information" (which we sometimes refer to as "Everyone information"), we mean the information you choose to make public, as well as information that is always publicly available.

Information you choose to make public

Choosing to make your information public is exactly what it sounds like: **anyone**, including people off of Facebook, will be able to see it.

Choosing to make your information public also means that this information:

- can be associated with you (i.e., your name, profile pictures, cover photos, timeline, User ID, username, etc.) even off Facebook;
- can show up when someone does a search on Facebook or on a public search engine;
- will be accessible to the Facebook-integrated games, applications, and websites you and your friends use; and
- will be accessible to anyone who uses our APIs such as our [Graph API](#).

Sometimes you will not be able to select an audience when you post something (like when you write on a Page's wall or comment on a news article that uses our comments plugin). This is because some types of stories are always public stories. As a general rule, you should assume that if you do not see a [sharing icon](#), the information will be publicly available.

When others share information about you, they can also choose to make it public.

Information that is always publicly available

The types of information listed below are always publicly available, and are treated just like information you decided to make public.

- **Name:** This helps your friends and family find you. If you are uncomfortable sharing your real name, you can always [delete](#) your account.
- **Profile Pictures and Cover Photos:** These help your friends and family recognize you. If you are uncomfortable making any of these photos public, you can always delete it. Unless you delete them, when you add a new profile picture or cover photo, the previous photo will remain public in your profile picture or cover photo album.
- **Network:** This helps you see whom you will be sharing information with before you choose "Friends and Networks" as a custom audience. If you are uncomfortable making your network public, you can [leave the network](#).
- **Gender:** This allows us to refer to you properly.
- **Username and User ID:** These allow you to give out a custom link to your timeline or Page, receive email at your Facebook email address, and help make Facebook Platform possible.

Username and User IDs

A Username (or Facebook URL) is a custom link to your timeline that you can give out to people or post on external websites. Usernames appear in the URL on your timeline. We also use your User ID to identify your Facebook account.

If someone has your Username or User ID, they can use it to access information about you through the facebook.com website. For example, if someone has your Username, they can type facebook.com/Username into their browser and see your public information as well as anything else you've let them see. Similarly, someone with your Username or User ID can access information about you through our APIs, such as our [Graph API](#). Specifically, they can access your public information, along with your age range, language and country.

If you do not want your information to be accessible to Platform applications, you can turn off all Platform applications from your Privacy Settings. If you turn off Platform you will no longer be able to use any games or other applications until you turn Platform back on. For more information about the information that apps receive when you visit them, see [Other websites and applications](#).

If you want to see information available about you through our Graph API, just type [https://graph.facebook.com/\[User ID or Username\]?metadata=1](https://graph.facebook.com/[User ID or Username]?metadata=1) into your browser.

Your Facebook email address includes your public username like so: username@facebook.com. You can control who can start a message thread with you using your “How You Connect” settings. If they include others on that message, the others can reply too.

How we use the information we receive

We use the information we receive about you in connection with the services and features we provide to you and other users like your friends, our partners, the advertisers that purchase ads on the site, and the developers that build the games, applications, and websites you use. For example, we may use the information we receive about you:

- as part of our efforts to keep Facebook products, services and integrations safe and secure;
- to protect Facebook's or others' rights or property;
- to provide you with location features and services, like telling you and your friends when something is going on nearby;
- to measure or understand the effectiveness of ads you and others see, including to deliver relevant ads to you;
- to make suggestions to you and other users on Facebook, such as: suggesting that your friend use our contact importer because you found friends using it, suggesting that another user add you as a friend because the user imported the same email address as you did, or suggesting that your friend tag you in a picture they have uploaded with you in it; and
- for internal operations, including troubleshooting, data analysis, testing, research and service improvement.

Granting us this permission not only allows us to provide Facebook as it exists today, but it also allows us to provide you with innovative features and services we develop in the future that use the information we receive about you in new ways.

While you are allowing us to use the information we receive about you, you always own all of your information. Your trust is important to us, which is why we don't share information we receive about you with others unless we have:

- received your permission;
- given you notice, such as by telling you about it in this policy; or
- removed your name or any other personally identifying information from it.

Of course, for [information others share about you](#), they control how it is shared.

We store data for as long as it is necessary to provide products and services to you and others, including those described above. Typically, information associated with your account will be kept until your account is deleted. For certain categories of data, we may also tell you about specific data retention practices.

We are able to suggest that your friend tag you in a picture by scanning and comparing your friend's pictures to information we've put together from the other photos you've been tagged in. This allows us to make these suggestions. You can control whether we suggest that another user tag you in a photo using the "How Tags work" settings. Learn more at: <https://www.facebook.com/help/tag-suggestions>

Deleting and deactivating your account

If you want to stop using your account, you can either **deactivate** or **delete** it.

Deactivate

Deactivating your account puts your account on hold. Other users will no longer see your timeline, but we do not delete any of your information. Deactivating an account is the same as you telling us not to delete any information because you might want to reactivate your account at some point in the future. You can deactivate your account at:

<https://www.facebook.com/editaccount.php>

Your friends will still see you listed in their list of friends while your account is deactivated.

Deletion

When you delete an account, it is permanently deleted from Facebook. It typically takes about one month to delete an account, but some information may remain in backup copies and logs for up to 90 days. You should only delete your account if you are sure you never want to reactivate it. You can delete your account at:

https://www.facebook.com/help/contact.php?show_form=delete_account

Learn more at: <https://www.facebook.com/help/?faq=356107851084108>

Certain information is needed to provide you with services, so we only delete this information after you delete your account. Some of the things you do on Facebook aren't stored in your account, like posting to a group or sending someone a message (where your friend may still have a message you sent, even after you delete your account). That information remains after you delete your account.

II. Sharing and finding you on Facebook

Control each time you post

Whenever you post content (like a status update, photo or check-in), you can select a specific audience, or even customize your audience. To do this, simply click on the sharing icon and choose who can see it.

Choose this icon if you want to make something **Public**. Choosing to make something public is exactly what it sounds like. It means that anyone, including people off of Facebook, will be able to see or access it.

Choose this icon if you want to share with your Facebook **Friends**.

Choose this icon if you want to **Customize** your audience. You can also use this to hide your story from specific people.

If you tag someone, that person and their friends can see your story no matter what audience you selected. The same is true when you approve a tag someone else adds to your story.

Always think before you post. Just like anything else you post on the web or send in an email, information you share on Facebook can be copied or re-shared by anyone who can see it.

Although you choose with whom you share, there may be ways for others to determine information about you. For example, if you hide your birthday so no one can see it on your timeline, but friends post "happy birthday!" on your timeline, people may determine your birthday.

When you comment on or "like" someone else's story, or write on their timeline, that person gets to select the audience. For example, if a friend posts a Public story and you comment on it, your comment will be Public. Often, you can see the audience someone selected for their story before you post a comment; however, the person who posted the story may later change their audience.

You can control who can see the Facebook Pages you've "liked" by visiting your timeline, clicking on the Likes box on your timeline, and then clicking "Edit."

Sometimes you will not see a sharing icon when you post something (like when you write on a Page's wall or comment on a news article that uses our comments plugin). This is because some types of stories are always public stories. As a general rule, you should assume that if you do not see a sharing icon, the information will be publicly available.

Control over your timeline

Whenever you add things to your timeline you can select a specific audience, or even customize your audience. To do this, simply click on the sharing icon and choose who can see it.

Choose this icon if you want to make something **Public**. Choosing to make something public is exactly what it sounds like. It means that anyone, including people off of Facebook, will be able to see or access it.

Choose this icon if you want to share with your Facebook **Friends**.

Choose this icon if you want to **Customize** your audience. You can also use this to hide the item on your timeline from specific people.

When you select an audience for your friend list, you are only controlling who can see the entire list of your friends on your timeline. We call this a timeline visibility control. This is because your friend list is always available to the games, applications and websites you use, and your friendships may be visible elsewhere (such as on your friends' timelines or in searches). For example, if you select "Only Me" as the audience for your friend list, but your friend sets her friend list to "Public," anyone will be able to see your connection on your friend's timeline.

Similarly, if you choose to hide your gender, it only hides it on your timeline. This is because we, just like the applications you and your friends use, need to use your gender to refer to you properly on the site.

When someone tags you in a story (such as a photo, status update or check-in), you can choose whether you want that story to appear on your timeline. You can either approve each story individually or approve all stories by your friends. If you approve a story and later change your mind, you can remove it from your timeline.

People on Facebook may be able to see mutual friends, even if they cannot see your entire list of friends.

Some things (like your name, profile pictures and cover photos) do not have sharing icons because they are always publicly available. As a general rule, you should assume that if you do not see a sharing icon, the information will be publicly available.

Finding you on Facebook

To make it easier for your friends to find you, we allow anyone with your contact information (such as email address or telephone number) to find you through the Facebook search bar at the top of most pages, as well as other tools we provide, such as contact importers - even if you have not shared your contact information with them on Facebook.

You can choose who can look up your timeline using the email address or telephone number you added to your timeline through your privacy settings. But remember, if you choose Friends, only your current Facebook friends will be able to find you this way.

Your "How You Connect" settings do not control whether people can find you or a link to your timeline when they search for content they have permission to see, like a photo or other story you've been tagged in.

Access on phones and other devices

Once you share information with your friends and others, they may be able to sync it with or access it via their mobile phones and other devices. For example, if you share a photo on Facebook, someone viewing that photo could save it using Facebook tools or by other methods offered by their device or browser. Similarly, if you share your contact information with someone or invite someone to an event, they may be able to use Facebook or third party applications or devices to sync that information. Or, if one of your friends has a Facebook application on one of their devices, your

information (such as the things you post or photos you share) may be stored on or accessed by their device.

You should only share information with people you trust because they will be able to save it or re-share it with others, including when they sync the information to a device.

Activity log

Your activity log is a place where you can go to view most of your information on Facebook, including things you've hidden from your timeline. You can use this log to manage your content. For example, you can do things like delete stories, change the audience of your stories or stop an application from publishing to your timeline on your behalf.

When you hide something from your timeline, you are not deleting it. This means that the story may be visible elsewhere, like in your friends' News Feed. If you want to delete a story you posted, choose the delete option.

What your friends share about you

Links and Tags

Anyone can add a link to a story. Links are references to something on the Internet; anything from a website to a Page or timeline on Facebook. For example, if you are writing a story, you might include a link to a blog you are referencing or a link to the blogger's Facebook timeline. If someone clicks on a link to another person's timeline, they'll only see the things that they are allowed to see.

A tag is a special type of link to someone's timeline that suggests that the tagged person add your story to their timeline. In cases where the tagged person isn't included in the audience of the story, it will add them so they can see it. Anyone can tag you in anything. Once you are tagged, you and your friends will be able to see it (such as in News Feed or in search).

You can choose whether a story you've been tagged in appears on your timeline. You can either approve each story individually or approve all stories by your friends. If you approve a story and later change your mind, you can always remove it from your timeline.

If you do not want someone to tag you, we encourage you to reach out to them and give them that feedback. If that does not work, you can block them. This will prevent them from tagging you going forward.

If you are tagged in a private space (such as a message or a group) only the people who can see the private space can see the tag. Similarly, if you are tagged in a comment, only the people who can see the comment can see the tag.

Groups

Once you are in a Group, anyone in that Group can add you to a subgroup. When someone adds you to a Group, you will be listed as "invited" until you visit the Group. You can always leave a Group, which will prevent others from adding you to it again.

About Pages

Facebook Pages are public pages. Companies use Pages to share information about their products. Celebrities use Pages to talk about their latest projects. And communities use pages to discuss topics of interest, everything from baseball to the opera.

Because Pages are public, information you share with a Page is public information. This means, for example, that if you post a comment on a Page, that comment may be used by the Page owner off Facebook, and anyone can see it.

When you "like" a Page, you create a connection to that Page. The connection is added to your timeline and your friends may see it in their News Feeds. You may be contacted by or receive updates from the Page, such as in your News Feed and your messages. You can remove the Pages you've "liked" through your timeline or on the Page.

Some Pages contain content that comes directly from the Page owner. Page owners can do this through online plugins, such as an iframe, and it works just like the games and other applications you use through Facebook. Because this content comes directly from the Page owner, that Page may be able to collect information about you, just like any website.

Page administrators may have access to insights data, which will tell them generally about the people that visit their Page (as opposed to information about specific people). They may also know when you've made a connection to their Page because you've liked their Page or posted a comment.

III. Other websites and applications

About Facebook Platform

Facebook Platform (or simply Platform) refers to the way we help you share your information with the games, applications, and websites you and your friends use. Facebook Platform also lets you bring your friends with you, so you can connect with them off of Facebook. In these two ways, Facebook Platform helps you make your experiences on the web more personalized and social.

Remember that these games, applications and websites are created and maintained by other businesses and developers who are not part of Facebook, so you should always make sure to read their terms of service and privacy policies.

Controlling what information you share with applications

When you connect with a game, application or website - such as by going to a game, logging in to a website using your Facebook account, or adding an app to your timeline - we give the game, application, or website (sometimes referred to as just "Applications" or "Apps") your basic info, which includes your User ID, as well your friends' User IDs (or your friend list) and your public information.

Your friend list helps the application make your experience more social because it lets you find your friends on that application. Your User ID helps the application personalize your experience because it can connect your account on that application with your Facebook account, and it can access your basic info, which includes your public information and friend list. This includes the information you choose to make public, as well as information that is always publicly available. If the application needs additional information, such as your stories, photos or likes, it will have to ask you for specific permission.

The "Apps you use" setting lets you control the applications you use. You can see the permissions you have given these applications, the last time an application accessed your information, and the audience on Facebook for your timeline stories and activity the application posts on your behalf. You can also remove applications you no longer want, or turn off all Platform applications. When you turn all Platform applications off, your User ID is no longer given to applications, even when your friends use those applications. But you will no longer be able to use any games, applications or websites through Facebook.

When you first visit an app, Facebook lets the app know your language, your country, and whether you are under 18, between 18-20, or 21 and over. Age range lets apps provide you with age-appropriate content. If you install the app, it can access, store and update the information you've shared. Apps you've installed can update their records of your basic info, age range, language and country. If you haven't used an app in a while, it won't be able to continue to update the additional information you've given them permission to access. Learn more at:

<https://www.facebook.com/help/how-apps-work>

Sometimes a game console, mobile phone, or other device might ask for permission to share specific information with the games and applications you use on that device. If you say okay, those applications will not be able to access any other information about you without asking specific permission from you or your friends.

Sites and apps that use Instant Personalization receive your User ID and friend list when you visit them.

You always can remove apps you've installed by using your app settings at: <https://www.facebook.com/settings/?tab=applications>. But remember, apps may still be able to access your information when the people you share with use them. And, if you've removed an application and want them to delete the information you've already shared with them,

you should contact the application and ask them to delete it. Visit the application's page on Facebook or their own website to learn more about the app.

Controlling what is shared when the people you share with use applications

Just like when you share information by email or elsewhere on the web, information you share on Facebook can be re-shared. This means that if you share something on Facebook, anyone who can see it can share it with others, including the games, applications, and websites they use.

Your friends and the other people you share information with often want to share your information with applications to make their experiences on those applications more personalized and social. For example, one of your friends might want to use a music application that allows them to see what their friends are listening to. To get the full benefit of that application, your friend would want to give the application her friend list – which includes your User ID – so the application knows which of her friends is also using it. Your friend might also want to share the music you “like” on Facebook. If you have made that information public, then the application can access it just like anyone else. But if you've shared your likes with just your friends, the application could ask your friend for permission to share them.

You can control most of the information other people can share with applications they use from the “Ads, Apps and Websites” settings page. But these controls do not let you limit access to your public information and friend list.

If you want to completely block applications from getting your information when your friends and others use them, you will need to turn off all Platform applications. This means that you will no longer be able to use any third-party Facebook-integrated games, applications or websites.

If an application asks permission from someone else to access your information, the application will be allowed to use that information only in connection with the person that gave the permission and no one else.

Logging in to another site using Facebook

Facebook Platform lets you log into other applications and websites using your Facebook account. When you log in using Facebook, we give the site your User ID (just like when you connect with any other application), but we do not share your email address or password with that website through this process.

If you already have an account on that website, the site may also be able to connect that account with your Facebook account. Sometimes it does this using what is called an "email hash", which is similar to searching for someone on Facebook using an email address. Only the email addresses in this case are hashed so no email addresses are actually shared between Facebook and the website.

How it works

The website sends over a hashed version of your email address, and we match it with a database of email addresses that we have also hashed. If there is a match, then we tell the website the User ID associated with the email address. This way, when you log into the website using Facebook, the website can link your Facebook account to your account on that website.

About social plugins

Social plugins are buttons, boxes, and stories (such as the Like button) that other websites can use to present Facebook content to you and create more social and personal experiences for you. While you view these buttons, boxes, and stories on other sites, the content comes directly from Facebook.

Sometimes plugins act just like applications. You can spot one of these plugins because it will ask you for permission to access your information or to publish information back to Facebook. For example, if you use a registration plugin on a website, the plugin will ask your permission to share your basic info with the website to make it easier for you to register for the website. Similarly, if you use an Add To Timeline plugin, the plugin will ask your permission to publish stories about your activities on that website to Facebook.

If you make something public using a plugin, such as posting a public comment on a newspaper's website, then that website can access your comment (along with your User ID) just like everyone else.

If you post something using a social plugin and you do not see a sharing icon, you should assume that story is Public. For example, if you post a comment through a Facebook comment plugin on a site, your story is Public and everyone, including the website, can see your story.

Websites that use social plugins can sometimes tell that you have engaged with the social plugin. For example, they may know that you clicked on a Like button in a social plugin.

We receive data when you visit a site with a social plugin. We keep this data for a maximum of 90 days. After that, we remove your name or any other personally identifying information from the data, or combine it with other people's data in a way that it is no longer associated with you. Learn more at: <https://www.facebook.com/help/social-plugins>

About instant personalization

Instant personalization is a way for Facebook to help partners (such as Bing and Rotten Tomatoes) on and off Facebook create a more personalized and social experience for logged in users than a social plugin can offer. When you visit a site or app using instant personalization, it will know some information about you and your friends the moment you arrive. This is because sites and apps using instant personalization can access your User ID, your friend list, and your public information.

The first time you visit a site or app using instant personalization, you will see a notification letting you know that the site or app has partnered with Facebook to provide a personalized experience.

The notification will give you the ability to disable or turn off instant personalization for that site or app. If you do that, that site or app is required to delete all of the information about you it received from Facebook as part of the instant personalization program. In addition, we will prevent that site from accessing your information in the future, even when your friends use that site.

If you decide that you do not want to experience instant personalization for all partner sites and apps, you can disable instant personalization from the “Ads, Apps and Websites” settings page.

If you turn off instant personalization, partner third party sites and apps will not be able to access your public information, even when your friends visit those sites.

If you turn off an instant personalization site or app after you have been using it or visited it a few times (or after you have given it specific permission to access your data), it will not automatically delete your data received through Facebook. But the site is contractually required to delete your data if you ask it to.

How it works

To join the instant personalization program, a potential partner must enter into an agreement with us designed to protect your privacy. For example, this agreement requires that the partner delete your data if you turn off instant personalization when you first visit the site or app. It also prevents the partner from accessing any information about you until you or your friends visit its site.

Instant personalization partners sometimes use an email hash process to see if any of their users are on Facebook and get those users' User IDs. This process is similar to searching for someone on Facebook using an email address, except in this case the email addresses are hashed so no actual email addresses are exchanged. The partner is also contractually required not to use your User ID for any purpose (other than associating it with your account) until you or your friends visit the site.

When you visit a site or app using instant personalization, we provide the site or app with your User ID and your friend list (as well as your age range, locale, and gender). The site or app can then connect your account with that partner with your friends' accounts to make the site or app instantly social. The site can also access public information associated with any of the User IDs it receives, which it can use to make them instantly personalized. For example, if the site is a

music site, it can access your music interests to suggest songs you may like, and access your friends' music interests to let you know what they are listening to. Of course it can only access your or your friends' music interests if they are public. If the site or app wants any additional information, it will have to get your specific permission.

Public search engines

Your public search setting controls whether people who enter your name on a public search engine may see your public timeline (including in sponsored results). You can find your public search setting on the “Ads, Apps and Websites” settings page.

This setting does not apply to search engines that access your information as an application using Facebook Platform. If you turn your public search setting off and then search for yourself on a public search engine, you may still see a preview of your timeline. This is because some search engines cache information for a period of time. You can learn more about how to request a search engine to remove you from cached information at:

<https://www.facebook.com/help/?faq=13323>

IV. How advertising and Sponsored Stories work

Personalized ads

We do not share any of your information with advertisers (unless, of course, you give us permission). As described in this policy, we may share your information when we have removed from it anything that personally identifies you or combined it with other information so that it no longer personally identifies you.

We use the information we receive to deliver ads and to make them more relevant to you. This includes all of the things you share and do on Facebook, such as the Pages you like or key words from your stories, and the things we infer from your use of Facebook. Learn more at: <https://www.facebook.com/help/?page=226611954016283>

When an advertiser creates an ad, they are given the opportunity to choose their audience by location, demographics, likes, keywords, and any other information we receive or can tell about you and other users. For example, an advertiser can choose to target 18 to 35 year-old women who live in the United States and like basketball. An advertiser could also choose to target certain topics or keywords, like “music” or even people who like a particular song or artist.

Try this tool yourself to see one of the ways advertisers target ads and what information they see at:

<https://www.facebook.com/ads/create/>

If the advertiser chooses to run the ad (also known as placing the order), we serve the ad to people who meet the criteria the advertiser selected, but we do not tell the advertiser who any of those people are. So, for example, if a person views or otherwise interacts with the ad, the advertiser might infer that the person is an 18-to-35-year-old woman who lives in the U.S. and likes basketball. But we would not tell the advertiser who that person is.

After the ad runs, we provide advertisers with reports on how their ads performed. For example we give advertisers reports telling them how many users saw or clicked on their ads. But these reports are anonymous. We do not tell advertisers who saw or clicked on their ads.

Advertisers sometimes place cookies on your computer in order to make their ads more effective. Learn more about [cookies, pixels and other system technologies](#).

Sometimes we allow advertisers to target a category of user, like a "moviegoer" or a "sci-fi fan." We do this by bundling characteristics that we believe are related to the category. For example, if a person "likes" the "Star Trek" Page and mentions "Star Wars" when they check into a movie theater, we may conclude that this person is likely to be a sci-fi fan. Advertisers of sci-fi movies, for example, could ask us to target “sci-fi fans” and we would target that group, which may include you. Or if you “like” Pages that are car-related and mention a particular car brand in a post, we might put you in the “potential car buyer” category and let a car brand target to that group, which would include you.

Ads + social context

Facebook Ads are sometimes paired with social actions your friends have taken. For example, an ad for a sushi restaurant may be paired with a news story that one of your friends likes that restaurant's Facebook page.

This is the same type of news story that could show up in your News Feed, only we place it next to a paid advertisement to make that ad more relevant and interesting.

When you show up in one of these news stories, we will only pair it with ads shown to your friends. If you do not want to appear in stories paired with Facebook Ads, you can opt out using your "[Edit social ads](#)" setting.

Learn what happens when you click "Like" on an advertisement or an advertiser's Facebook Page at:

<https://www.facebook.com/help/?faq=19399>

We may serve ads, including those with social context (or serve just social context), on other sites. These work just like the ads we serve on Facebook - the advertisers do not receive any of your information. Only people that could see the Facebook action (like on your timeline) would see it paired in this way.

Your "Show my social actions in Facebook Ads" setting only controls ads with social context. It does not control [Sponsored Stories](#), ads or information about Facebook's services and features, or other [Facebook content](#).

Games, applications and websites can serve ads directly to you or help us serve ads to you or others if they have information like your User ID or email address.

Sponsored stories

Many of the things you do on Facebook (like "liking" a Page) are posted to your timeline and shared in News Feed. But there's a lot to read in News Feed. That's why we allow people to "sponsor" your stories to make sure your friends see them. For example, if you RSVP to an event hosted by a local restaurant, that restaurant may want to make sure your friends see it so they can come too.

If they do sponsor a story, that story will appear in the same place ads usually do or in your News Feed under the heading "Sponsored" or something similar. Only people that could originally see the story can see the sponsored story, and no personal information about you (or your friends) is shared with the sponsor.

Your "Show my social actions in Facebook Ads" setting only controls ads with social context. It does not control [Sponsored Stories](#), ads or information about Facebook's services and features, or other [Facebook content](#).

Facebook content

We like to tell you about some of the features and tools your friends and others use on Facebook, to help you have a better experience. For example, if your friend uses our friend finder tool to find more friends on Facebook, we may tell you about it to encourage you to use it as well. This of course means your friend may similarly see suggestions based on the things you do. But we will try to only show it to friends that could benefit from your experience.

Your "Show my social actions in Facebook Ads" setting only controls ads with social context. It does not control [Sponsored Stories](#), ads or information about Facebook's services and features, or other Facebook content.

V. Cookies, pixels and other similar technologies

Cookies are small pieces of data that are stored on your computer, mobile phone or other device. Pixels are small blocks of code on webpages that do things like allow another server to measure viewing of a webpage and often are used in connection with cookies.

We use technologies like cookies, pixels, and local storage (like on your browser or device, which is similar to a cookie but holds more information) to provide and understand a range of products and services. Learn more at:

<https://www.facebook.com/help/cookies>

We use these technologies to do things like:

- make Facebook easier or faster to use;
- enable features and store information about you (including on your device or in your browser cache) and your use of Facebook;
- deliver, understand and improve advertising;
- monitor and understand the use of our products and services; and
- to protect you, others and Facebook.

For example, we may use them to know you are logged in to Facebook, to help you use social plugins and share buttons, or to know when you are interacting with our advertising or Platform partners.

We may ask advertisers or other partners to serve ads or services to computers, mobile phones or other devices, which may use a cookie, pixel or other similar technology placed by Facebook or the third party (although we would not share any other information that identifies you with an advertiser).

Most companies on the web use cookies (or other similar technological tools), including our advertising and Platform partners. For example, our Platform partners, advertisers or Page administrators may use cookies or similar technologies when you access their apps, ads, Pages or other content.

Cookies and things like local storage help make Facebook work, like allowing pages to load faster because certain content is stored on your browser or by helping us authenticate you to deliver personalized content.

To learn more about how advertisers generally use cookies and the choices advertisers provide, visit the Network Advertising Initiative at http://www.networkadvertising.org/managing/opt_out.asp, the Digital Advertising Alliance at <http://www.aboutads.info/>, the Internet Advertising Bureau (US) at <http://www.iab.net> or the Internet Advertising Bureau (EU) at <http://youronlinechoices.eu/>.

You can remove or block cookies or other similar technologies or block or remove other data stored on your computer or device (such as by using the various settings in your browser), but it may affect your ability to use Facebook or other websites and apps.

VI. Some other things you need to know

Safe harbor

Facebook complies with the EU Safe Harbor framework as set forth by the Department of Commerce regarding the collection, use, and retention of data from the European Union. To view our certification, visit the U.S. Department of Commerce's Safe Harbor website at: <https://safeharbor.export.gov/list.aspx>. As part of our participation in the Safe Harbor program, we agree to resolve disputes you have with us in connection with our policies and practices through TRUSTe. If you would like to contact TRUSTe, visit: <https://feedback-form.truste.com/watchdog/request>

Contact us with questions or disputes

If you have questions or complaints regarding our Data Use Policy or practices, please contact us by mail at 1601 Willow Road, Menlo Park, CA 94025 if you reside in the U.S. or Canada, or at Facebook Ireland Ltd., Hanover Reach, 5-7 Hanover Quay, Dublin 2 Ireland if you live outside the U.S. or Canada. Anyone may also contact us through this help page: https://www.facebook.com/help/contact_us.php?id=173545232710000

Responding to legal requests and preventing harm

We may access, preserve and share your information in response to a legal request (like a search warrant, court order or subpoena) if we have a good faith belief that the law requires us to do so. This may include responding to legal requests from jurisdictions outside of the United States where we have a good faith belief that the response is required by law in that jurisdiction, affects users in that jurisdiction, and is consistent with internationally recognized standards. We may also access, preserve and share information when we have a good faith belief it is necessary to: detect, prevent and address fraud and other illegal activity; to protect ourselves, you and others, including as part of investigations; and to prevent death or imminent bodily harm. Information we receive about you, including financial transaction data related to purchases made with Facebook Credits, may be accessed, processed and retained for an extended period of time when it is the subject of a legal request or obligation, governmental investigation, or investigations concerning possible violations of our terms or policies, or otherwise to prevent harm.

Access requests

You can access and correct most of your personal data stored by Facebook by logging into your account and viewing your timeline and activity log. You can also download a copy of your personal data by visiting your “[Account Settings](#)”, clicking on “Download a copy of your Facebook data” and then clicking on the link for your expanded archive. Learn more at: <https://www.facebook.com/help/?faq=226281544049399>

Notifications and Other Messages

We may send you notifications and other messages using the contact information we have for you, like your email address. You can control most of the notifications you receive, including ones from Pages you like and applications you use, using your “Notifications” settings.

Friend finder

We offer tools to help you upload your friends' contact information so that you and others can find friends on Facebook, and invite friends who do not use Facebook to join. If you do not want us to store this information, visit this help page at: https://www.facebook.com/contact_importer/remove_uploads.php

If you give us your password, we will delete it after you upload your friends' contact information.

Invitations

When you invite a friend to join Facebook, we send a message on your behalf using your name, and up to two reminders. We may also include names and pictures of other people your friend might know on Facebook. The invitation will also give your friend the opportunity to opt out of receiving other invitations to join Facebook.

Memorializing accounts

We may memorialize the account of a deceased person. When we memorialize an account, we keep the timeline on Facebook, but limit access and some features. You can report a deceased person's timeline at: https://www.facebook.com/help/contact.php?show_form=deceased

We also may close an account if we receive a formal request that satisfies certain criteria.

Service Providers

We give your information to the people and companies that help us provide, understand and improve the services we offer. For example, we may use outside vendors to help host our website, serve photos and videos, process payments, analyze data, measure the effectiveness of ads, or provide search results. In some cases we provide the service jointly with another company, such as the Facebook Marketplace. In all of these cases our partners must agree to only use your information consistent with the agreement we enter into with them, as well as this Data Use Policy.

Security and bugs

We do our best to keep your information secure, but we need your help. For more detailed information about staying safe on Facebook, visit the [Facebook Security Page](#). We try to keep Facebook up, bug-free and safe, but can't make guarantees about any part of our services or products.

Change of Control

If the ownership of our business changes, we may transfer your information to the new owner so they can continue to operate the service. But they will still have to honor the commitments we have made in this Data Use Policy.

Notice of Changes

If we make changes to this Data Use Policy we will notify you by publication here and on the [Facebook Site Governance Page](#). If the changes are material, we will provide you additional, prominent notice as appropriate under the circumstances. You can make sure that you receive notice directly by liking the [Facebook Site Governance Page](#).

Opportunity to comment and vote

Unless we make a change for legal or administrative reasons, or to correct an inaccurate statement, we will give you seven (7) days to provide us with comments on the change. If we receive more than 7000 comments concerning a particular change, we will put the change up for a vote. The vote will be binding on us if more than 30% of all active

registered users as of the date of the notice vote.

Information for users outside of the United States and Canada

Company Information: The website under www.facebook.com and the services on these pages are being offered to users outside of the U.S. and Canada by Facebook Ireland Ltd., Hanover Reach, 5-7 Hanover Quay, Dublin 2 Ireland. The company Facebook Ireland Ltd. has been established and registered in Ireland as a private limited company, Company Number: 462932, and is the data controller responsible for your personal information. Directors: Cipora Herman (American), Theodore Ullyot (American).

Your California privacy rights

California law permits residents of California to request certain details about what personal information a company shares with third parties for the third parties' direct marketing purposes. Facebook does not share your information with third parties for the third parties' own and independent direct marketing purposes unless we receive your permission.

Learn more about the [information we receive and how it is used](#) and [other websites and applications](#). If you have questions about our sharing practices or your rights under California law, please write us at 1601 Willow Road, Menlo Park, CA 94025 or contact us through this help page: https://www.facebook.com/help/contact_us.php?id=173545232710000

[id=173545232710000](#)

EXHIBIT 26

Data Use Policy

Date of Last Revision: November 15, 2013

Information we receive and how it is used

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- [Public information](#)
- [Usernames and User IDs](#)
- [How we use the information we receive](#)
- [Deleting and deactivating your account](#)

Sharing and finding you on Facebook

- [Control each time you post](#)
- [Control over your timeline](#)
- [Finding you on Facebook](#)
- [Access on phones and other devices](#)
- [Activity log](#)
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Other websites and applications

- [About Facebook Platform](#)
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Advertising and Facebook content

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Cookies, pixels and other similar technologies

Some other things you need to know

I. Information we receive and how it is used

Information we receive about you

We receive a number of different types of information about you, including:

Your information

Your information is the information that's required when you sign up for the site, as well as the information you choose to share.

- **Registration information:** When you sign up for Facebook, you are required to provide information such as your name, email address, birthday, and gender. In some cases, you may be able to register using other information, like your telephone number.
- **Information you choose to share:** Your information also includes the information you choose to share on Facebook, such as when you post a status update, upload a photo, or comment on a friend's story.

It also includes the information you choose to share when you communicate with us, such as when you contact us using an email address, or when you take an action, such as when you add a friend, like a Page or a website, add a place to your story, use our contact importers, or indicate you are in a relationship.

Your name, profile pictures, cover photos, gender, networks, username and User ID are treated just like information you choose to make public.

Your birthday allows us to do things like show you age-appropriate content and advertisements.

Information others share about you

We receive information about you from your friends and others, such as when they upload your contact information, post a photo of you, tag you in a photo or status update, or at a location, or add you to a group.

When people use Facebook, they may store and share information about you and others that they have, such as when they upload and manage their invites and contacts.

Other information we receive about you

We also receive other types of information about you:

- We receive data about you whenever you use or are running Facebook, such as when you look at another person's timeline, send or receive a message, search for a friend or a Page, click on, view or otherwise interact with things, use a Facebook mobile app, or make purchases through Facebook.
- When you post things like photos or videos on Facebook, we may receive additional related data (or metadata), such as the time, date, and place you took the photo or video.
- We receive data from or about the computer, mobile phone, or other devices you use to install Facebook apps or to access Facebook, including when multiple users log in from the same device. This may include network and communication information, such as your IP address or mobile phone number, and other information about things like your internet service, operating system, location, the type (including identifiers) of the device or browser you use, or the pages you visit. For example, we may get your GPS or other location information so we can tell you if any of your friends are nearby, or we could request device information to improve how our apps work on your device.
- We receive data whenever you visit a game, application, or website that uses Facebook Platform or visit a site with a Facebook feature (such as a social plugin), sometimes through cookies. This may include the date and time you visit the site; the web address, or URL, you're on; technical information about the IP address, browser and the operating system you use; and, if you are logged in to Facebook, your User ID.
- Sometimes we get data from our affiliates or our advertising partners, customers and other third parties that helps us (or them) deliver ads, understand online activity, and generally make Facebook better. For example, an

advertiser may tell us information about you (like how you responded to an ad on Facebook or on another site) in order to measure the effectiveness of - and improve the quality of - ads.

As described in "[How we use the information we receive](#)" we also put together data from the information we already have about you, your friends, and others, so we can offer and suggest a variety of services and features. For example, we may make friend suggestions, pick stories for your News Feed, or suggest people to tag in photos. We may put together your current city with GPS and other location information we have about you to, for example, tell you and your friends about people or events nearby, or offer deals to you in which you might be interested. We may also put together data about you to serve you ads or other content that might be more relevant to you.

When we get your GPS location, we put it together with other location information we have about you (like your current city). But we only keep it until it is no longer useful to provide you services, like keeping your last GPS coordinates to send you relevant notifications.

We only provide data to our advertising partners or customers after we have removed your name and any other personally identifying information from it, or have combined it with other people's data in a way that it no longer personally identifies you.

Public information

When we use the phrase "public information" (which we sometimes refer to as "Everyone information"), we mean the information you choose to make public, as well as information that is always publicly available.

Information you choose to make public

Choosing to make your information public is exactly what it sounds like: **anyone**, including people off Facebook, will be able to see it. [Learn more](#).

Choosing to make your information public also means that this information:

- can be associated with you (i.e., your name, profile pictures, cover photos, timeline, User ID, username, etc.) even off Facebook;
- can show up when someone does a search on Facebook or on a public search engine;
- will be accessible to the Facebook-integrated games, applications, and websites you and your friends use; and
- will be accessible to anyone who uses our APIs such as our [Graph API](#).

Sometimes you will not be able to select an audience when you post something (like when you write on a Page's wall or comment on a news article that uses our comments plugin). This is because some types of stories are always public stories. As a general rule, you should assume that if you do not see a [sharing icon](#), the information will be publicly available.

When others share information about you, they can also choose to make it public.

Information that is always publicly available

The types of information listed below are always publicly available, and they are treated just like information you decided to make public:

- **Name:** This helps your friends and family find you. If you are uncomfortable sharing your real name, you can always [delete](#) your account.
- **Profile Pictures and Cover Photos:** These help your friends and family recognize you. If you are uncomfortable making any of these photos public, you can always delete them. Unless you delete them, when you add a new profile picture or cover photo, the previous photo will remain public in your profile picture or cover photo album.
- **Networks:** This helps you see who you will be sharing information with before you choose "Friends and Networks" as a custom audience. If you are uncomfortable making your network public, you can [leave the network](#).

- **Gender:** This allows us to refer to you properly.
- **Username and User ID:** These allow you to give out a custom link to your timeline or Page, receive email at your Facebook email address, and help make Facebook Platform possible.

Usernames and User IDs

Usernames and User IDs are the same thing – a way to identify you on Facebook. A User ID is a string of numbers and a username generally is some variation of your name. With your username, you get a custom link (a Facebook URL, such as www.facebook.com/username) to your timeline that you can give out to people or post on external websites.

If someone has your Username or User ID, they can use it to access information about you through the facebook.com website. For example, if someone has your Username, they can type facebook.com/Username into their browser and see your public information as well as anything else you've let them see. Similarly, someone with your Username or User ID can access information about you through our APIs, such as our [Graph API](#). Specifically, they can access your public information, along with your age range, language and country.

If you do not want your information to be accessible to Platform applications, you can turn off all Platform applications from your [Privacy Settings](#). If you turn off Platform you will no longer be able to use any games or other applications until you turn Platform back on. For more information about the information that apps receive when you visit them, see [Other websites and applications](#).

If you want to see information available about you through our Graph API, just type [https://graph.facebook.com/\[User ID or Username\]?metadata=1](https://graph.facebook.com/[User ID or Username]?metadata=1) into your browser.

Your Facebook email address includes your public username like so: username@facebook.com. People can use your Facebook email address to send you messages and anyone in a message conversation can reply to it.

How we use the information we receive

We use the information we receive about you in connection with the services and features we provide to you and other users like your friends, our partners, the advertisers that purchase ads on the site, and the developers that build the games, applications, and websites you use. For example, in addition to helping people see and find things that you do and share, we may use the information we receive about you:

- as part of our efforts to keep Facebook products, services and integrations safe and secure;
- to protect Facebook's or others' rights or property;
- to provide you with location features and services, like telling you and your friends when something is going on nearby;
- to measure or understand the effectiveness of ads you and others see, including to deliver relevant ads to you;
- to make suggestions to you and other users on Facebook, such as: suggesting that your friend use our contact importer because you found friends using it, suggesting that another user add you as a friend because the user imported the same email address as you did, or suggesting that your friend tag you in a picture they have uploaded with you in it; and
- for internal operations, including troubleshooting, data analysis, testing, research and service improvement.

Granting us permission to use [your information](#) not only allows us to provide Facebook as it exists today, but it also allows us to provide you with innovative features and services we develop in the future that use the information we receive about you in new ways.

While you are allowing us to use the information we receive about you, you always own all of your information. Your trust is important to us, which is why we don't share information we receive about you with others unless we have:

- received your permission;
- given you notice, such as by telling you about it in this policy; or
- removed your name and any other personally identifying information from it.

Of course, for information others share about you, they control how it is shared.

We store data for as long as it is necessary to provide products and services to you and others, including those described above. Typically, information associated with your account will be kept until your account is deleted. For certain categories of data, we may also tell you about specific data retention practices.

We may enable access to public information that has been shared through our services.

We may allow service providers to access information so they can help us provide services.

We are able to suggest that your friend tag you in a picture by scanning and comparing your friend's pictures to information we've put together from your profile pictures and the other photos in which you've been tagged. If this feature is enabled for you, you can control whether we suggest that another user tag you in a photo using the "Timeline and Tagging" settings. Learn more at: <https://www.facebook.com/help/tag-suggestions>

Deleting and deactivating your account

If you want to stop using your account, you can either **deactivate** or **delete** it.

Deactivate

Deactivating your account puts your account on hold. Other users will no longer see your timeline, but we do not delete any of your information. Deactivating an account is the same as you telling us not to delete any information because you might want to reactivate your account at some point in the future. You can deactivate your account at:

<https://www.facebook.com/settings?tab=security>

Your friends will still see you listed in their list of friends while your account is deactivated.

Deletion

When you delete your account, it is permanently deleted from Facebook. It typically takes about one month to delete an account, but some information may remain in backup copies and logs for up to 90 days. You should only delete your account if you are sure you never want to reactivate it. You can delete your account at:

https://www.facebook.com/help/contact.php?show_form=delete_account

Learn more at: <https://www.facebook.com/help/?faq=356107851084108>

Certain information is needed to provide you with services, so we only delete this information after you delete your account. Some of the things you do on Facebook aren't stored in your account, like posting to a group or sending someone a message (where your friend may still have a message you sent, even after you delete your account). That information remains after you delete your account.

II. Sharing and finding you on Facebook

Control each time you post

Whenever you post content (like a status update, photo or check-in), you can select a specific audience, or even customize your audience. To do this, simply click on the sharing icon and choose who can see it.

Choose this icon if you want to make something **Public**. Choosing to make something public is exactly what it sounds like. It means that anyone, including people off Facebook, will be able to see or access it.

Choose this icon if you want to share with your Facebook **Friends**.

Choose this icon if you want to **Customize** your audience. You can also use this to hide your story from specific people.

If you tag someone, that person and their friends can see your story no matter what audience you selected. The same is true when you approve a tag someone else adds to your story.

Always think before you post. Just like anything else you post on the web or send in an email, information you share on

Facebook can be copied or re-shared by anyone who can see it.

Although you choose with whom you share, there may be ways for others to determine information about you. For example, if you hide your birthday so no one can see it on your timeline, but friends post "happy birthday!" on your timeline, people may determine your birthday.

When you comment on or "like" someone else's story, or write on their timeline, that person gets to select the audience. For example, if a friend posts a Public story and you comment on it, your comment will be Public. Often, you can see the audience someone selected for their story before you post a comment; however, the person who posted the story may later change their audience. So, if you comment on a story, and the story's audience changes, the new audience can see your comment.

You can control who can see the Facebook Pages you've "liked" by visiting your timeline, clicking on the Likes box on your timeline, and then clicking "Edit."

Sometimes you will not see a sharing icon when you post something (like when you write on a Page's wall or comment on a news article that uses our comments plugin). This is because some types of stories are always public stories. As a general rule, you should assume that if you do not see a sharing icon, the information will be publicly available.

Control over your timeline

Whenever you add things to your timeline you can select a specific audience, or even customize your audience. To do this, simply click on the sharing icon and choose who can see it.

Choose this icon if you want to make something **Public**. Choosing to make something public is exactly what it sounds like. It means that anyone, including people off Facebook, will be able to see or access it.

Choose this icon if you want to share with your Facebook **Friends**.

Choose this icon if you want to **Customize** your audience. You can also use this to hide the item on your timeline from specific people.

When you select an audience for your friend list, you are only controlling who can see the entire list of your friends on your timeline. We call this a timeline visibility control. This is because your friend list is always available to the games, applications and websites you use, and your friendships may be visible elsewhere (such as on your friends' timelines or in searches). For example, if you select "Only Me" as the audience for your friend list, but your friend sets her friend list to "Public," anyone will be able to see your connection on your friend's timeline.

Similarly, if you choose to hide your gender, it only hides it on your timeline. This is because we, just like the applications you and your friends use, need to use your gender to refer to you properly on the site.

When someone tags you in a story (such as a photo, status update or check-in), you can choose whether you want that story to appear on your timeline. You can either approve each story individually or approve all stories by your friends. If you approve a story and later change your mind, you can remove it from your timeline.

When you hide things on your timeline, like posts or connections, it means those things will not appear on your timeline. But, remember, anyone in the audience of those posts or who can see a connection may still see it elsewhere, like on someone else's timeline or in search results. You can also delete your posts or change the audience of content you post, which means you can remove people from or add people to the audience of the content.

People on Facebook may be able to see mutual friends, even if they cannot see your entire list of friends.

Some things (like your name, profile pictures and cover photos) do not have sharing icons because they are always publicly available. As a general rule, you should assume that if you do not see a sharing icon, the information will be publicly available.

Finding you on Facebook

To make it easier for your friends to find you, we allow anyone with your contact information (such as email address or telephone number) to find you through the Facebook search bar at the top of most pages, as well as other tools we provide, such as contact importers - even if you have not shared your contact information with them on Facebook.

You can choose who can look up your timeline using the email address or telephone number you added to your timeline through your [Privacy Settings](#). But remember that people can still find you or a link to your timeline on Facebook through other people and the things they share about you or through other posts, like if you are tagged in a friend's photo or post something to a public page.

Your settings do not control whether people can find you or a link to your timeline when they search for content they have permission to see, like a photo or other story in which you've been tagged.

Access on phones and other devices

Once you share information with your friends and others, they may be able to sync it with or access it via their mobile phones and other devices. For example, if you share a photo on Facebook, someone viewing that photo could save it using Facebook tools or by other methods offered by their device or browser. Similarly, if you share your contact information with someone or invite someone to an event, they may be able to use Facebook or third party applications or devices to sync that information. Or, if one of your friends has a Facebook application on one of their devices, your information (such as the things you post or photos you share) may be stored on or accessed by their device.

You should only share information with people you trust because they will be able to save it or re-share it with others, including when they sync the information to a device.

Activity log

Your activity log is a place where you can go to view most of your information on Facebook, including things you've hidden from your timeline. You can use this log to manage your content. For example, you can do things like delete stories, change the audience of your stories or stop an application from publishing to your timeline on your behalf.

When you hide something from your timeline, you are not deleting it. This means that the story may be visible elsewhere, like in your friends' News Feed. If you want to delete a story you posted, choose the delete option.

What your friends and others share about you

Links and Tags

Anyone can add a link to a story. Links are references to something on the Internet; anything from a website to a Page or timeline on Facebook. For example, if you are writing a story, you might include a link to a blog you are referencing or a link to the blogger's Facebook timeline. If someone clicks on a link to another person's timeline, they'll only see the things that they are allowed to see.

A tag is a special type of link to someone's timeline that suggests that the tagged person add your story to their timeline. In cases where the tagged person isn't included in the audience of the story, it will add them so they can see it. Anyone can tag you in anything. Once you are tagged, you and your friends will be able to see it (such as in News Feed or in search).

You can choose whether a story you've been tagged in appears on your timeline. You can either approve each story individually or approve all stories by your friends. If you approve a story and later change your mind, you can always remove it from your timeline.

If you do not want someone to tag you, we encourage you to reach out to them and give them that feedback. If that does not work, you can block them. This will prevent them from tagging you going forward.

Social reporting is a way for people to quickly and easily ask for help from someone they trust. Learn more at:

https://www.facebook.com/note.php?note_id=196124227075034&_ad=3&_att=iframe

If you are linked to in a private space (such as a message or a group) only the people who can see the private space can see the link. Similarly, if you are linked to a comment, only the people who can see the comment can see the link.

Other information

As described in the "[what your friends and others share about you](#)" section of this policy, your friends and others may share information about you. They may share photos or other information about you and tag you in their posts. If you do not like a particular post, tell them or [report the post](#).

Groups

Once you are in a Group, anyone in that Group can add you to a subgroup. When someone adds you to a Group, you will be listed as "invited" until you visit the Group. You can always leave a Group, which will prevent others from adding you to it again.

Pages

Facebook Pages are public pages. Companies use Pages to share information about their products. Celebrities use Pages to talk about their latest projects. And communities use Pages to discuss topics of interest, everything from baseball to the opera.

Because Pages are public, information you share with a Page is public information. This means, for example, that if you post a comment on a Page, that comment may be used by the Page owner off Facebook, and anyone can see it.

When you "like" a Page, you create a connection to that Page. The connection is added to your timeline and your friends may see it in their News Feeds. You may be contacted by or receive updates from the Page, such as in your News Feed and your messages. You can remove the Pages you've "liked" through your timeline or on the Page.

Some Pages contain content that comes directly from the Page owner. Page owners can do this through online plugins, such as an iframe, and it works just like the games and other applications you use through Facebook. Because this content comes directly from the Page owner, that Page may be able to collect information about you, just like any website.

Page administrators may have access to insights data, which will tell them generally about the people that visit their Page (as opposed to information about specific people). They may also know when you've made a connection to their Page because you've liked their Page or posted a comment.

To control who can see the Facebook Pages you've liked, visit our [Help Center](#).

III. Other websites and applications

About Facebook Platform

Facebook Platform (or simply Platform) refers to the way we help you share your information with the games, applications, and websites you and your friends use. Facebook Platform also lets you bring your friends with you, so you can connect with them off Facebook. In these two ways, Facebook Platform helps you make your experiences on the web more personalized and social.

Remember that these games, applications and websites are created and maintained by other businesses and developers who are not part of, or controlled by, Facebook, so you should always make sure to read their terms of service and privacy policies to understand how they treat your data.

Controlling what information you share with applications

When you connect with a game, application or website - such as by going to a game, logging in to a website using your Facebook account, or adding an app to your timeline - we give the game, application, or website (sometimes referred to as just "applications" or "apps") your basic info (we sometimes call this your "public profile"), which includes your User ID and your public information. We also give them your friends' User IDs (also called your friend list) as part of your basic info.

Your friend list helps the application make your experience more social because it lets you find your friends on that application. Your User ID helps the application personalize your experience because it can connect your account on that application with your Facebook account, and it can access your basic info, which includes your public information and friend list. This includes the information you choose to make public, as well as information that is always publicly available. If the application needs additional information, such as your stories, photos or likes, it will have to ask you for specific permission.

The “Apps” setting lets you control the applications you use. You can see the permissions you have given these applications, the last time an application accessed your information, and the audience on Facebook for timeline stories and activity the application posts on your behalf. You can also remove applications you no longer want, or turn off all Platform applications. When you turn all Platform applications off, your User ID is no longer given to applications, even when your friends use those applications. But you will no longer be able to use any games, applications or websites through Facebook.

When you first visit an app, Facebook lets the app know your language, your country, and whether you are in an age group, for instance, under 18, between 18-20, or 21 and over. Age range lets apps provide you with age-appropriate content. If you install the app, it can access, store and update the information you’ve shared. Apps you’ve installed can update their records of your basic info, age range, language and country. If you haven’t used an app in a while, you should consider removing it. Once you remove an app, it won’t be able to continue to update the additional information you’ve given them permission to access, but it may still hold the information you have already shared. You always can contact the app directly and request that they delete your data. Learn more at: <https://www.facebook.com/help/how-apps-work>

Sometimes a game console, mobile phone, or other device might ask for permission to share specific information with the games and applications you use on that device. If you say okay, those applications will not be able to access any other information about you without asking specific permission from you or your friends.

Sites and apps that use Instant Personalization receive your User ID and friend list when you visit them.

You always can remove apps you’ve installed by using your app settings at: <https://www.facebook.com/settings/?tab=applications>. But remember, apps may still be able to access your information when the people you share with use them. And, if you’ve removed an application and want it to delete the information you’ve already shared with it, you should contact the application. Visit the application’s page on Facebook or its own website to learn more about the app. For example, Apps may have reasons (e.g. legal obligations) to retain some data that you share with them.

Controlling what is shared when the people you share with use applications

Just like when you share information by email or elsewhere on the web, information you share on Facebook can be re-shared. This means that if you share something on Facebook, anyone who can see it can share it with others, including the games, applications, and websites they use.

Your friends and the other people you share information with often want to share your information with applications to make their experiences on those applications more personalized and social. For example, one of your friends might want to use a music application that allows them to see what their friends are listening to. To get the full benefit of that application, your friend would want to give the application her friend list – which includes your User ID – so the application knows which of her friends is also using it. Your friend might also want to share the music you “like” on Facebook. If you have made that information public, then the application can access it just like anyone else. But if you’ve shared your likes with just your friends, the application could ask your friend for permission to share them.

You can control most of the information other people can share with applications they use from the “App” settings page. But these controls do not let you limit access to your public information and friend list.

If you want to completely block applications from getting your information when your friends and others use them, you will need to turn off all Platform applications. This means that you will no longer be able to use any third-party Facebook-integrated games, applications or websites.

If an application asks permission from someone else to access your information, the application will be allowed to use

that information only in connection with the person that gave the permission, and no one else.

For example, some apps use information such as your friends list, to personalize your experience or show you which of your friends use that particular app.

Logging in to another site using Facebook

Facebook Platform lets you log into other applications and websites using your Facebook account. When you log in using Facebook, we give the site your User ID (just like when you connect with any other application), but we do not share your email address or password with that website through this process without your permission.

If you already have an account on that website, the site may also be able to connect that account with your Facebook account. Sometimes it does this using what is called an "email hash", which is similar to searching for someone on Facebook using an email address. Only the email addresses in this case are hashed so no email addresses are actually shared between Facebook and the website.

How it works

The website sends over a hashed version of your email address, and we match it with a database of email addresses that we have also hashed. If there is a match, then we tell the website the User ID associated with the email address. This way, when you log into the website using Facebook, the website can link your Facebook account to your account on that website.

About social plugins

Social plugins are buttons, boxes, and stories (such as the Like button) that other websites can use to present Facebook content to you and create more social and personal experiences for you. While you view these buttons, boxes, and stories on other sites, the content comes directly from Facebook.

Sometimes plugins act just like applications. You can spot one of these plugins because it will ask you for permission to access your information or to publish information back to Facebook. For example, if you use a registration plugin on a website, the plugin will ask your permission to share your basic info with the website to make it easier for you to register for the website. Similarly, if you use an "Add To Timeline" plugin, the plugin will ask for your permission to publish stories about your activities on that website to Facebook.

If you make something public using a plugin, such as posting a public comment on a newspaper's website, then that website can access your comment (along with your User ID) just like everyone else.

If you post something using a social plugin and you do not see a sharing icon, you should assume that story is Public. For example, if you post a comment through a Facebook comment plugin on a site, your story is Public and everyone, including the website, can see your story.

Websites that use social plugins can sometimes tell that you have engaged with the social plugin. For example, they may know that you clicked on a Like button in a social plugin.

We receive data when you visit a site with a social plugin. We keep this data for a maximum of 90 days. After that, we remove your name and any other personally identifying information from the data, or combine it with other people's data in a way that it is no longer associated with you. Learn more at: <https://www.facebook.com/help/social-plugins>

About instant personalization

Instant personalization (sometimes also referred to as "Start now") is a way for Facebook to help partners (such as Bing and Rotten Tomatoes) on and off Facebook to create a more personalized and social experience for logged in users than a social plugin can offer. When you visit a site or app using instant personalization, it will know some information about you and your friends the moment you arrive. This is because sites and apps using instant personalization can access your User ID, your friend list, and your public information.

The first time you visit a site or app using instant personalization, you will see a notification letting you know that the

site or app has partnered with Facebook to provide a personalized experience.

The notification will give you the ability to disable or turn off instant personalization for that site or app. If you do that, that site or app is required to delete all of the information about you it received from Facebook as part of the instant personalization program. In addition, we will prevent that site from accessing your information in the future, even when your friends use that site.

If you decide that you do not want to experience instant personalization for all partner sites and apps, you can disable instant personalization from the “[Apps](#)” settings page.

If you turn off instant personalization, these partner third party sites and apps will not be able to access your public information, even when your friends visit those sites.

If you turn off an instant personalization site or app after you have been using it or visited it a few times (or after you have given it specific permission to access your data), it will not automatically delete information about you it received through Facebook. Like all other apps, the site is required by our policies to delete information about you if you ask it to do so.

How it works

To join the instant personalization program, a potential partner must enter into an agreement with us designed to protect your privacy. For example, this agreement requires that the partner delete information about you if you turn off instant personalization when you first visit the site or app. It also prevents the partner from accessing any information about you until you or your friends visit its site.

Instant personalization partners sometimes use an email hash process to see if any of their users are on Facebook and get those users' User IDs. This process is similar to searching for someone on Facebook using an email address, except in this case, the email addresses are hashed so no actual email addresses are exchanged. The partner is also contractually required not to use your User ID for any purpose (other than associating it with your account) until you or your friends visit the site.

When you visit a site or app using instant personalization, we provide the site or app with your User ID and your friend list (as well as your age range, locale, and gender). The site or app can then connect your account with your friends' accounts to make the site or app instantly social. The site can also access public information associated with any of the User IDs it receives, which it can use to make them instantly personalized. For example, if the site is a music site, it can access your music interests to suggest songs you may like, and access your friends' music interests to let you know what they are listening to. Of course it can only access your or your friends' music interests if they are public. If the site or app wants any additional information, it will have to get your specific permission.

Public search engines

Your public search setting controls whether people who enter your name on a public search engine may see your public timeline (including in sponsored results). You can find your public search setting on the “[Privacy Settings and Tools](#)” settings page.

This setting does not apply to search engines that access your information as an application using Facebook Platform. If you turn your public search setting off and then search for yourself on a public search engine, you may still see a preview of your timeline. This is because some search engines cache information for a period of time. You can learn more about how to request a search engine to remove you from cached information at:

<https://www.facebook.com/help/?faq=13323>

IV. Advertising and Facebook content

Advertising

Facebook offers a [range of products](#) that allow advertisers to reach people on and off Facebook. In addition to the

information we provide in this section, you can also learn more about advertising products, how they work, our partnerships, and the [controls](#) you have, by visiting our “[Advertising on Facebook](#)” page.

When we deliver ads, we do not share your information (information that personally identifies you, such as your name or contact information) with advertisers unless you give us permission. We may provide advertisers with information when we have removed your name and other personally identifying information from it, or combined it with other information so that it no longer personally identifies you. For example, we may tell an advertiser how its ads perform or how many people viewed or clicked on their ads or install an app after seeing an ad.

So we can show you content that you may find interesting, we may use all of the [information we receive about you](#) to serve ads that are more relevant to you. For example, this includes:

- information you provide at registration or add to your account or timeline,
- things you share and do on Facebook, such as what you like, and your interactions with advertisements, partners, or apps,
- keywords from your stories, and
- things we infer from your use of Facebook.

For many ads we serve, advertisers may choose their audience by location, demographics, likes, keywords, and any other information we receive or infer about users. Here are some of the ways advertisers may target relevant ads:

- demographics and interests: for example, 18 to 35 year-old women who live in the United States and like basketball;
- topics or keywords: for example, “music” or people who like a particular song or artist;
- Page likes (including topics such as products, brands, religion, health status, or political views): for example, if you like a Page about gluten-free food, you may receive ads about relevant food products; or
- categories (including things like “moviegoer” or a “sci-fi fan”): for example, if a person “likes” the “Star Trek” Page and mentions “Star Wars” when they check into a movie theater, we may infer that this person is likely to be a sci-fi fan and advertisers of sci-fi movies could ask us to target that category.

In addition to delivering relevant ads, Facebook sometimes pairs ads with [social context](#), meaning stories about social actions that you or your friends have taken. For example, an ad for a sushi restaurant’s Facebook Page may be paired with a News Feed story that one of your friends likes that Page.

We also sometimes serve these same types of ads on other sites or may serve just the social context (such as with ads served by others), so that the ads are more relevant to you. Just like any other content you share on Facebook, only people who you’re already sharing with on Facebook would see it when it is paired with an ad. We also allow advertisers to reach people on Facebook using the information they already have about you (such as email addresses or whether you have visited their websites previously). You can learn more about ads, social context, and our partnerships, including the relevant settings and controls available to you, by visiting the [Advertising on Facebook](#) page.

If an advertiser chooses to run ads, we serve the ads to people who meet criteria the advertiser selects. So, if someone views or otherwise interacts with the ad, the advertiser might assume that the person meets the criteria they selected (for example, that the person is an 18-to-35-year-old woman who lives in the U.S. and likes basketball). We require advertisers to comply with our [Advertising Guidelines](#), including provisions relating to the use of sensitive data.

Advertisers and their partners sometimes use cookies or other similar technologies in order to serve and measure ads and to make their ads more effective. [Learn more about cookies, pixels and similar technologies.](#)

When you post a story on Facebook and an advertiser [sponsors it](#), nothing changes about the audience of the post. Only the people who could originally see the post (the people you shared it with) are eligible to see it.

[Facebook content](#)

We like to tell you about some of the features and tools your friends and others use on Facebook, to help you have a

better experience. For example, if your friend uses our friend finder tool to find more friends on Facebook, we may tell you about it to encourage you to use it as well. This of course means your friend may similarly see suggestions based on the things you do. But we will try to only show it to friends that could benefit from your experience.

V. Cookies, pixels and other similar technologies

Cookies are small pieces of data that are stored on your computer, mobile phone or other device. Pixels are small blocks of code on webpages that do things like allow another server to measure viewing of a webpage and often are used in connection with cookies.

We use technologies like cookies, pixels, and local storage (like on your browser or device, which is similar to a cookie but holds more information) to provide and understand a range of products and services. Learn more at: <https://www.facebook.com/help/cookies>

We use these technologies to do things like:

- make Facebook easier or faster to use;
- enable features and store information about you (including on your device or in your browser cache) and your use of Facebook;
- deliver, understand and improve advertising;
- monitor and understand the use of our products and services; and
- protect you, others and Facebook.

For example, we may use these tools to know you are logged in to Facebook, to help you use social plugins and share buttons, or to know when you are interacting with our advertising or Platform partners.

We may ask advertisers or other partners to serve ads or services to computers, mobile phones or other devices, which may use a cookie, pixel or other similar technology placed by Facebook or the third party (although we would not share information that personally identifies you with an advertiser).

Most companies on the web use cookies (or other similar technological tools), including our advertising and Platform partners. For example, our Platform partners, advertisers or Page administrators may use cookies or similar technologies when you access their apps, ads, Pages or other content.

Cookies and things like local storage help make Facebook work, like allowing pages to load faster because certain content is stored on your browser or by helping us authenticate you to deliver personalized content.

To learn more about how advertisers generally use cookies and the choices advertisers provide, visit the Network Advertising Initiative at http://www.networkadvertising.org/managing/opt_out.asp, the Digital Advertising Alliance at <http://www.aboutads.info/>, the Internet Advertising Bureau (US) at <http://www.iab.net> or the Internet Advertising Bureau (EU) at <http://youronlinechoices.eu/>.

Refer to your browser or device's help material to learn what controls you can often use to remove or block cookies or other similar technologies or block or remove other data stored on your computer or device (such as by using the various settings in your browser). If you do this, it may affect your ability to use Facebook or other websites and apps.

VI. Some other things you need to know

Safe harbor

Facebook complies with the U.S.-EU and U.S.-Swiss Safe Harbor frameworks as set forth by the Department of Commerce regarding the collection, use, and retention of data from the European Union. To view our certification, visit the U.S. Department of Commerce's Safe Harbor website at: <https://safeharbor.export.gov/list.aspx>. As part of our participation in the Safe Harbor program, we agree to resolve disputes you have with us in connection with our policies and practices through TRUSTe. If you would like to contact TRUSTe, visit: <https://feedback-form.truste.com/watchdog/request>

Contact us with questions or disputes

If you have questions or complaints regarding our Data Use Policy or practices, please contact us by mail at 1601 Willow Road, Menlo Park, CA 94025 if you reside in the U.S. or Canada, or at Facebook Ireland Ltd., Hanover Reach, 5-7 Hanover Quay, Dublin 2 Ireland if you live outside the U.S. or Canada. Anyone may also contact us through this help page: https://www.facebook.com/help/contact_us.php?id=173545232710000

Responding to legal requests and preventing harm

We may access, preserve and share your information in response to a legal request (like a search warrant, court order or subpoena) if we have a good faith belief that the law requires us to do so. This may include responding to legal requests from jurisdictions outside of the United States where we have a good faith belief that the response is required by law in that jurisdiction, affects users in that jurisdiction, and is consistent with internationally recognized standards. We may also access, preserve and share information when we have a good faith belief it is necessary to: detect, prevent and address fraud and other illegal activity; to protect ourselves, you and others, including as part of investigations; or to prevent death or imminent bodily harm.

Information we receive about you, including financial transaction data related to purchases made with Facebook, may be accessed, processed and retained for an extended period of time when it is the subject of a legal request or obligation, governmental investigation, or investigations concerning possible violations of our terms or policies, or otherwise to prevent harm. We also may retain information from accounts disabled for violations of our terms for at least a year to prevent repeat abuse or other violations of our terms.

Access requests

You can access and correct most of your personal data stored by Facebook by logging into your account and viewing your timeline and activity log. You can also download a copy of your personal data by visiting your “[Settings](#)” (General Account Settings page), clicking on “Download a copy of your Facebook data” and then clicking on the link for your expanded archive. Learn more at: <https://www.facebook.com/help/?faq=226281544049399>

Notifications and Other Messages

We may send you notifications and other messages using the contact information we have for you, like your email address. You can control most of the notifications you receive, including ones from Pages you like and applications you use, using controls we provide, such as a control included in the email you receive or in your “[Notifications](#)” settings.

Friend Finder

We offer tools to help you upload your friends' contact information so that you and others can find friends on Facebook, and invite friends who do not use Facebook to join, and so we can offer you and others better experiences on Facebook through suggestions and other customized experiences. If you do not want us to store this information, visit this help page at: https://www.facebook.com/contact_importer/remove_uploads.php.

If you give us your password, we will delete it after you upload your friends' contact information.

Invitations

When you invite a friend to join Facebook, we send a message on your behalf using your name, and we may also include names and pictures of other people your friend might know on Facebook. We'll also send a few reminders to those you invite, but the invitation will also give your friend the opportunity to opt out of receiving other invitations to join Facebook.

Memorializing accounts

We may memorialize the account of a deceased person. When we memorialize an account, we keep the timeline on Facebook, but limit access and some features. You can report a deceased person's timeline at: https://www.facebook.com/help/contact.php?show_form=deceased

We also may close an account if we receive a formal request that satisfies certain criteria.

Affiliates

We may share information we receive with businesses that are legally part of the same group of companies that Facebook is part of, or that become part of that group (often these companies are called affiliates). Likewise, our

affiliates may share information with us as well. This sharing is done in compliance with applicable laws including where such applicable laws require consent. We and our affiliates may use shared information to help provide, understand, and improve our services and their own services.

Service Providers

We give your information to the people and companies that help us provide, understand and improve the services we offer. For example, we may use outside vendors to help host our website, serve photos and videos, process payments, analyze data, conduct and publish research, measure the effectiveness of ads, or provide search results. In some cases we provide the service jointly with another company, such as the Facebook Marketplace. In all of these cases our partners must agree to only use your information consistent with the agreement we enter into with them, as well as this Data Use Policy.

Security and bugs

We do our best to keep your information secure, but we need your help. For more detailed information about staying safe on Facebook, visit the [Facebook Security Page](#). We try to keep Facebook up, bug-free and safe, but can't make guarantees about any part of our services or products.

Change of Control

If the ownership of our business changes, we may transfer your information to the new owner so they can continue to operate the service. But they will still have to honor the commitments we have made in this Data Use Policy.

Notice of Changes

If we make changes to this Data Use Policy we will notify you (for example, by publication here and on the [Facebook Site Governance Page](#)). If the changes are material, we will provide you additional, prominent notice as appropriate under the circumstances. You can make sure that you receive notice directly by liking the [Facebook Site Governance Page](#).

Opportunity to comment

Unless we make a change for legal or administrative reasons, or to correct an inaccurate statement, we will give you seven (7) days to provide us with comments on the change. After the comment period, if we adopt any changes, we will provide notice (for example, on the [Facebook Site Governance Page](#) or in this policy) of the effective date.

Information for users outside of the United States and Canada

Company Information: The website under www.facebook.com and the services on these pages are being offered to users outside of the U.S. and Canada by Facebook Ireland Ltd., Hanover Reach, 5-7 Hanover Quay, Dublin 2 Ireland. The company Facebook Ireland Ltd. has been established and registered in Ireland as a private limited company, Company Number: 462932, and is the data controller responsible for your personal information. Directors: Sonia Flynn (Irish), Shane Crehan (Irish).

Your California privacy rights

California law permits residents of California to request certain details about what personal information a company shares with third parties for the third parties' direct marketing purposes. Facebook does not share your information with third parties for the third parties' own and independent direct marketing purposes unless we receive your permission. Learn more about the [information we receive and how it is used](#) and [other websites and applications](#). If you have questions about our sharing practices or your rights under California law, please write us at 1601 Willow Road, Menlo Park,

EXHIBIT 27

FILED UNDER SEAL

EXHIBIT 28

FILED UNDER SEAL

EXHIBIT 29

FILED UNDER SEAL

EXHIBIT 30

FILED UNDER SEAL

EXHIBIT 31

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17 *Attorneys Plaintiffs and the Proposed Class*

18 UNITED STATES DISTRICT COURT
19 NORTHERN DISTRICT OF CALIFORNIA

21 MATTHEW CAMPBELL, MICHAEL
HURLEY, and DAVID SHADPOUR, on
22 behalf of themselves and all others
similarly situated,

23 Plaintiffs,

24 v.

25 FACEBOOK, INC.,

26 Defendant.
27

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Case No. C 13-5996 PJH

**PLAINTIFFS' FIRST SET OF REQUESTS
FOR PRODUCTION OF DOCUMENTS TO
DEFENDANT**

1 Pursuant to Rules 26 and 34 of the Federal Rules of Civil Procedure, the Plaintiffs request
2 that Defendant Facebook respond to the following requests for the production of Documents
3 (each, a “Request,” collectively the “Requests”) within thirty (30) days of service.

4 **DEFINITIONS**

- 5 (a) **“Action”** means the case captioned *Matthew Campbell and Michael Hurley v. Facebook,*
6 *Inc.*; Case No. C 13-5996 PJH (N. Dist. Cal.).
- 7 (b) **“Active Likes”** means any Likes that were generated by Facebook Users affirmatively
8 clicking on a Like button Social PlugIn.
- 9 (c) **“Architecture”** refers to each piece of Facebook infrastructure – including but not limited
10 to source code, software, applications, web crawlers, hardware, and networks – utilized to
11 implement or otherwise facilitate any of Your services.
- 12 (d) **“Communication”** means the conveyance (in the form of facts, ideas, thoughts, opinions,
13 data, inquiries or otherwise) of information and includes, without limitation,
14 correspondence, memoranda, reports, presentations, face-to-face conversations, telephone
15 conversations, text messages, instant messages, voice messages, negotiations, agreements,
16 inquiries, understandings, meetings, letters, notes, telegrams, mail, email, and postings of
17 any type.
- 18 (e) **“Complaint”** means the operative Complaint in this Action.
- 19 (f) **“Developer(s)”** means Third Parties who utilize the Facebook platform to either build
20 their own applications or to incorporate the Facebook platform into their own products
21 (e.g., incorporating Facebook’s Like Social PlugIn into a website).
- 22 (g) **“Document(s)”** means all materials within the full scope of Fed. R. Civ. P. 34 including
23 but not limited to: all writings and recordings, including the originals, drafts and all non-
24 identical copies, whether different from the original by reason of any notation made on
25 such copies or otherwise (including but without limitation to, email and attachments,
26 correspondence, memoranda, notes, diaries, statistics, letters, telegrams, minutes,
27 contracts, reports, studies, checks, statements, tags, labels, invoices, brochures,
28 periodicals, receipts, returns, summaries, pamphlets, books, interoffice and intra-office

1 Communications, instant messages, chats, offers, notations of any sort of conversations,
2 working papers, applications, permits, file wrappers, indices, telephone calls, meetings or
3 printouts, teletypes, telefax, invoices, worksheets, and all drafts, alterations, modifications,
4 changes and amendments of any of the foregoing), graphic or aural representations of any
5 kind (including without limitation, photographs, charts, microfiche, microfilm, videotape,
6 recordings, motion pictures, plans, drawings, surveys), and electronic, mechanical,
7 magnetic, optical or electric records or representations of any kind (including without
8 limitation, computer files and programs, tapes, cassettes, discs, recordings), including
9 Metadata.

10 (h) **“Electronic Media”** means any magnetic, optical, or other storage media device used to
11 record or access ESI including, without limitation, computer memory, hard disks, floppy
12 disks, flash memory devices, CDs, DVDs, Blu-ray disks, cloud storage (e.g., DropBox,
13 Box, OneDrive, and SharePoint), tablet computers (e.g., iPad, Kindle, Nook, and Samsung
14 Galaxy), cellular or smart phones (e.g., BlackBerry, iPhone, Samsung Galaxy), personal
15 digital assistants, magnetic tapes of all types or any other means for digital storage and/or
16 transmittal.

17 (i) **“ESI” or “Electronically Stored Information”** refers to information and Documents (as
18 defined within this section) within the full scope of Fed. R. Civ. P. 34 – with all Metadata
19 intact – created, manipulated, communicated, stored, and best utilized in digital form, and
20 requiring the use of Electronic Media to access. Such information includes emails, email
21 attachments, message boards, forums, support tickets, support articles, security alerts,
22 pop-ups, videos, discussion boards, data, charts, BETA results, error messages, bug
23 reports, source code, investigative reports, monitoring reports, comments, press releases,
24 drafts, models, templates, websites, instant messages, chats, and intercompany and intra-
25 company Communications.

26 (j) **“Facebook User(s)”** means Persons who have established a Facebook account.

27 (k) **“Facebook User Data Profile(s)”** means the group of data points, collected by You from
28 any source and assigned by You to specific Facebook Users, for purposes including but

1 not limited to “bundling characteristics” and determining the potential interests of
2 Facebook Users as described in Your Data Use Policy under the heading “How
3 Advertising and Sponsored Stories Work.”

- 4 (l) **“Identify,” with respect to Documents**, means to give, to the extent known, the (a) type
5 of Document; (b) general subject matter; (c) date of the Document; (d) author(s), (e)
6 addressee(s), and (f) recipient(s).
- 7 (m) **“Identify,” with respect to Persons**, means to give, to the extent known, the Person’s full
8 name, present or last known address, and when referring to a natural person, additionally,
9 the present or last known place of employment. Once a Person has been identified in
10 accordance with this subparagraph, only the name of that Person need be listed in
11 response to subsequent discovery requesting the identification of that Person.
- 12 (n) **“Including”** means “including but not limited to” and “including without limitation.”
- 13 (o) **“Metadata”** refers to structured information about an electronic file that is embedded in
14 the file, describing the characteristics, origins, usage and validity the electronic file.
- 15 (p) **“Meeting”** means the contemporaneous presence, whether in person or through any
16 means of communication, of any natural persons, whether or not such presence was by
17 chance or prearranged, and whether or not the meeting was formal or informal, or
18 occurred in connection with some other activity.
- 19 (q) **“Motion to Dismiss”** means Your motion to dismiss filed in this Action (Docket No. 29).
- 20 (r) **“Native Format”** refers to the original file format in which a particular Document or item
21 of ESI was created.
- 22 (s) **“Passive Likes”** means any Likes that were *not* generated by Facebook Users
23 affirmatively clicking on a Like button Social PlugIn, and were instead generated as a
24 result of Facebook scanning URLs contained within Private Message (*i.e.*, generated
25 through the behavior described in the Wall Street Journal article “How Private Are Your
26 Private Facebook Messages”).
- 27 (t) **“Person”** means any natural person or any business, legal or governmental entity or
28 association.

- 1 (u) **“Plaintiff”** and **“Plaintiffs”** refer to the named plaintiffs in this Action, and any reference
2 to “Plaintiff” or “Plaintiffs” shall be construed disjunctively or conjunctively as necessary
3 in order to bring within the scope of the request all responses which otherwise might be
4 construed to be outside its scope.
- 5 (v) **“Private Message(s)”** means the portion of Facebook’s service designed to transmit
6 private messages between users – as opposed to posts – and which process is engaged by,
7 *inter alia*, the “Message” button on users’ profile pages or via the Messenger app.
- 8 (w) **“Private Message Content”** means any data or metadata related to a Private Message that
9 could in any way apprise its possessor of any substance, meaning, or purport of the Private
10 Message.
- 11 (x) **“Private Message Transmission”** means the act or series of acts taken by Facebook
12 during the exchange of Private Messages between Facebook Users; beginning the moment
13 a Facebook User initiates the process of composing a Private Message to at least one
14 recipient Facebook User, and ending once the recipient(s) view(s) the Private Message.
15 Such act or acts include routing, delivery, processing, scanning, anti-virus and spam
16 filtration, writing of the Private Message to any server, analysis, content extraction,
17 generation of data, and generation of metadata.
- 18 (y) **“Process”** refers to a series of discrete steps, ordered and undertaken to achieve a specific
19 goal or set of goals that facilitate Facebook’s operation.
- 20 (z) **“Relate(s) o,” “Related to”** or **“Relating to”** shall be construed to mean referring to,
21 reflecting, concerning, pertaining to or in any manner being connected with the matter
22 discussed.
- 23 (aa) **“Targeted Advertising”** means advertising purchased by Third Parties, to be delivered
24 by You to Facebook Users based upon inferences drawn from data points within Facebook
25 Users’ Data Profiles (*e.g.*, “location,” “demographics,” “interests,” and “behaviors,” as
26 described on Your website on the page titled “How to target Facebook Ads;
27 <https://www.facebook.com/business/a/online-sales/ad-targeting-details>).
- 28 (bb) **“Third Party”** refers to any party other than You or Plaintiffs.

1 (cc) **“Transmission,” “Transmit,”** and **“Transmitting”** refer to any intentional act by one
2 party which results in the possession, by at least one other party, of a Document or item of
3 ESI. Such acts include but are not limited to mailing (via the U.S. Post Office or other
4 Third Party carriers such as FedEx or UPS), faxing, emailing, hand-delivering, and
5 causing to be delivered via courier service any Document and/or, where applicable, item
6 of ESI.

7 (dd) **“You,” “Your,”** and **“Facebook”** shall mean Facebook, Inc. and any of its directors,
8 officers, employees, partners, members, representatives, agents (including attorneys,
9 accountants, consultants, investment advisors or bankers), and any other person purporting
10 to act on its behalf. In the case of business entities, these defined terms include parents,
11 subsidiaries, affiliates, predecessor entities, successor entities, divisions, departments,
12 groups, acquired entities and/or related entities or any other entity acting or purporting to
13 act on its behalf.

14 **RULES OF CONSTRUCTION**

15 1. The connectives “and” and “or” shall be construed either disjunctively or
16 conjunctively as necessary to bring within the scope of the discovery request all responses that
17 might otherwise be construed to be outside of its scope.

18 2. “Any,” “all,” and “each” shall be construed as any, all and each.

19 3. The singular form of a noun or pronoun includes the plural form and vice versa.

20 4. The use of any tense of any verb shall also include within its meaning all other
21 tenses of that verb.

22 5. A term or word defined herein is meant to include both the lower and upper case
23 reference to such term or word.

24 6. Any headings which appear in the Requests for Production section have been
25 inserted for the purpose of convenience and ready reference. They do not purport to, and are not
26 intended to, define, limit, or extend the scope or intent of the Requests to which they pertain.

INSTRUCTIONS

1
2 1. You are requested to produce all Documents and ESI in Your possession, custody,
3 or control – as well as Documents and ESI that are in the possession of Your partners, officers,
4 employees, attorneys, accountants, representatives, or agents, or that are otherwise subject to
5 Your custody or control – that are described below.

6 2. Unless otherwise indicated, the Documents and ESI to be produced include all
7 Documents and ESI prepared, sent, dated or received, or those that otherwise came into existence
8 any time during the Relevant Time Period.

9 3. The production by one person, party, or entity of a Document or item of ESI does
10 not relieve another person, party, or entity from the obligation to produce his, her, or its own copy
11 of that Document or ESI, even if the two are identical.

12 4. In producing Documents and ESI, You are requested to produce a copy of each
13 original Document and ESI together with a copy of all non-identical copies and drafts of that
14 Document. If the original of any Document and ESI cannot be located, a copy shall be provided
15 in lieu thereof, and shall be legible and bound or stapled in the same manner as the original.

16 5. Documents and ESI shall be produced as they are kept in the usual course of
17 business. All Documents and ESI shall be produced with a copy of the file folder, envelope, or
18 other container in which the Documents and ESI are kept or maintained. All Documents and ESI
19 shall be produced intact in their original files, without disturbing the organization of Documents
20 and ESI employed during the conduct of the ordinary course of business and during the
21 subsequent maintenance of the Documents and ESI.

22 6. Documents and ESI not otherwise responsive to this discovery request shall be
23 produced if such Documents and ESI mention, discuss, refer to, or explain the Documents and
24 ESI which are called for by this discovery request, or if such Documents and ESI are attached to
25 Documents and ESI called for by this discovery request and constitute routing slips, transmittal
26 memoranda, or letters, comments, evaluations or similar materials.

27 7. Each Document and item of ESI requested herein is requested to be produced in its
28 entirety and without deletion or excisions, regardless of whether You consider the entire

1 Document or item of ESI to be relevant or responsive to this request. If You have redacted any
2 portion of a Document or item of ESI, stamp the word “redacted” on each page of the Document
3 or item of ESI that You have redacted.

4 8. If any Document or item of ESI called for by these requests is not produced in full
5 or is redacted on the ground that it is privileged or otherwise claimed to be protected against
6 production, You are requested to provide the following information with respect to each such
7 Document or item of ESI or redaction:

8 (a) its date;

9 (b) its author(s), its signatory(s) and each and every other person who prepared
10 or participated in its preparation;

11 (c) the type of Document or item of ESI it is (e.g., letter, chart, memorandum,
12 etc.);

13 (d) a description of its subject matter and length;

14 (e) a list of those persons and entities to whom said Document(s) or item of
15 ESI was disseminated, together with their last known addresses and the date or approximate date
16 on which each such person or entity received it;

17 (f) a list of all other persons to whom the contents of the Document or item of
18 ESI have been disclosed, the date such disclosure took place, the means of such disclosure, and
19 the present location of the Document or item of ESI and all copies thereof;

20 (g) each and every person having custody or control of the Document or item
21 of ESI and all copies thereof; and

22 (h) the nature of the privilege or other rule of law relied upon and any facts
23 supporting Your position in withholding production of each such Document or item of ESI.

24 9. If You assert an objection to any request, You must nonetheless respond and
25 produce any responsive Documents and ESI that are not subject to the stated objection. If You
26 object to part of a request or category, You must specify the portion of the request to which You
27 object, and must produce Documents and ESI responsive to the remaining parts of the request.
28

1 who may possess knowledge relevant to this Action.

2 **REQUEST FOR PRODUCTION NO. 2:**

3 Documents and ESI sufficient to identify all databases, networks, or any other repositories
4 of information under Your control that may contain Documents and ESI relevant to this Action.

5 **REQUEST FOR PRODUCTION NO. 3:**

6 Documents and ESI sufficient to identify all methods and media utilized by Your
7 employees for inter-office (internal) Communication in the course of their work, including but not
8 limited to inter-office mail (electronic and physical), reports (electronic and physical), chats, and
9 video chats, as well as how and where such Communications are stored.

10 **B. Requests Related to Private Message Transmission and the Like Social PlugIn**

11 **REQUEST FOR PRODUCTION NO. 4:**

12 All Documents and ESI sufficient to identify each Process and/or piece of Architecture
13 involved in Private Message Transmission.

14 **REQUEST FOR PRODUCTION NO. 5:**

15 All Documents and ESI related to each Process and/or piece of Architecture involved in
16 the scanning of Private Message Content for purposes of creating, augmenting, or otherwise
17 maintaining Facebook User Data Profiles.

18 **REQUEST FOR PRODUCTION NO. 6:**

19 All Documents and ESI related to each Process and/or piece of Architecture involved in
20 the acquisition of data, metadata, or other content from Private Messages, for purposes of
21 creating, augmenting, or otherwise maintaining Facebook User Data Profiles.

22 **REQUEST FOR PRODUCTION NO. 7:**

23 All Documents and ESI sufficient to identify each Process and/or piece of Architecture
24 involved in spam filtering.

25 **REQUEST FOR PRODUCTION NO. 8:**

26 All Documents and ESI sufficient to identify each Process and/or piece of Architecture
27 involved in malware filtering.

1 **REQUEST FOR PRODUCTION NO. 9:**

2 All Documents and ESI sufficient to identify each Process and/or piece of Architecture
3 involved in generating thumbnail/URL previews.

4 **REQUEST FOR PRODUCTION NO. 10:**

5 All Documents and ESI sufficient to identify each Process and/or piece of Architecture
6 involved in storing Private Messages for Facebook Users' future review, or for any other purpose.

7 **REQUEST FOR PRODUCTION NO. 11:**

8 All Documents and ESI sufficient to identify each Process and/or piece of Architecture
9 involved in "protect[ing] users, the product, and the site from threats and abusive behavior," as
10 described on page 11 of Your Motion to Dismiss.

11 **REQUEST FOR PRODUCTION NO. 12:**

12 All Documents and ESI sufficient to identify each Process and/or piece of Architecture
13 related to the Like Social PlugIn.

14 **REQUEST FOR PRODUCTION NO. 13:**

15 All Documents and ESI relating to each Process and/or piece of Architecture involved in
16 generating Passive Likes, including all Documents and ESI related to Your cessation of the
17 practice of generating Passive Likes.

18 **REQUEST FOR PRODUCTION NO. 14:**

19 All Documents and ESI relating to the "bug...where at times the count for the Share or
20 Like goes up by two," identified by You in Your statement quoted in the Wall Street Journal
21 Article titled "How Private Are Your Private Facebook Messages?" and published in
22 October, 2012.

23 **REQUEST FOR PRODUCTION NO. 15:**

24 All Documents and ESI sufficient to identify each Process and/or piece of Architecture
25 involved in generating Active Likes.

26 **REQUEST FOR PRODUCTION NO. 16:**

27 All Documents and ESI relating to how Third Parties acquire information related to
28 Facebook Users from the Like Social PlugIn, including information acquired by Third Parties

1 when a Facebook User engages the Like Social PlugIn either via Passive Likes or Active Likes.

2 **REQUEST FOR PRODUCTION NO. 17:**

3 All Documents and ESI relating to how Third Parties can use information related to
4 Facebook Users from the Like Social PlugIn, including Social Graph searches of data acquired
5 through Passive Likes or Active Likes.

6 C. **Requests Related to How Facebook User Data Profiles Are Created,**
7 **Augmented, and Maintained**

8 **REQUEST FOR PRODUCTION NO. 18:**

9 All Documents and ESI sufficient to identify each Process and/or piece of Architecture
10 involved in the creation, augmentation, or maintenance of Facebook User Data Profiles.

11 **REQUEST FOR PRODUCTION NO. 19:**

12 All Documents and ESI relating to how You use any Private Message Content, including
13 for purposes related to Facebook User Profiles and/or Targeted Advertising.

14 **REQUEST FOR PRODUCTION NO. 20:**

15 All Documents and ESI relating to the extent to which You allow Third Parties any access
16 to any Private Message Content.

17 **REQUEST FOR PRODUCTION NO. 21:**

18 All Documents and ESI relating to the use of Passive Likes – or any data, metadata, or
19 other information generated therefrom – as data points in Facebook User Data Profiles.

20 **REQUEST FOR PRODUCTION NO. 22:**

21 All Documents and ESI relating to the use of Passive Likes – or any data, metadata, or
22 other information generated therefrom – for purposes related to Targeted Advertising.

23 **REQUEST FOR PRODUCTION NO. 23:**

24 All Documents and ESI relating to the use of Active Likes – or any data, metadata, or
25 other information generated therefrom – as data points in Facebook User Data Profiles.

26 **REQUEST FOR PRODUCTION NO. 24:**

27 All Documents and ESI relating to the use of Active Likes – or any data, metadata, or
28 other information generated therefrom – for purposes related to Targeted Advertising.

1 **D. Requests Related to How Facebook Obtains Consent**

2 **REQUEST FOR PRODUCTION NO. 25:**

3 All Documents and ESI used by You to establish Facebook Users’ express consent to the
4 practices forming the basis for Plaintiffs’ Complaint.

5 **REQUEST FOR PRODUCTION NO. 26:**

6 All Documents and ESI supporting the position advanced in pages 18-19 of Your Motion
7 to Dismiss that Facebook Users impliedly consent to the practices forming the basis for Plaintiffs’
8 Complaint.

9 **E. Requests Related to Law Enforcement Investigations, Media Investigations,
10 and Complaints Involving Privacy Issues**

11 **REQUEST FOR PRODUCTION NO. 27:**

12 All Documents and ESI related to investigations of Facebook by any governmental
13 agency (in the United States or otherwise), regulatory agency, law enforcement agency, or
14 advisory council relating to user privacy issues, including investigations by United States Federal
15 Trade Commission and the Office of the Irish Data Protection Commissioner.

16 **REQUEST FOR PRODUCTION NO. 28:**

17 All Documents and ESI related to FTC MATTER/FILE NUMBER: 092 3184, *In the*
18 *Matter of Facebook, Inc., a corporation*, including all Documents and ESI related to
19 implementation of the business practice changes mandated by the FTC in its July 27, 2012
20 Decision and Order (“FTC Order”), and including all Documents and ESI related to the Third
21 Party, biennial assessments and reports identified on pages 6 and 7 of the FTC Order.

22 **REQUEST FOR PRODUCTION NO. 29:**

23 All Documents and ESI related to – and sufficient to identify – the “dedicated team of
24 privacy professionals” identified on page 8 of Your Form 10-K for fiscal year ending
25 December 31, 2013, including any involvement such Persons had in matters related to (1)
26 obtaining consent of Facebook Users for Your practices implicating privacy and data use; (2)
27 Private Messages; and (3) the acts and practices described in the Complaint.

28

1 **REQUEST FOR PRODUCTION NO. 30:**

2 All Documents and ESI related to all audits of Facebook conducted by the Office of the
3 Irish Data Protection Commissioner.

4 **REQUEST FOR PRODUCTION NO. 31:**

5 All Documents and ESI related to Third Parties discussing Passive Likes, including the
6 Wall Street Journal article “How Private Are Your Private Facebook Messages,” the Digital
7 Trends article “Facebook Scans Private Messages for Brand Page Mentions, Admits a Bug is
8 Boosting Likes,” and the Hacker News post “Facebook Graph API exploit that let’s [sic] you
9 pump up to 1800 ‘Likes’ in an hour.”

10 F. **Miscellaneous Requests**

11 **REQUEST FOR PRODUCTION NO. 32:**

12 All Documents and ESI that You contend evidence or substantiate Your defenses in this
13 Action.

14 **REQUEST FOR PRODUCTION NO. 33:**

15 All Documents and ESI related to Your policies, practices, or procedures, if any,
16 regarding the retention or destruction of Documents and files, including emails, email backup or
17 archive tapes, hard drives, and corporate storage, including, without limitation, any changes or
18 modifications in such policies or practices during the Relevant Time Period.

19 **REQUEST FOR PRODUCTION NO. 34:**

20 All insurance policies, including any declaration pages and riders, which could be used to
21 satisfy any claim in this action.

22 **REQUEST FOR PRODUCTION NO. 35:**

23 A plain-English description or glossary for any and all lists, legends, codes, abbreviations,
24 collector initials, or other non-obvious terms, words, or data contained in any of the Documents
25 or ESI produced in response to any of these Requests for Production, and to the extent applicable,
26 with any of the Interrogatories served herewith.

27 **REQUEST FOR PRODUCTION NO. 36:**

28 For any source code related to any of these Requests, Documents and ESI sufficient to

1 identify all code repositories for such source code.

2 **REQUEST FOR PRODUCTION NO. 37:**

3 For any source code related to any of these Requests, check in/check out histories –
4 including timestamps, version numbers, and usernames – for such source code.

5 **REQUEST FOR PRODUCTION NO. 38:**

6 All Documents and ESI related to any Facebook User complaints related to the practices
7 alleged in Plaintiffs’ Complaint, as well as all responses from Facebook thereto.

8 **REQUEST FOR PRODUCTION NO. 39:**

9 All Documents and ESI related to Your representations to Third Parties regarding the use
10 of Active and Passive Likes in marketing and/or Targeted Advertising, including but not limited
11 to form contracts, marketing materials, and internal memoranda describing the purported benefits
12 of Active and Passive Likes to Third Parties.

13 **REQUEST FOR PRODUCTION NO. 40:**

14 All Documents and ESI related to each Plaintiff.

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1 Dated: January 26, 2015

Respectfully submitted,

2 LIEFF CABRASER HEIMANN & BERNSTEIN, LLP

3
4 By: /s/ Michael W. Sobol

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17 *Attorneys Plaintiffs and the Proposed Class*

18 UNITED STATES DISTRICT COURT
19 NORTHERN DISTRICT OF CALIFORNIA

21 MATTHEW CAMPBELL, MICHAEL
HURLEY, and DAVID SHADPOUR, on
22 behalf of themselves and all others
similarly situated,

23 Plaintiffs,

24 v.

25 FACEBOOK, INC.,

26 Defendant.
27
28

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Case No. C 13-5996 PJH

**PROOF OF SERVICE BY EMAIL AND
U.S. MAIL**

1 I am a citizen of the United States and employed in San Francisco County, California. I
2 am over the age of eighteen years and not a party to the within-entitled action. My business
3 address is 275 Battery Street, 29th Floor, San Francisco, California 94111-3339.

4 I am readily familiar with Lieff, Cabraser, Heimann & Bernstein, LLP's practice for
5 collection and processing of documents for service via email, and that practice is that the
6 documents are attached to an email and sent to the recipient's email account.

7 I am also readily familiar with this firm's practice for collection and processing of
8 correspondence for mailing with the United States Postal Service. Following ordinary business
9 practices, the envelope was sealed and placed for collection and mailing on this date, and would,
10 in the ordinary course of business, be deposited with the United States Postal Service on this date.

11 On January 26, 2015, I caused to be served copies of the following documents:

12 **1. PLAINTIFFS' FIRST SET OF REQUESTS FOR**
13 **PRODUCTION OF DOCUMENTS TO DEFENDANT; and**
14 **this**

15 **2. PROOF OF SERVICE BY EMAIL AND U.S. MAIL**

16 on the following parties in this action through their respective counsel:

17 Christopher Chorba
18 Gibson, Dunn & Crutcher LLP
19 333 South Grand Avenue
20 Los Angeles, CA 90071-3197
21 Email: cchorba@gibsondunn.com

22 Joshua Aaron Jessen
23 Gibson Dunn & Crutcher LLP
24 3161 Michelson Drive, Suite 1200
25 Irvine, CA 92612
26 Email: jjessen@gibsondunn.com

27 Executed on January 26, 2015, at San Francisco, California.

28 */s/ David T. Rudolph*

David T. Rudolph

GZJ KDK'54''''

April 10, 2015

VIA ELECTRONIC MAIL

Hank Bates, Esq.
Carney Bates & Pulliam, PLLC
2800 Cantrell Road, Suite 510
Little Rock, AR 72202

Re: *Campbell v. Facebook, Inc.*, N.D. Cal. Case No. 13-cv-05996-PJH

Dear Hank:

Thank you for your letter of April 7, 2015, in which you indicate that Plaintiffs are willing to “table” or narrow several of their requests for production.

We agree that Plaintiffs’ Request for Production Nos. 12, 15, 18, 23, and 24, which seek broad categories of documents unrelated to the practice challenged by Plaintiffs in this case, should be withdrawn.

With respect to Plaintiffs’ proposed narrowed requests (Request for Production Nos. 16, 17, 27, 28, 29, and 30), we are discussing the proposal with our client and will let you know our position shortly. With respect to Request No. 29, please be advised that there is no specific list of the “dedicated team of privacy professionals” referenced in the Request, but we have already agreed to conduct a reasonable search for non-privileged documents sufficient to identify Facebook’s current and former employees who may possess knowledge relevant to the practice challenged in this action, and we also have identified witnesses with relevant knowledge in Facebook’s Initial Disclosures and responses to Plaintiffs’ Interrogatories.

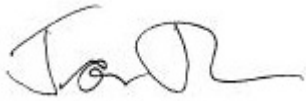
Finally, with respect to the “Relevant Time Period” proposed in your letter (April 1, 2010 to December 30, 2013), we also are discussing that proposal with our client. To inform our decision, it would be helpful if Plaintiffs could articulate why they believe they are entitled to documents after October 2012. Plaintiffs allege in their Complaint that “Facebook ceased [its] [allegedly] illegal practice at some point after it was exposed in October 2012.” Dkt. No. 25 ¶ 59 n.3. We understand that Plaintiffs need to confirm the October 2012 date through discovery (which Facebook will provide), but apart from that confirmation, it is unclear to us why Plaintiffs need any documents after that time period. Similarly, it would be helpful if Plaintiffs could articulate why they believe they are entitled to documents before

Hank Bates, Esq.
April 10, 2015
Page 2

the start of the proposed class period (December 30, 2011) and why Plaintiffs propose April 2010 as the start date.

We look forward to discussing these issues with you further next week.

Sincerely,

A handwritten signature in black ink, appearing to read "Joshua A. Jessen". The signature is fluid and cursive, with a prominent initial "J" and a long, sweeping underline.

Joshua A. Jessen

EXHIBIT 33

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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 Plaintiff,

21 v.

22 FACEBOOK, INC.,

23 Defendant.

24

25

26

27

28

Case No. C 13-05996 PJH (MEJ)

**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,¹ and an inventory and billing
3 management system for an acute care hospital.²

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,³ while in others the issue has been the economic value of social
9 media marketing in sustaining the viability of traditional media properties.⁴ Moreover, many
10 trademark infringement and trade secret cases also tend to involve the analysis and assessment of
11 online advertising activity.⁵

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")⁶
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:

20
21 _____
22 ¹ The software system was distributed to the nearly 500 nationalized industrial companies in
Mexico to coordinate budgeting and for which I received a Diploma for Public Service from the
Federal Government of Mexico in 1988.

23 ² Developed for a private hospital in 1991 in Ensenada, Baja California, Mexico.

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

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

26 ⁵ In, e.g., *Gen. C.E. Yeager v. Aviat Aircraft Inc. and S. Horne*, case 10-CV-2055 before the
USDC for the Eastern District of California; *Laserfiche v. SAP A.G.*, case 10-7843 (USDC for the
27 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 ⁶ Consolidated Amended Class Action Complaint, filed April 25, 2014.

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

8. According to the CAC, the putative Class Period began on December 30, 2011.¹⁰

[REDACTED]

[REDACTED] ¹¹

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

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

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

- a. Is there proof common to the proposed Class capable of showing that—and how much—Facebook profited or otherwise benefited from the Electronic Communications Privacy Act (“ECPA”) and the California Invasion of Privacy Act (“CIPA”) violations alleged in the CAC?
- b. Is there a reliable Class-wide or formulaic method capable of 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:¹²

⁷ *Id.* at §§27, 39.

⁸ *E.g., Id.* at §86.

⁹ *E.g., Id.* at §30.

¹⁰ *Id.* at §59.

¹¹ *Id.* at §§27, 39.

¹² 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.¹³ On August

25 ¹³ 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,¹⁴ which is equivalent to approximately 51% of
2 all internet users worldwide.¹⁵ In the U.S. and Canada, there are currently 217 million (monthly
3 active) users¹⁶ which represent 61% of 357 million people in the region.¹⁷ Facebook’s advertising
4 network generates revenue in excess of \$1.4 billion monthly,¹⁸ 49.3% of which is attributable to
5 users in the U.S. and Canada.¹⁹ 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.²⁰

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.²¹ 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.²² Thus, access to the
16 wealth of information captured on Facebook enables advertisers to reach people across devices

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

19 ¹⁵ 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 ¹⁶ Facebook, Inc.’s 2015 Q3 Earnings Report, Slide 5 (*op cit.*).

22 ¹⁷ 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 ¹⁸ Facebook, Inc.’s 2015 Q3 Earnings Report, Slide 8 (*op cit.*), quarterly data divided by three.

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

26 ²⁰ 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 ²¹ Facebook, 2014 10-K Page 5 (User and Revenue data cited above do not include Instagram or
WhatsApp users).

²² 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;²³
- 5 b. *Relevance*, supporting ad targeting by rich demographics and
6 interests data plus Marketers' and third party data cross
7 referencing;²⁴
- 8 c. *Social Context*, by providing information to leverage
9 recommendations from friends;²⁵ and,
- 10 d. *Engagement*, with ad products prompting interaction and
11 sharing.²⁶

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.²⁷

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.²⁸ 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."²⁹ This amount of attention is leveraged by Facebook in providing

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

27 ²⁴ Facebook, Inc. Form 10K 2012, p. 7.

28 ²⁵ *Id.*, p. 8.

²⁶ *Id.*

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

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

²⁹ 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.³⁰

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,³¹
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,³² 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,³³ discover
15 content by searching,³⁴ and incorporate more and more online activities.³⁵ On the advertising
16 sales side, Facebook competes with both online advertising outlets, such as Google AdWords and
17 DoubleClick,³⁶ 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 ³⁰ Facebook, Inc.'s 2015 Q3 Earnings Report, Slide 8 (*op cit.*).

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

24 ³² 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 ³³ 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 ³⁴ *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/>).

³⁵ 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.

³⁶ *See* Google Products and Advertising Platforms (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."³⁷ 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.³⁸

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"³⁹ 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,⁴⁰ pixels⁴¹ and similar

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

23 ³⁸ 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), p.18.

25 ³⁹ 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 ⁴⁰ 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.

⁴¹ 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.⁴² 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.⁴³

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 Illustration⁴⁴



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

26 ⁴³ 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.

⁴⁴ 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).⁴⁵ 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,⁴⁶ which
11 enables any web page to become a rich object in a Social Graph, and the Graph API,⁴⁷ which is
12 the primary way for apps to read and write to the Facebook Social Graph.⁴⁸ 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.⁴⁹ Facebook first
19 implemented the Like Button in or around February 2009⁵⁰ and, in Facebook’s F8 conference in
20

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

22 ⁴⁶ 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 ⁴⁷ 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 ⁴⁸ See <https://developers.facebook.com/docs/graph-api>.

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

28 ⁵⁰ 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.⁵¹

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.⁵² 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).⁵³ 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.

26
27 ⁵¹ Facebook F8 April 21, 2010.

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

⁵³ 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.⁵⁴ From its launch in April 2010, [REDACTED]

[REDACTED].⁵⁵

30. Facebook has promoted this social plug-in aggressively to third-party websites by, for instance, taking control of News Feed content.⁵⁶ 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.⁵⁷

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.⁵⁸

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

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

⁵⁶ 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/>).

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

⁵⁸ 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.⁵⁹

5 33. Additionally, [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]⁶⁰

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,⁶¹ because it
17 enhances clients' impression of how effective Facebook
18 Marketing is and incentivizes Marketers' willingness to invest
19 in Facebook Marketing.

25 ⁵⁹ 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 ⁶⁰ CAC at §§25-26.

⁶¹ At least up to the end of 2012.

1
2 **IV. The Measure of Damages**

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

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

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

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

1 segment.⁶² 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.⁶³

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.⁶⁴ 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.⁶⁵ 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 \$1,593
14 million per quarter.⁶⁶ This is revenue attributable to the Social Graph because it enables the
15 unique selling proposition of targeted advertising on Facebook. Furthermore, according to
16 Facebook, the average cost of revenue, marketing and sales, and general and administrative
17 expenses during the same period was 40.75% as a percentage of revenue.⁶⁷ Thus, a profit of
18 \$3,776 million per year is attributable to the U.S. portion of the Social Graph asset.⁶⁸

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

21 ⁶³ 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.

22 ⁶⁴ See, e.g.: Smith and Parr (2000), p. 164.

23 ⁶⁵ *Ibid*, p. 169.

24 ⁶⁶ This is the average of the quarterly advertising revenue from the activities of users located in
25 the U.S. and Canada during the four quarters between April 2014 through June 2015, \$1,771
26 million, as disclosed in: Facebook, Inc.'s 2015 Q2 Earnings Report (July 29, 2015) Slide 9 (*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.*).

27 ⁶⁷ Facebook, Inc.'s 2015 Q2 Earnings Report (July 29, 2015) Slide 13 (*op cit.*). Per accepted
valuation standards, Research and Development expenses are not includable in this valuation
because, by definition, their effects are in the future, not as of the valuation date (June 30, 2015).

28 ⁶⁸ The result of multiplying the quarterly revenue times four quarters and deducting 40.75% for

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.⁶⁹

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.⁷⁰ This represents an exponential
11 decline in the accuracy of address information of 8.37% per year.⁷¹ At this rate, 50% of people
12 will have moved in about eight years.⁷² 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.⁷³
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 majority of people. Based on these considerations, I have concluded that a reasonably reliable
19 remaining useful life for valuing the Social Graph asset is eight years.⁷⁴

20 _____
21 *Footnote continued from previous page*
22 expenses.

21 ⁶⁹ These would be parameters such as age, gender, household income, which change predictably,
22 slowly, sporadically, or not at all.

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

24 ⁷¹ This equivalent annual rate is calculated algebraically solving the equation expressing the
25 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 $(1 + \text{annual rate})^5$.

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

27 ⁷³ Data from: Business Valuation Resources, “Benchmarking Identifiable Intangibles and Their
28 Useful Lives in Business Combinations” BVR 2012, p. 66 (www.bvresources.com).

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

1 42. A reasonable estimate of the corresponding market discount rate for this asset can
2 be based on the most current assessment of the risk factors recommended by the most reputable
3 industry sources.⁷⁵ The discount rate is made up of a series of components reflecting the time-
4 value of money (the so-called Risk Free rate⁷⁶), the general additional risk of equity returns
5 (known as the Equity Risk Premium⁷⁷), the additional variations of net income in the relevant
6 industry (the Industry Risk Premium), and the incremental risks unique to the asset class. Thus I
7 considered the risk-free rate of 4.0%,⁷⁸ a market equity risk premium of 5.0%,⁷⁹ as well as an
8 advertising industry risk premium of 3.66% based on generally accepted data sources.⁸⁰ In
9 addition, I considered a risk premium reflecting the incremental risks associated with intangible
10 assets relative to financial and tangible business assets of 6.0%.⁸¹ Adding together these various
11 components, I thus arrived at the discount rate for the Social Graph asset of 18.66%.⁸²

12 43. Consequently, applying the aforementioned method and inputs, which are the type
13 of methods and parameters applied by valuation professionals like myself, the (U.S.) Social
14 Graph asset relating to the U.S. is valued at approximately \$15 billion, as illustrated in the
15 following table:

16
17 ⁷⁵ Duff & Phelps, 2015 Valuation Handbook: Guide to the Cost of Capital, John Wiley & Sons, 2015

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

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

25 ⁷⁸ Technically, this rate is the normalized 20-year U.S. Treasury yield [Duff & Phelps (2015),
26 Ch. 3].

27 ⁷⁹ This is the considered *forward* equity risk premium recommended by Duff & Phelps.

28 ⁸⁰ 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.

⁸¹ 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>).

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

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

Year	Annual Profit (\$ millions)	Discount Factor (at 18.66%)	Discounted Value (\$ millions)
1	\$ 3,776	0.84274	\$ 3,182
2	3,776	0.71022	2,682
3	3,776	0.59853	2,260
4	3,776	0.50441	1,905
5	3,776	0.42509	1,605
6	3,776	0.35824	1,353
7	3,776	0.30190	1,140
8	3,776	0.25443	961
Total Value:			\$ 15,087

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

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

46. Absent specific Facebook network data,⁸³ from public information it can be ascertained that during 2010, Facebook had an average of 127.1 million monthly active users in the U.S.⁸⁴ On average, within Facebook as a whole, the average monthly active user sent nearly

⁸³ [REDACTED]

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

1 43 messages per month.⁸⁵ Thus, in 2010, I estimate that the U.S. user base sent approximately
2 65.4 billion messages.⁸⁶ The following Table shows the results of these estimates on an annual
3 basis.

4
5 Table 2
6 U.S. Messaging Activity
7 (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

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

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

19 49. Facebook researchers have published results of the formal characterization of the
20 entire social network of active members⁸⁸ of Facebook in May 2011, comprising 721 million

21
22 ⁸⁵ Considering Facebook’s disclosure in connection with the redesign of the Messenger platform,
23 stating that 350 million MAUs sent 15 billion messages per month, or an average of 42.857
24 messages per MAU/month, at: <https://www.facebook.com/notes/facebook-engineering/the-underlying-technology-of-messages/454991608919>.

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

27 ⁸⁷ According to Facebook, between August 2012 and May 2013 user engagement, as illustrated in
28 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>).

⁸⁸ 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,

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1 active users.⁸⁹ From this universe, 149 million are U.S. Facebook users.⁹⁰ Among these U.S.
2 social network users, there were 15.9 billion friendship links or graph “edges,” and the average
3 U.S. user had around 214 Facebook friends.⁹¹ The graph is highly connected, in the sense that
4 typical Facebook members are linked (as “friends” and “friends of friends”) in such a way with
5 the rest of the network as to be able to reach the vast majority of individuals with only a few
6 “hops” or jumps from one friend to another. Specifically, in the U.S. network the average
7 distance between people was found to be 4.3 friends and, furthermore, 96% of all Facebook
8 members were within 5 degrees of separation.⁹²

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

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

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

25 *Footnote continued from previous page*

18 Nov. 2011, Cornell University (<http://arxiv.org/abs/1111.4503v1>), p. 2.

26 ⁸⁹ *Id.* at p. 14.

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

28 ⁹¹ Ugander, et al. (2011) p. 2.

⁹² Ugander, et al. (2011) p. 5.

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$$V_t = L_t \times w_t$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

59. Facebook benefits from advertising revenue from adding the user-URL links into their targeting platform and from enhancing their understanding of how and what users share

1 links to. The benefit is defined not only by the potential act of generating additional revenue
2 from targeting ads to the senders of intercepted messages, but also by the additional use in better
3 targeting these and similar users (in marketing terms); and the benefit is ultimately proportional to
4 the amount of information intercepted from private messages.

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

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

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

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

28 ⁹³ CAC at §27 and 39.

1 the higher usage rates from Marketers incentivized by the higher Return of Investment (ROI) of
2 the advertising expenditures through the Facebook platform.

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

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

19 65. For this analysis, the general principles applied in identifying market valuations of
20 the economic worth of “acquiring” or “attracting” Facebook users to express their affinity for a
21 brand are consistent with the general Cost Approach to valuation; the measurement of value by
22 reference to the amount of money that would be required to replace the functionality of the
23

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

26 ⁹⁵ By definition, Sales can be seen as the product of marketing reach, times the impact of the ad
27 (leads per ad), times the yield (sales per lead). Thus, with a given degree of impact and yield, a
28 higher reach, measured by the Like count for example, generates higher sales. *See, e.g.*: D.
Buhalis and E. Mamalakis, “Social Media Return on Investment and Performance Evaluation in
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.

1 subject asset (the Like).⁹⁶ Ultimately, the realized value of a specific set of “Likes” would
2 generally exceed the cost, to a degree depending on the effectiveness of the specific marketing
3 strategies implemented to leverage them in practice.

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

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

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

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

24 ⁹⁸ See, e.g., National Public Radio, Planet Money “For \$75, This Guy Will Sell You 1,000
25 Facebook ‘Likes’” originally broadcast on May 16,
26 2012(<http://www.npr.org/sections/money/2012/05/16/152736671/this-guy-will-sell-you-sell-you-1-000-facebook-likes>).

27 ⁹⁹ Some hoaxes that repeatedly play out in the Facebook context are similar to a “chain letter”
28 model where users are encouraged to “copy and post” texts such as bogus “copyright”
29 notifications and spurious claims of privacy claims based on international law. See, e.g., W.
30 Oremus, “That Facebook Copyright Notice Is Still a Hoax” November 26, 2012, Slate
31 (http://www.slate.com/blogs/future_tense/2012/11/26/facebook_copyright_notice_berner_convention_status_update_still_a_hoax.html).

32 ¹⁰⁰ Nielsen, the company behind the Ratings system, now emphasizes the notion of ‘Brand Lift’ to
33 measure the effectiveness of online marketing and, specifically, through Facebook (Nielsen
34 “Quickly and Accurately Measure the Effectiveness of Your Online Ad Campaigns” available as:
35 www.nielsen.com/content/dam/nielsen/en_us/documents/pdf/Fact%20Sheets/Nielsen%20BrandLift.pdf).

1 68. Therefore, Facebook benefited from the accused practice of using the results of
2 scanning supposedly private messages for URLs and affecting Like counts because this practice
3 gave its clients, Marketers, an incremental impression of effectiveness of their Facebook
4 marketing campaigns. Marketers perceiving an incremental return of their spending on Facebook
5 campaigns were undoubtedly encouraged to allocate additional funds to these campaigns.

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

21
22
23
24
25 ¹⁰¹ *Advertising Age*, Nov. 22, 2011.

26 ¹⁰² “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)).

28 ¹⁰³ Study by SocialCode, LLC reported in trade publication *Advertising Age*
(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
TOTAL	\$ 14.93	\$ 5.37	\$9.56

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 \$1.07.¹⁰⁴ 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 \$0.55.¹⁰⁵ 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.¹⁰⁶

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.

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

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

¹⁰⁶ *Ibid*, p. 2.

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

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

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

18
19 Dated: November 13, 2015



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[®] 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).
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- “The Impact of Reorganization on Trademark Values,” in: [IP Management and Valuation Reporter](#), March 2012, BVR, Portland, OR.
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- “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 21st 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>
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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 82nd Annual Conference – Seattle, WA; July, 2007
- “Entrepreneurship and Innovation” (Session Chair) – Western Economics Association International 82nd 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)

Date Range	Parties	Case No.	Court	Status	Nature	Hired by	Involvement
February 2012	The Int'l. Aloe Science Council Inc. v. Fruit of the Earth, Inc.	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	A. Fraley, et al v. Facebook, Inc.	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	Jude Law v. Paloform Inc.	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	Scidera, Inc. v. Newsham Choice Genetics, LLC	AAA 16-174-00582-12	American Arbitration Association	Closed	Contract, Database	Neymaster Goode, PC	Expert Damages Rebuttal Report, Deposition, Arbitration
February 2014	Lambert Corp. v. LBJC, Inc. et al.	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	S. Mattocks v. Black Entertainment Television LLC	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	Tierra Intellectual Borinquen, Inc. v. Toshiba Corporation.	13-cv-47	United States District Court Eastern District of Texas	Settled	Patent Infringement	Ferraiuoli, LLC	Expert Damages Report, Deposition
Aug. 2014- Aug. 2015	S. Abu-Lughod v. S. Calis, Tocali, Inc., ASCII Media, Inc., et al.	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., Privacy Policy Litigation.</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>)
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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>)
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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)
5. Trade publication, Advertising Age, Nov. 22, 2011, (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/)
17. “Digital Advertising Report Q3 2015,” Adobe Digital Index (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>
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EXHIBIT 34

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EXHIBIT 35

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