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14 UNITED STATES DISTRICT COURT  
15 NORTHERN DISTRICT OF CALIFORNIA

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

19 Plaintiffs,

20 v.

21 FACEBOOK, INC.,

22 Defendant.

Case No. C 13-05996 PJH (SK)

**PLAINTIFFS' MOTION TO COMPEL  
PRODUCTION OF DOCUMENTS**

Date: Telephonic Hearing to be set  
by Court

Time: To be Set by Court

Judge: Hon. Phyllis J. Hamilton

Place: Courtroom 3, 3rd Floor

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**NOTICE OF MOTION AND MOTION**

TO ALL PARTIES AND THEIR COUNSEL OF RECORD:

PLEASE TAKE NOTICE that pursuant to this Court’s Order dated June 30, 2016 (Dkt. 203), the undersigned Plaintiffs will and hereby do move the Court for an order granting Plaintiffs’ Motion to Compel Further Document Searches by Defendant, Facebook, Inc. This motion is based upon this Notice of Motion; the accompanying Memorandum of Points and Authorities; the Declaration of David T. Rudolph filed herewith; the argument of counsel, if requested; and such other matters as the Court may consider.

**STATEMENT OF ISSUES TO BE DECIDED**

Whether, consistent with the requirements of Federal Rule of Civil Procedure 26(b), Defendant Facebook, Inc. should be compelled to produce documents identified through further document searches using Plaintiffs’ proposed search terms and custodians reflected in Appendix A.

1 **I. INTRODUCTION**

2 Pursuant to this Court’s Order (Dkt. 203), Plaintiffs respectfully request the Court to  
3 compel Facebook to search for and produce documents using search terms, methodologies, and  
4 custodians that are appropriately and proportionally calibrated, pursuant to Fed. R. Civ. P. 26(b),  
5 to the scope of Plaintiffs’ claims as articulated in the Court’s Class Certification Order (“Cert.  
6 Order”) and the Second Amended Complaint.<sup>1</sup> While the parties have, through meet-and-confer  
7 efforts, substantially narrowed their areas of disagreement post-certification, significant disputes  
8 remain.

9 The deficiencies addressed in this brief involve three, interrelated issues: **First**,  
10 Facebook’s current document production is woefully inadequate because Facebook collected  
11 documents through keyword searches that not only omitted highly-relevant terms (which  
12 Plaintiffs later identified through discovery) but also *substituted critical keywords with*  
13 *generalized terminology that Facebook acknowledges is not used internally.*<sup>2</sup> Thus, large swaths  
14 of relevant discovery were purposefully ignored. **Second**, and compounding the above error by  
15 relying on its objections as to scope (the validity of which this Court consistently has rejected,  
16 and which, in any event, are now inarguably invalid in light of the Cert. Order), Facebook trained  
17 its “predictive coding” software to categorize as irrelevant documents unrelated to “increasing the  
18 Like count” (Facebook’s definition of the “challenged practice”)—thus excluding relevant  
19 documents from further review and production. **Third**, Facebook remains unwilling to conduct  
20 searches from the files of relevant custodians.

21 Plaintiffs immediately objected to Facebook’s improper use of predictive coding and

22 \_\_\_\_\_  
23 <sup>1</sup> The documents sought by this motion are responsive to Plaintiffs’ Requests for Production 4-11  
24 and 18-20, which seek technical documents related to the claims at issue. The Requests, and  
25 Facebook’s responses thereto, are attached as Exhibits 3 and 4, respectively, to the Declaration of  
26 David Rudolph (“Rudolph Decl.”), filed herewith. Unless otherwise stated, all exhibits are to the  
27 Rudolph Declaration.

28 <sup>2</sup> As discussed in greater detail below, a prime example is Facebook’s exclusion of the terms  
“EntShare” and “EntGlobalShare” from any of its searches, instead using the terms “share object”  
and “global share object.” This omission is inexcusable given the fact that EntShares and  
EntGlobalShares lie at the heart of each of Plaintiffs’ claims, and is further inexplicable given the  
fact that Facebook’s seminal declarant and witness, Alex Himel, has acknowledged that “share  
object” and “global share object” [REDACTED]. *See*  
footnote 6, *infra*.

1 objected to Facebook’s inadequate keywords immediately upon determining that Facebook’s  
2 searches clearly had not implemented the terminology most relevant to this case. Plaintiffs  
3 promptly requested that Facebook supplement its production with documents located by searches  
4 using appropriate keywords. Facebook initially refused to produce any further documents, but  
5 eventually agreed to a clearly inadequate token search using a subset of the relevant terms on only  
6 *three* out of the more than *forty* custodians Facebook has identified thus far.

7 After repeatedly meeting-and-conferring on these topics, Plaintiffs have significantly  
8 narrowed their requests to terms—including keyword proximity searches limiting those terms—  
9 that correctly reflect the scope of Plaintiffs’ claims as articulated in the Second Amended  
10 Complaint and the Cert. Order, and which also address Facebook’s concerns regarding burden  
11 and proportionality, and thus satisfy Fed. R. Civ. P. 26(b). The parties’ respective positions on  
12 the appropriate search terms, as well as the appropriate temporal scope of discovery, is attached to  
13 this brief as Appendix A. While the parties have reached general agreement on many topics,  
14 substantial disputes remain, particularly with respect to time period for which documents should  
15 be searched. Given Facebook’s recent admissions both shortly prior to and shortly after Plaintiffs  
16 amended their Complaint, Facebook’s representations about what may or may not have ceased  
17 cannot be taken at face value. Plaintiffs respectfully request, pursuant to this Court’s Order (Dkt.  
18 203), that the Court order Facebook to conduct further document searches consistent with  
19 Plaintiffs’ proposed search terms, for the full class period.

## 20 **II. ARGUMENT**

### 21 **A. Facebook’s Initial Insufficient Document Production Efforts**

22 At the start of discovery, Facebook indicated it would search for documents containing  
23 various terms identified by Facebook from its first round of interrogatory responses. These terms  
24 largely consisted of non-technical phrases relating to Facebook’s “Like” counter, such as “like  
25 button count,” “share object,” “share button” or “URL” in proximity to terms such as  
26 “messenger” or █████<sup>3</sup> Unbeknownst to Plaintiffs, however, these terms did not reflect the  
27 actual terminology employed internally by Facebook engineers with respect to the practices at

28 <sup>3</sup> Ex. 11 (Letter dated May 13, 2015 from Facebook’s counsel to Plaintiffs’ counsel).

1 issue, and omitted many key components of Facebook’s architecture that are employed in  
2 scanning, cataloging, and using Private Message content. Moreover, *after* Facebook indicated it  
3 would collect and review documents based on these search terms, it revealed that, rather than  
4 manually review the documents for relevance, it would employ computer-aided “predictive  
5 coding” to *further* narrow the documents related to these narrow search terms for subsequent  
6 manual review. Plaintiffs objected to Facebook’s implementation of predictive coding, pointing  
7 out that predictive coding is designed to be used *in lieu of*—as opposed to *in addition to*—  
8 keyword searches. Facebook’s process of keyword culling is discouraged and recognized by  
9 courts and predictive coding experts as a flawed methodology that is likely to filter out a  
10 significant portion of responsive documents.<sup>4</sup> As such, Facebook’s document production efforts  
11 were flawed from their inception, not only by improper search terms, but also by a coding and  
12 review process that improperly narrowed those documents even further.

13 Compounding this problem, in implementing its predictive coding, Facebook unilaterally  
14 imposed an improperly restrictive definition of relevance that this Court has already rejected  
15 multiple times,<sup>5</sup> and which is inarguably untenable in light of the Cert. Order. Just as Facebook  
16 failed to include search terms related to the myriad functionalities and uses described below,  
17 Facebook also omitted those functionalities and uses when it was training the software to learn  
18 the characteristics of relevant documents. In short, since Facebook’s predictive coding software  
19 was never trained that the appropriate concepts were relevant, it could not identify as relevant  
20 documents related to these concepts. Facebook’s refusal to implement an appropriate standard  
21 for relevance has thus guaranteed that relevant documents were withheld from production and  
22 still need to be produced.

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24 <sup>4</sup> See *Tinto v. Vale*, No. 14-3042, 2015 WL 4367250, at \*1 (S.D.N.Y. July 15, 2015) (“[P]re-  
25 culling [using keywords] should not occur in a perfect world.”); *Progressive Cas. Ins. Co. v.*  
26 *Delaney*, No. 11-678, 2014 WL 3563467, at \*11-12 (D. Nev. July 18, 2014) (where parties had  
stipulated to a keyword then manual review protocol, the court would not allow Progressive to  
use predictive coding only on the positive keyword hits).

27 <sup>5</sup> See, e.g., Dkt. 83 (June 3, 2015 Order), at 7 (rejecting Facebook’s argument that challenging  
28 “any ‘interception’ of messages containing URLs for any purpose” demonstrated a shift in  
position from allegations in Plaintiffs’ CAC); Dkt. 130 (October 14, 2015 Order), at 8 (same)  
(citing CAC at ¶ 86); *Id.* at 13 (citing CAC at ¶¶ 30, 49-51).

1           **B. Facebook’s Inadequate Keywords**

2           Facebook proposed grossly inadequate search terms early on in the case, before producing  
3 documents that revealed Facebook’s internal terminology. For example, in light of the Cert.  
4 Order, it is indisputable that two technical terms at the core of this litigation are “EntShare” and  
5 “EntGlobalShare” (the data structures Facebook creates from scanning URLs within messages to,  
6 *inter alia*, increment Like counters).<sup>6</sup> Remarkably, in its search terms, Facebook used the term  
7 “share object” and “global share object,” respectively, *in lieu* of “EntShare” and  
8 “EntGlobalShare.” However, Facebook’s [REDACTED]

9 [REDACTED]. Alex Himel—an engineering director whom Facebook has used to verify interrogatory  
10 responses, provide multiple declarations, and to provide 30(b)(6) testimony related to message  
11 scanning and the Like button—stated [REDACTED]

12 [REDACTED]  
13 [REDACTED]  
14 [REDACTED]  
15 [REDACTED]  
16 [REDACTED]<sup>7</sup>

17           Moreover, as described in detail in the Cert. Order,<sup>8</sup> the scope of the message scanning is  
18 broader than incrementing “Like” counters. As further described below (and tracking the Cert.  
19 Order), discovery also has revealed the internal architecture (and relevant technical terms)  
20 utilized by Facebook to retain, analyze, and use Private Message data.<sup>9</sup> Yet, Facebook  
21 deliberately chose not to use the core technical terms relevant to these functionalities and uses,  
22 and that failure must be remedied going forward.

23           **C. Plaintiffs’ Proposed Searches Fall Within the Constraints Imposed By the**  
24           **Court’s Class Certification Order**

25           Against this backdrop, the parties have negotiated further search terms. As can be seen in

26 <sup>6</sup> See Dkt. 192 (Cert. Order), at 4.

27 <sup>7</sup> Ex. 5 (Himel Dep.), at 154:19-155:7.

28 <sup>8</sup> Dkt. 192, at 4-6.

<sup>9</sup> See also Dkt. 196 (Second Amended Complaint, “SAC”), ¶¶ 45-55.

1 Appendix A, the parties are largely in agreement as to the proper terms to be used in further  
2 keyword searches. As described in detail in the Cert. Order and the SAC, the scope of the  
3 message scanning is significantly broader than incrementing “Like” counters (the focus of  
4 Facebook’s previous document collection efforts), and includes (a) logging Private Message  
5 content for future use;<sup>10</sup> (b) using Private Message content to push recommendations to its users<sup>11</sup>  
6 and targeting users based on Likes and other data points;<sup>12</sup> and (c) providing demographics data  
7 and other analytics related to users and their Private Message content.<sup>13</sup>

8 The primary areas of disagreement are (1) what terms should be included in the proximity  
9 terms further limiting those searches, (2) the proper time period for the searches, and (3) the  
10 proper custodians. Plaintiffs’ search proposal has been carefully crafted as a reasonable  
11 compromise to address Facebook’s proportionality concerns, and it is neither appropriate nor  
12 reasonable to limit Plaintiffs’ proposed searches any further. Plaintiffs’ search terms are focused  
13 on highly technical terms directly related to the source code devices Facebook uses to intercept  
14 Private Message content as well as the internal systems that use that content, as described in the  
15 Cert. Order and in the SAC, and accordingly these requests satisfy the proportionality and other  
16 requirements of Rule 26(b)(1) and (b)(2):

17 **Creation of EntShares and EntGlobalShares:** The terms “EntShare” and  
18 “EntGlobalShare” are at the center of Plaintiffs’ claims. As the Court noted, Plaintiffs allege that  
19 Facebook intercepts Private Message content for uses not related to message delivery through the  
20 creation and manipulation of EntShare and EntGlobalShare objects.<sup>14</sup> Facebook appears to  
21 concede the centrality of these terms, given that it has agreed to search for these terms for the

22 <sup>10</sup> Relevant terms include: EntShare, EntGlobalShare, Link\_stats / [REDACTED]

23 <sup>11</sup> Relevant terms include: [REDACTED]  
24 [REDACTED] (which is a critical term in multiple contexts).

25 <sup>12</sup> Relevant terms include: [REDACTED].

26 <sup>13</sup> Relevant terms include: Insights, Insights Dashboard, [REDACTED], Graph API,  
27 [REDACTED], and [REDACTED].

28 <sup>14</sup> Dkt. 192, at 4 (“Plaintiffs then specifically describe the three ways in which the message data is allegedly redirected and used. The first is to ‘fuel its algorithms for measuring user engagement and making recommendations.’ This alleged use is related to the ‘EntShare’ and the ‘EntGlobalShare’ described above...”).

1 entire class period (albeit with improperly restrictive proximity searches).

2 **Logging of Data Created From Private Message Content:** Once it scanned its users’  
3 Private Message content, Facebook logged that data in several places on its system for additional,  
4 subsequent use. This is directly relevant to Plaintiffs’ allegations regarding how Facebook  
5 utilized message content.<sup>15</sup> These logging tables include or relate to [REDACTED]<sup>16</sup>  
6 the [REDACTED] table, and the [REDACTED] log. The [REDACTED] table has fueled, *inter*  
7 *alia*, APIs that are made “publicly [available] in order to allow for the development of products  
8 and features that incorporate engagement statistics—products that take into account what people  
9 are interacting with now.”<sup>17</sup> Similarly, the [REDACTED] table and [REDACTED] log  
10 stored data related to Private Message content<sup>18</sup> that has been used by Facebook in at least several  
11 instances unrelated to message transmission, including fueling recommendations,<sup>19</sup> displaying  
12 users’ actions in an “Activity Feed,”<sup>20</sup> and fueling queries to a product called the [REDACTED]  
13 [REDACTED]<sup>21</sup> Each of the above-described components of Facebook’s system are, by Facebook’s own  
14 admission, areas where data created from Private Message content are logged for further use.

15 **Use of Private Message Content for Recommendations:** Facebook used information  
16 acquired from intercepted message content to make recommendations to its users. Plaintiffs’  
17 expert, Dr. Jennifer Golbeck, identified (1) [REDACTED] (2)  
18 [REDACTED] and (3) [REDACTED] as portions of the Facebook platform that took  
19 data from Private Messages, *inter alia*, to assess the popularity of the URLs contained therein,  
20 identify trends among users, and push content across the social network.<sup>22</sup>

21 **Analytics of Private Message Content:** Facebook exposed Private Message content—  
22 including the URLs privately shared by users—in both internal and external analytics, thus

23 \_\_\_\_\_  
24 <sup>15</sup> See SAC ¶¶ 3, 28, 39, 45-55.

25 <sup>16</sup> See FB000008505.

26 <sup>17</sup> Dkt. 149-2 (Jan. 15 Decl. of Alex Himel), at ¶ 66.

27 <sup>18</sup> See FB000003093, FB000003096.

28 <sup>19</sup> Dkt. 184-3 (Fechete Decl.), ¶¶ 13-14, 18, 26; Dkt. 199-2 (Golbeck Report), ¶¶ 44-54.

<sup>20</sup> FB000002843.

<sup>21</sup> FB000007859.

<sup>22</sup> See Dkt. 199-2 (Golbeck Report), ¶¶ 56-64.



1 enabling Facebook and third parties to view demographic data about the subjects and senders of  
2 the Private Messages. However, Plaintiffs received only a handful of documents referencing  
3 these areas of Facebook’s platform: [REDACTED] and “Graph  
4 API”;<sup>23</sup> [REDACTED] and  
5 [REDACTED]<sup>24</sup>  
6 [REDACTED]: Facebook experimented with ad  
7 targeting based on Private Message content, [REDACTED]  
8 [REDACTED]<sup>25</sup> The document also states that Facebook [REDACTED]  
9 [REDACTED] Similarly,  
10 Facebook had an [REDACTED]  
11 [REDACTED] and discussed a [REDACTED] and [REDACTED]  
12 to increase Likes among users.<sup>26</sup> Plaintiffs have received no further documents related to these  
13 practices, which directly relate to Plaintiffs’ allegations regarding Facebook’s improper  
14 interception and use of Private Message content.<sup>27</sup>

15 **1. Facebook’s Proposed Proximity Searches Are Unduly Restrictive and**  
16 **Inappropriate**

17 The proximity searches and time limitations Facebook insists on using are inappropriate  
18 and appear specifically designed to avoid locating relevant documents going to the core of  
19 Plaintiffs’ claims. This is particularly so in light of the fact that the search and proximity terms  
20 that Plaintiffs proposed are highly technical terms related to the implementation of Facebook’s  
21 source code devices for intercepting and using URLs sent in Private Messages, and are thus  
22 tailored to provide proportional discovery pursuant to Rule 26(b)(1) related to Plaintiffs’ claims.

23 As Plaintiffs have explained to Facebook during the meet-and-confer process, Facebook  
24 produced numerous relevant documents containing Plaintiffs’ proposed terms that do not contain

25 \_\_\_\_\_  
26 <sup>23</sup> FB000008505.

27 <sup>24</sup> FB000002462.

28 <sup>25</sup> Ex. 12 (FB000008271), at FB000008273.

<sup>26</sup> FB000014365.

<sup>27</sup> SAC, ¶¶ 3, 28, 39 (alleging Facebook uses Private Message content for targeted advertising).

1 the term “message,” and it is not appropriate to limit the searches to only documents that contain  
2 variants on that term. All of Facebook’s proposed search terms are cabined to proximity  
3 searches of within 50 words of (message\* or messenger or ██████████ or inbox\*) AND within 50  
4 words of (EntShare\* or EntGlobalShare\* or ██████████ or ██████████), and in some cases  
5 adding additional terms. There is no reasonable basis for such a restriction, and in fact this  
6 restriction appears designed to avoid the production of otherwise relevant documents. This is  
7 demonstrated by the fact that many relevant documents already produced do not contain  
8 “message,” “messenger,” or ██████████ anywhere, much less within 50 words of any other relevant  
9 term.<sup>28</sup> Additionally, the unduly restrictive nature of such a limitation is made apparent by  
10 several highly relevant documents, in which the only use of the term “message” is in the context  
11 of the “begin forwarded message” formatting from the custodian’s email client; but for the fact  
12 that the email had been forwarded, such documents would not be produced under Facebook’s  
13 proposed search schema.<sup>29</sup> While the parties appear to have large areas of agreement regarding  
14 the terms to be used for proximity searches,<sup>30</sup> Facebook’s insistence on limiting its searches to  
15 *only* those within 50 words of (message\* or messenger or ██████████ or inbox\*) is demonstrably

16 \_\_\_\_\_  
17 <sup>28</sup> See, e.g., FB000007859 (discussing ██████████ ██████████  
18 ██████████); FB000004051 (discussing, inter alia, EntShare, EntGlobalShare, and ██████████);  
19 FB000001052 (discussing storing likes and shares ██████████ ██████████); FB000000659 (discussing objects,  
20 ██████████ like counts, insights, ██████████, and ██████████);  
21 FB000001206 (discussing ██████████, and Graph API); and  
22 FB000008821 (providing an overview of Facebook’s targeted advertising).

23 <sup>29</sup> See, e.g., FB000008505 (discussing Insights, ██████████, Graph API, ██████████, how ██████████  
24 ██████████ logging and displaying data related to likes and shares, and database tables tracking  
25 likes and shares); FB000002655 (discussing Open Graph API and ██████████  
26 ██████████).

27 <sup>30</sup> Two notable areas of disagreement are the terms ██████████ and “bootcamp,” which Plaintiffs  
28 propose to include but Facebook does not agree to. As explained in Plaintiffs’ concurrently-filed  
29 motion to compel configuration tables, ██████████ is the database from which Facebook’s  
30 “Insights” product, which shared metrics about Private Message content with third parties, drew  
31 data. “Bootcamp” appears to be Facebook’s internal training program and was the process  
32 through which Facebook introduced its systems to new employees, and therefore documents  
33 containing relevant terms and the term “bootcamp” will likely provide explanatory context for  
34 those terms. See, e.g., FB000003118 (April 25, 2012 internal email stating ██████████  
35 ██████████  
36 ██████████  
37 ██████████  
38 ██████████).

██████████ FB000002130 ██████████

1 inappropriate. Given that the parties have agreed in many respects on the scope of terms and  
2 proximity searches, Plaintiffs' proposals do not add significant burden or expense to the searches  
3 Facebook has already proposed, pursuant to Fed. R Civ. P. 26(b)(1).

4 **2. The Searches Should Be Conducted For the Entire Class Period**

5 With one exception, Facebook seeks to cabin its proposed searches to short subsets of the  
6 class period on the grounds that the identified practices have ceased. Even if true (which  
7 Plaintiffs dispute), this claim provides no basis to limit searches for documents relevant to the  
8 challenged practices for less than the entire class period.

9 The searches should be performed for documents and ESI dated from the previously  
10 agreed-upon start of the document production period of April 2010, up through May 18, 2016, the  
11 end of the class period.<sup>31</sup> Facebook's assertions that certain practices may have "ceased" as of  
12 certain dates provides no basis to limit the time period for searches. *First*, as this Court is aware,  
13 subsequent discovery has demonstrated that, at least in one instance, Facebook's assertions  
14 regarding when certain practices ceased were incorrect, and Plaintiffs require documents  
15 regarding these practices from the full class period to test the accuracy of Facebook's assertions.<sup>32</sup>  
16 *Second*, documents related to the specific practices identified by Plaintiffs' search terms are  
17 relevant not only to determine whether and when the practices may have ceased, but also to  
18 provide full disclosure of Facebook's implementation of those practices and subsequent use of the  
19 contents of communications intercepted by those practices. *Third*, as discussed in detail in  
20 Plaintiffs' concurrently-filed motions to compel source code and configuration tables for the full  
21 class period, Facebook's assertion that it has ceased sharing Private Message content with third  
22 parties is demonstrably false: recent *post-amendment* admissions by Facebook demonstrate that it  
23 continues to intercept URLs in Private Messages and allows third-parties free access to those  
24 URLs—all without any disclosure to users of this Practice.<sup>33</sup>

25 <sup>31</sup> Ex. 2 (Email correspondence between counsel for the parties).

26 <sup>32</sup> See Dkt. 185 (Facebook's Errata) and Dkt. 187 (Plaintiffs' Objections thereto), (discussing  
27 Facebook's false assertion that the ██████████ containing URLs intercepted from  
Private Messages and used to provide targeted recommendations was deleted prior to the class  
period).

28 <sup>33</sup> See Ex. 6 (*Why you shouldn't share links on Facebook*, Quartz (June 8, 2016)).

1                                   **3. The Searches Should Be Conducted on the Full Range of Appropriate**  
2                                   **Custodians**

3                                   Additionally, Facebook has still provided no firm commitment regarding the custodians it  
4 is willing to search. Facebook has stated it is “willing to consider” producing documents from  
5 “some” of the non-individual custodial sources, such as its document repositories [REDACTED] and [REDACTED].  
6 Given that Facebook has already produced numerous documents from each of these custodians  
7 that contain the search terms proposed in Appendix, there should be no ambiguity regarding  
8 Facebook’s responsibility to search those custodians. Facebook has resisted searching documents  
9 from the non-individual custodial sources on the grounds that “those sources do not have search  
10 capabilities that will allow for the types of searches we are considering for emails, and they also  
11 are not amenable to efficient collection processes.”<sup>34</sup> However, this is not consistent with  
12 Facebook’s own employees’ testimony about its document systems; [REDACTED]

13 [REDACTED]  
14 [REDACTED]  
15 [REDACTED]<sup>35</sup> Facebook has  
16 already produced numerous relevant documents from internal system sources and presents no  
17 reason why it cannot perform further searches on those sources given the narrow and proportional  
18 scope of the requested discovery.<sup>36</sup>

19                                   **III. CONCLUSION**

20                                   For the foregoing reasons, Plaintiffs respectfully request that the Court order Facebook to  
21 produced documents identified through searches consistent with Plaintiffs’ proposed search terms  
22 and custodians reflected in Appendix A.

23  
24 \_\_\_\_\_  
25 <sup>34</sup> Ex. 2 (June 28, 2016 email from Facebook’s counsel).

26 <sup>35</sup> Ex. 5 (Himel Dep.), at 255-14-256:12 [REDACTED].

27                                   Additionally, Plaintiffs request all documents containing the term “EntShare” from any  
28 Facebook wiki sites or other portions of Facebook devoted to or containing reference material on  
Facebook’s operation (e.g., [REDACTED]), including those located on web pages with URLs beginning  
with the following designations: [REDACTED]

1 Dated: August 2, 2016

By: /s/ Michael W. Sobol  
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APPENDIX A

Term	Facebook's Proposal to Include	Plaintiffs' Counter-Proposal of Additional Limiting Terms	Facebook's Counter-Proposal
Graph API	Yes, limited by "w/50 (URL w/50 (message* or messenger* or █████*))" and ending December 31, 2012	Limited by "w/50 message* or messenger* or █████* or inbox* or EntShare* or EntGlobalShare* or █████* or bootcamp*"	Limited by "w/50 (message* or messenger* or █████* or inbox*) AND w/50 (EntShare* or EntGlobalShare* or █████* or bootcamp*)" and ending December 31, 2012
█████ or █████	Yes, limited by "w/50 (URL w/50 (message* or messenger* or █████*))" and ending December 31, 2012	Limited by "w/50 message* or messenger* or █████* or inbox* or EntShare* or EntGlobalShare* or █████* or bootcamp*"	Limited by "w/50 (message* or messenger* or █████* or inbox*) AND w/50 (EntShare* or EntGlobalShare* or █████* or bootcamp*)" and ending December 31, 2012
█████	Yes, limited by "w/50 (URL w/50 (message* or messenger* or █████*))"	Limited by "w/50 message* or messenger* or █████* or inbox* or EntShare* or EntGlobalShare* or █████* or like* or share* or bootcamp*"	Limited by "w/50 (message* or messenger* or █████* or inbox*) AND w/50 (EntShare* or EntGlobalShare* or █████* or ((like* or share*) w/2 URL) or bootcamp*)"
█████	Yes, limited by "w/50 (URL w/50 (message* or messenger* or █████*))" and ending December 31, 2012	Limited by "w/50 message* or messenger* or █████* or inbox* or EntShare* or EntGlobalShare* or █████* or insights* or █████* or bootcamp*"	Limited by "w/50 (message* or messenger* or █████* or inbox*) AND w/50 (EntShare* or EntGlobalShare* or █████* or insights* or █████* or bootcamp*)" and ending December 31, 2012
█████	Yes, limited by "w/50 (URL w/50 (message* or messenger* or █████*))"	Limited by "w/50 message* or messenger* or █████* or inbox* or EntShare* or	Limited by "w/50 (message* or messenger* or █████* or inbox*) AND w/50

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Term	Facebook's Proposal to Include	Plaintiffs' Counter-Proposal of Additional Limiting Terms	Facebook's Counter-Proposal
	[REDACTED]*))"	EntGlobalShare* or [REDACTED]* or [REDACTED]* or [REDACTED]* or shortage* of like* or share* or activity feed* or bootcamp* or Gmail* or Google**"	(EntShare* or EntGlobalShare* or [REDACTED]* or [REDACTED]* or [REDACTED]* or [REDACTED]* or (shortage w/5 (like* or share*)) or activity feed* <del>or bootcamp* or Gmail* or Google*</del> )"
[REDACTED]	Yes, limited by "w/50 (URL w/50 (message* or messenger* or [REDACTED]*))" and ending December 31, 2012	Limited by "w/50 message* or messenger* or [REDACTED]* or inbox* or EntShare* or EntGlobalShare* or [REDACTED]* or [REDACTED]* or [REDACTED]* or API* or [REDACTED]* or Counter* or Demographic* or analytic* or [REDACTED]* or [REDACTED]* or [REDACTED]* or Domain Insights* or [REDACTED]* or [REDACTED]* or graph* or bootcamp**"	Limited by "w/50 (message* or messenger* or [REDACTED]* or inbox*) AND w/50 (EntShare* or EntGlobalShare* or [REDACTED]* or [REDACTED]* or [REDACTED]* or [REDACTED]* or API* or [REDACTED]* or Counter* or Demographic* or analytic* <del>or [REDACTED]* or [REDACTED]* or [REDACTED]* or Domain Insights* or [REDACTED]* or [REDACTED]* or graph*)</del> " and ending December 31, 2012
[REDACTED]	Yes, limited by "w/50 (URL w/50 (message* or messenger* or [REDACTED]*))" and ending December 31, 2012	Limited by "w/50 message* or messenger* or [REDACTED]* or inbox* or EntShare* or EntGlobalShare* or [REDACTED]* or [REDACTED]* or bootcamp* or [REDACTED]* or [REDACTED]* or API* or [REDACTED]* or Counter* or Demographic* or analytic* or [REDACTED]* or [REDACTED]* or SharePro* or [REDACTED]* or [REDACTED]* or Domain Insights* or [REDACTED]* or [REDACTED]* or graph**"	Limited by "w/50 (message* or messenger* or [REDACTED]* or inbox) AND w/50 (EntShare* or EntGlobalShare* or [REDACTED]* or [REDACTED]* or [REDACTED]* or <del>bootcamp*</del> or [REDACTED]* or [REDACTED]* or [REDACTED]* or API* or [REDACTED]* or Counter* or Demographic* or analytic* <del>or [REDACTED]* or [REDACTED]* or [REDACTED]* or SharePro* or [REDACTED]* or [REDACTED]* or Domain Insights* or [REDACTED]* or [REDACTED]* or graph*)</del> "

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Term	Facebook's Proposal to Include	Plaintiffs' Counter-Proposal of Additional Limiting Terms	Facebook's Counter-Proposal
			<del>Domain Insights* or [redacted]* or [redacted]* or graph*)” and ending December 31, 2012</del>
[redacted]	Yes, limited by "w/50 (URL w/50 (message* or messenger* or [redacted]*))" and ending July 9, 2014, when the backup system was discontinued	Limited by “w/50 message* or messenger* or [redacted]* or inbox* or EntShare* or EntGlobalShare* or [redacted]* or [redacted]* or bootcamp* or [redacted]* or [redacted]*”	Limited by “w/50 (message* or messenger* or [redacted]* or inbox*) AND w/50 (EntShare* or EntGlobalShare* or [redacted]* or [redacted]* or bootcamp* or [redacted]* or [redacted]*” and ending July 9, 2014, when the backup system was discontinued
[redacted]	Yes, limited by "w/50 (URL w/50 (message* or messenger* or [redacted]*))" and ending July 9, 2014, when the backup system was discontinued	Limited by “w/50 message* or messenger* or [redacted]* or inbox* or EntShare* or EntGlobalShare* or [redacted]* or [redacted]* or bootcamp* or [redacted]* or [redacted]* or [redacted]* or API*”	Limited by “w/50 (message* or messenger* or [redacted]* or inbox*) AND w/50 (EntShare* or EntGlobalShare* or [redacted]* or [redacted]* or tracking_info [redacted]* or bootcamp* or [redacted]* or [redacted]* or [redacted]* or [redacted]* or API*)” and ending July 9, 2014, when the backup system was discontinued
[redacted]	Yes, limited by "w/50 (URL w/50 (message* or messenger* or [redacted]*))”	Limited by “w/50 message* or messenger* or [redacted]* or inbox* or EntShare* or EntGlobalShare* or [redacted]* or [redacted]* or bootcamp* or share* or [redacted]* or [redacted]* or [redacted]* or target* or recommend* or Insights* or API*”	Limited by “w/50 (message* or messenger* or [redacted]* or inbox*) AND w/50 (EntShare* or EntGlobalShare* or [redacted]* or [redacted]* or bootcamp* or share* or [redacted]* or [redacted]* or target* or recommend* or Insights* or API*)”
EntGlobalShare	Yes, limited by "w/50 (URL	Limited by “w/50 message* or messenger*	Limited by “w/50 (message* or









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Term	Facebook's Proposal to Include	Plaintiffs' Counter-Proposal of Additional Limiting Terms	Facebook's Counter-Proposal
		██████████* or ██████████ ██████████* or Domain Insights* or ██████████* or ██████████* or graph* or bootcamp*”	██████████* or ██████████* or ██████████* or <del>Domain Insights* or</del> ██████████* or ██████████ <del>██████████* or graph* or</del> <del>bootcamp*”) and</del> <b>ending December 31, 2012</b>
██████████	Yes, limited by "w/50 (URL w/50 (message* or messenger* or ██████████*))" and <b>ending            December 31,            2012</b>	Limited by “w/50 message* or messenger* or ██████████* or inbox* or EntShare* or EntGlobalShare* or ██████████* or ██████████* or ██████████* or ██████████ * or API* or ██████████* or Counter* or Demographic* or analytic* or ██████████* or ██████████* or ██████████* or ██████████ * or Domain Insights* or ██████████* or ██████████* or graph* or bootcamp*”	Limited by “w/50 (message* or messenger or ██████████* or inbox*) <b>AND w/50</b> (EntShare* or EntGlobalShare* or ██████████* or ██████████* or ██████████* or ██████████* or ██████████* or <del>API* or</del> ██████████* or Counter* or Demographic* or analytic* or ██████████* or ██████████* or <del>or</del> ██████████* or <del>Domain Insights* or</del> ██████████* or ██████████ <del>██████████* or graph* or</del> <del>bootcamp*”) and</del> <b>ending December 31,            2012</b>
██████████	Yes, limited by "w/50 (URL w/50 (message* or messenger* or ██████████*))" and <b>ending            December 31,            2012</b>	Limited by “w/50 message* or messenger* or ██████████* or inbox* or EntShare* or EntGlobalShare* or ██████████* or ██████████* or ██████████* or ██████████ * or API* or ██████████* or Counter* or Demographic* or analytic* or ██████████* or ██████████* or ██████████* or ██████████ * or Domain Insights* or ██████████* or ██████████* or graph*	Limited by “w/50 (message* or messenger or ██████████* or inbox*) <b>AND w/50</b> (EntShare* or EntGlobalShare* or ██████████* or ██████████* or ██████████* or ██████████* or ██████████* or ██████████* or <del>API* or</del> ██████████* or Counter* or Demographic* or analytic* <del>or</del> ██████████* or ██████████* or <del>or</del> ██████████* or <del>Domain Insights* or</del> ██████████* or ██████████ <del>██████████* or graph* or</del> <del>bootcamp*”) and</del> <b>ending December 31,            2012</b>

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Term	Facebook's Proposal to Include	Plaintiffs' Counter-Proposal of Additional Limiting Terms	Facebook's Counter-Proposal
		or bootcamp**	<del>Domain Insights* or [redacted] * or [redacted] * or graph* or bootcamp*)</del> and ending December 31, 2012
Insights	Yes, limited by "w/50 (URL w/50 (message* or messenger* or [redacted]*))" and ending December 31, 2012	Limited by "w/50 message* or messenger* or [redacted]* or inbox* or EntShare* or EntGlobalShare* or [redacted]* or [redacted]* or bootcamp* or [redacted]* or [redacted]* or API* or [redacted]* or Counter* or Demographic* or analytic* or [redacted]* or [redacted]* or [redacted]* or Domain Insights* or [redacted]* or [redacted]* or graph**"	Change primary term to "Domain Insights" and Limited by "w/50 (message* or messenger* or [redacted]* or inbox*) AND w/50 (EntShare* or EntGlobalShare* or [redacted]* or [redacted]* or bootcamp* or [redacted]* or [redacted]* or API* or [redacted]* or Counter* or Demographic* or analytic* or [redacted]* or [redacted]* or [redacted]* or Domain Insights* or [redacted]* or [redacted]* or graph*)" and ending December 31, 2012
[redacted]	Yes, limited by "w/50 (URL w/50 (message* or messenger* or [redacted]*))" and ending July 9, 2014, when the backup system was discontinued	Limited by "w/50 message* or messenger* or [redacted]* or inbox* or EntShare* or EntGlobalShare* or [redacted]* or [redacted]* or bootcamp* or recommend* or [redacted]* or [redacted]* or [redacted]* or stats* or [redacted]* or URL**"	Limited by "w/50 (message* or messenger* or [redacted]* or inbox*) AND w/50 (EntShare* or EntGlobalShare* or [redacted]* or [redacted]* or bootcamp* or recommend* or [redacted]* or [redacted]* or [redacted]* or stats* or [redacted]* or URL*)" and ending July 9, 2014, when the backup system was discontinued

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Term	Facebook's Proposal to Include	Plaintiffs' Counter-Proposal of Additional Limiting Terms	Facebook's Counter-Proposal
[REDACTED]	Not Included	Limited by "w/50 message* or messenger* or [REDACTED]* or inbox* or EntShare* or EntGlobalShare* or [REDACTED]* or [REDACTED]* or bootcamp* or [REDACTED]* or [REDACTED]* or recommend* or [REDACTED]* or [REDACTED]* or URL*"	Limited by "w/50 (message* or messenger or [REDACTED]* or inbox*) AND w/50 (EntShare* or EntGlobalShare* or [REDACTED]* or [REDACTED]* or bootcamp* or scribe* or [REDACTED]* or recommend* or [REDACTED]* or [REDACTED]* or [REDACTED]* or URL*)" and ending February 1, 2012
[REDACTED]	Not Included	Limited by "w/50 message* or messenger* or [REDACTED]* or inbox* or EntShare* or EntGlobalShare* or [REDACTED]* or [REDACTED]* or bootcamp* or [REDACTED]* or [REDACTED]* or recommend* or [REDACTED]* or [REDACTED]* or URL*"	Limited by "w/50 (message* or messenger or [REDACTED]* or inbox*) AND w/50 (EntShare* or EntGlobalShare* or [REDACTED]* or [REDACTED]* or bootcamp* or [REDACTED]* or recommend* or [REDACTED]* or [REDACTED]* or URL*)"

1 **Proposed Custodians:**

- 2 1. Matt Jones  
3 2. Scott Renfro  
4 3. Malorie Lucich  
5 4. Mike Vernal  
6 5. Mark Kinsey  
7 6. Austin Haugen  
8 7. Frederic Wolens  
9 8. Caryn Marooney  
10 9. Alex Himel  
11 10. Ray He  
12 11. Dan Fechete  
13 12. Facebook Temp  
14 13. Facebook Email  
15 14. Salesforce  
16 15. Facebook  
17 16. Help Center Internal  
18 17. Facebook Internal  
19 18. Dev Site  
20 19. Wiki  
21 20. Mathew Varghese  
22 21. Tasks

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