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5	VS.) CASE NO.: IPR2025-00299	5	Stipulations..... 5
6	STERLING COMPUTERS) U.S. Patent No. 7,716,217	6	DR. LATIFUR KHAN
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10	*****	10	
11	ORAL DEPOSITION OF	11	
12	DR. LATIFUR KHAN	12	
13	NOVEMBER 13, 2025	13	
14	*****	14	
15		15	
16	ORAL DEPOSITION OF DR. LATIFUR KHAN, produced as a	16	
17	witness at the instance of the Petitioner, and duly	17	
18	sworn, was taken in the above-styled and numbered cause	18	
19	on November 13, 2025, from 9:08 a.m. to 5:09 p.m.,	19	
20	before Lisa F. DeMoe, CSR, RPR in and for the State of	20	
21	Texas, reported by machine shorthand, at the offices of	21	
22	Regus, located at 1220 River Bend Drive, Suite 250,	22	
23	Dallas, Texas, in accordance with the U.S. Patent and	23	
24	Trademark Office Rules of Civil Procedure and the	24	
25	provisions stated on the record or attached hereto.	25	

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1	A P P E A R A N C E S	1	EXHIBITS
2	FOR THE PETITIONER:	2	NO. DESCRIPTION PAGE
3	Mr. Ethan Plail	3	Exhibit 8 "Emergency-Driven Assured Information
4	WHITE & CASE	4	Sharing in Secure Online Social
5	701 Thirteenth Street, NW	5	Networks: A Position Paper".....132
6	Washington, D.C. 20005	6	Exhibit 9 "Estimating Twitter User Location Using
7	202.626.3586	7	Social Interactions - A Content Based
8	202.557.6025 (Fax)	8	Approach".....136
9	Ethan.plail@whitecase.com	9	Exhibit 10 "Tweets Mining Using Wikipedia and
10	FOR THE PATENT OWNER:	10	Impurity Cluster Management".....141
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<p style="text-align: right;">Page 5</p> <p>1 PROCEEDINGS</p> <p>2 DR. LATIFUR KHAN,</p> <p>3 having been first duly sworn, testified as follows:</p> <p>4 EXAMINATION</p> <p>5 BY MR. PLAIL:</p> <p>6 Q. Good morning, Dr. Khan.</p> <p>7 A. Good morning.</p> <p>8 Q. Have you ever been deposed before?</p> <p>9 A. Sorry?</p> <p>10 Q. Have you ever been deposed before?</p> <p>11 A. No.</p> <p>12 Q. So I'll go over some of the rules of the road.</p> <p>13 So I'm going to ask you questions and you'll answer</p> <p>14 them. If you ever don't understand one of my questions,</p> <p>15 just let me know and we can work through it together.</p> <p>16 From time to time, your counsel may</p> <p>17 object. Unless you're specifically instructed not to</p> <p>18 answer, you must still answer.</p> <p>19 Does that all make sense?</p> <p>20 A. Sure, yeah.</p> <p>21 Q. One other thing is, just, you always need to</p> <p>22 provide a verbal answer. I know it's common to shake or</p> <p>23 nod your head, but for the court reporter's benefit,</p> <p>24 it's -- it's good to always provide a verbal answer.</p> <p>25 A. Okay.</p>	<p style="text-align: right;">Page 7</p> <p>1 A. No.</p> <p>2 Q. Did you speak with anyone else other than your</p> <p>3 counsel to prepare for today's deposition?</p> <p>4 A. I talked to the one in the lawsuit.</p> <p>5 Q. Okay. But no one else?</p> <p>6 A. No. No.</p> <p>7 Q. All right. So I'm going to go ahead and hand</p> <p>8 you a copy of your declaration. And this has already</p> <p>9 been marked as Exhibit 2029. This is your declaration,</p> <p>10 right?</p> <p>11 A. [Nods head.]</p> <p>12 MR. PADMANABHAN: You have to say "yes" or</p> <p>13 "no."</p> <p>14 A. Yes.</p> <p>15 (Sotto voce conversation.)</p> <p>16 A. Yes.</p> <p>17 Q. (BY MR. PLAIL) All right. I'm going to ask</p> <p>18 you to turn to paragraph 21, please.</p> <p>19 A. Yeah.</p> <p>20 Q. My question is --</p> <p>21 MR. PADMANABHAN: He said paragraph 21.</p> <p>22 Paragraph.</p> <p>23 A. Paragraph. I went to the page. Sorry.</p> <p>24 Q. (BY MR. PLAIL) At the end of the paragraph,</p> <p>25 you say, "Person having ordinary skill in the art to</p>
<p style="text-align: right;">Page 6</p> <p>1 Q. Can you -- sorry, what is your current</p> <p>2 address?</p> <p>3 A. Home address? 2229 Homestead Lane, Plano,</p> <p>4 Texas, 75025.</p> <p>5 Q. Okay. Did you speak with Justin Marston in</p> <p>6 the process of preparing for your deposition?</p> <p>7 A. No.</p> <p>8 Q. Did you review Mr. Marston's declaration?</p> <p>9 A. Declaration? You mean the patent or --</p> <p>10 Q. No. Mr. Marston submitted a declaration in</p> <p>11 this action. Have you read that?</p> <p>12 A. Can you show me?</p> <p>13 Q. Well, if you haven't reviewed it, I wouldn't</p> <p>14 want to show it to you. But do you have any</p> <p>15 recollection of seeing a declaration similar to your</p> <p>16 declaration that was submitted in this action from</p> <p>17 Justin Marston?</p> <p>18 A. No.</p> <p>19 Q. Okay. Did you review the deposition</p> <p>20 transcript for Mr. Marston?</p> <p>21 A. Deposition transcript? No.</p> <p>22 Q. Did you speak with a Mr. Paul Marston?</p> <p>23 A. No.</p> <p>24 Q. Did you review a declaration from Mr. Paul</p> <p>25 Marston?</p>	<p style="text-align: right;">Page 8</p> <p>1 which said subject matter pertains" [as read].</p> <p>2 Do you see that?</p> <p>3 A. In 21?</p> <p>4 Q. Yeah. The end of 21.</p> <p>5 A. Subject matter as a whole would have been</p> <p>6 obvious at the time. 21, right, paragraph?</p> <p>7 Q. 21, at the end of 21 --</p> <p>8 A. Uh-huh.</p> <p>9 Q. -- you say there, the last sentence, "A person</p> <p>10 having ordinary skill in the art to which said subject</p> <p>11 matter pertains" [as read].</p> <p>12 A. A person having ordinary skill? Are we in the</p> <p>13 same paragraph?</p> <p>14 Q. Yes. "A person having ordinary skill in the</p> <p>15 art to which said subject matter pertains" [as read].</p> <p>16 A. Yes.</p> <p>17 Q. Do you see that?</p> <p>18 A. Uh-huh.</p> <p>19 Q. What are you referring as the subject matter</p> <p>20 there?</p> <p>21 A. Okay. Give me one or two minutes to answer</p> <p>22 this.</p> <p>23 (Witness reviewed document.)</p> <p>24 A. Okay. So subject matter in this case need to</p> <p>25 understand how the e-mail messaging system works.</p>

<p>Page 9</p> <p>1 That's one.</p> <p>2 Second is how the search term works and</p> <p>3 what is calibrated.</p> <p>4 If you're doing -- third, and -- and then</p> <p>5 the ranking process, how does it work. So some of the</p> <p>6 concepts a little bit advance, also.</p> <p>7 THE REPORTER: I'm sorry, some of the</p> <p>8 concepts what?</p> <p>9 A. Advance level. It's not very basic. So that,</p> <p>10 I tried to emphasize it here.</p> <p>11 Q. (BY MR. PLAIL) So you're saying the subject</p> <p>12 matter of the patents is somewhat at an advanced level?</p> <p>13 A. You mean the patent '217, right?</p> <p>14 Q. Yes.</p> <p>15 A. Yes. Yes, some part, yeah.</p> <p>16 Q. You mention they would need to understand how</p> <p>17 search terms worked and are calibrated. Is that right?</p> <p>18 MR. PADMANABHAN: Objection; 611.</p> <p>19 You can answer.</p> <p>20 A. So can you say one more time, that question?</p> <p>21 Q. (BY MR. PLAIL) In your previous answer, you</p> <p>22 mentioned that the person having ordinary skill in the</p> <p>23 art would need to understand how the search term works</p> <p>24 and is calibrated. Is that right?</p> <p>25 A. So that's one -- that -- many topics that --</p>	<p>Page 10</p> <p>1 there are many things will work together to make it</p> <p>2 functional, the whole system. So it's not necessarily</p> <p>3 only the search, yeah. Search is one important</p> <p>4 component.</p> <p>5 Q. Okay. And you mentioned that the subject</p> <p>6 matter in the case also includes e-mail messaging</p> <p>7 systems. Is that right?</p> <p>8 A. Yeah.</p> <p>9 Q. So a person of ordinary skill in the art would</p> <p>10 understand how e-mail messaging systems works?</p> <p>11 A. Uh-huh, yes.</p> <p>12 Q. Can you go to paragraph 22 of your</p> <p>13 declaration?</p> <p>14 A. Paragraph 22, yeah.</p> <p>15 Q. Next paragraph.</p> <p>16 A. Uh-huh.</p> <p>17 Q. If you go on the next page, in the middle of</p> <p>18 the paragraph, you say, "My obviousness analysis</p> <p>19 relating to Dumais reference would be the same whether</p> <p>20 the relevant date is June" --</p> <p>21 A. Hold on. In the middle?</p> <p>22 Q. In the middle.</p> <p>23 MR. PADMANABHAN: Right here [indicating].</p> <p>24 A. "My obvious" -- okay, yeah.</p> <p>25 Q. (BY MR. PLAIL) Okay. So you're saying, "My</p>	<p>Page 11</p> <p>1 obviousness analysis relating to Dumais reference would</p> <p>2 be the same whether the relevant date is June 30, 2005,</p> <p>3 or January 13, 2006" [as read].</p> <p>4 Do you see that?</p> <p>5 A. Yeah.</p> <p>6 Q. So you do not provide an opinion about what</p> <p>7 the correct priority date is for this patent?</p> <p>8 A. I'm saying whether it is on June 30th --</p> <p>9 whether it is in 2005 or 2006, my opinion will be the</p> <p>10 same.</p> <p>11 Q. I understand that.</p> <p>12 My question is: You don't provide a</p> <p>13 substantive opinion for which of those two priority</p> <p>14 dates to use here?</p> <p>15 A. Yes; I do not provide that.</p> <p>16 Q. At the end of the paragraph --</p> <p>17 A. Uh-huh.</p> <p>18 Q. -- you say, "My obviousness analysis relating</p> <p>19 to the Kircher and Krug references would be the same</p> <p>20 whether the relevant date is June 7, 2005, or</p> <p>21 January 13, 2006" [as read].</p> <p>22 Do you see that?</p> <p>23 A. Uh-huh, yes.</p> <p>24 Q. Do you understand that both Kircher and Krug</p> <p>25 predate June 7, 2005?</p>	<p>Page 12</p> <p>1 A. Yeah.</p> <p>2 Q. Do you understand that Kircher was filed on</p> <p>3 April 16, 2002?</p> <p>4 A. Uh-huh.</p> <p>5 MR. PADMANABHAN: You have to say "yes" or</p> <p>6 "no."</p> <p>7 A. Yes.</p> <p>8 Q. (BY MR. PLAIL) Do you understand that Krug</p> <p>9 has a priority date of September 7, 2001?</p> <p>10 A. Yes.</p> <p>11 Q. Can you go to paragraph 23 of your</p> <p>12 declaration?</p> <p>13 A. Uh-huh. Paragraph 23?</p> <p>14 Q. Yes. You say there that, "As part of the</p> <p>15 obviousness analysis, one must consider whether the</p> <p>16 prior art teaches away from the claimed invention" [as</p> <p>17 read].</p> <p>18 Is that right?</p> <p>19 A. Yeah; give me one minute to understand first.</p> <p>20 (Witness reviewed document.)</p> <p>21 A. Yes, I understand.</p> <p>22 Q. What is your understanding of "teaching away"?</p> <p>23 A. So I'm going to answer it, just give me a</p> <p>24 couple of minutes so that I can say precisely what I</p> <p>25 meant.</p>
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<p style="text-align: right;">Page 13</p> <p>1 (Witness reviewed document.)</p> <p>2 A. So in a plain term, my understanding is, if</p> <p>3 the prior art discloses it wholly, we have the claim.</p> <p>4 If it already disclose it, then the -- then that will</p> <p>5 teach us away from the claimed invention, right?</p> <p>6 So in the claim, we claim certain items or</p> <p>7 certain concepts. And if we are claiming, let's say,</p> <p>8 and then somebody already disclose it earlier, the whole</p> <p>9 thing, as a whole thing, then it will -- it will be</p> <p>10 invalid art.</p> <p>11 Q. So that's your understanding of "teaching</p> <p>12 away"?</p> <p>13 A. Right.</p> <p>14 Q. Are you arguing that any of the references,</p> <p>15 Dumais, Kircher, or Krug teach away from the claimed</p> <p>16 inventions?</p> <p>17 A. Sorry, can you say one more time, the</p> <p>18 question?</p> <p>19 Q. Are you arguing that any of the references,</p> <p>20 Dumais, Kircher, or Krug, teach away from the claimed</p> <p>21 invention?</p> <p>22 A. So I'm saying the claim is that we're saying</p> <p>23 the patent '217 interviews the concept, which are not</p> <p>24 covered by Dumais, Krug, or Kircher, so, therefore, the</p> <p>25 patent has been already researched and that should hold.</p>	<p style="text-align: right;">Page 15</p> <p>1 Do you understand that?</p> <p>2 A. Give me one minute. Let me understand the...</p> <p>3 (Witness reviewed document.)</p> <p>4 Q. Dr. Khan?</p> <p>5 A. Yeah.</p> <p>6 Q. Is that what that paragraph says?</p> <p>7 A. So sorry, I forgot what you said.</p> <p>8 Q. I was reading the paragraph. You say here, "I</p> <p>9 understand when an obviousness challenge is based on a</p> <p>10 combination of references, one must consider whether</p> <p>11 there is a motivation to combine the teaching</p> <p>12 references" [as read].</p> <p>13 Is that what that sentence says?</p> <p>14 A. Yes.</p> <p>15 Q. Okay. What is your understanding for the</p> <p>16 types of activities that can motivate a person of skill</p> <p>17 to combine references?</p> <p>18 A. What is that -- sorry, what is that?</p> <p>19 Q. What is your understanding of the types of</p> <p>20 things that can motivate a person of skill to combine</p> <p>21 references?</p> <p>22 A. So you mean what type of degree or what type</p> <p>23 of skill set, right?</p> <p>24 Q. No. I'm asking what information, what</p> <p>25 motivations would a person of skill in the art have?</p>
<p style="text-align: right;">Page 14</p> <p>1 Q. I understand that that's your position. I'm</p> <p>2 asking a more specific question.</p> <p>3 A. Okay.</p> <p>4 Q. Are you arguing that any of the references,</p> <p>5 Dumais, Kircher, or Krug, teach away from the claimed</p> <p>6 inventions?</p> <p>7 A. Can you rephrase that sentence a little bit?</p> <p>8 Q. Let me break it down. You have this paragraph</p> <p>9 in your declaration referring to teaching away?</p> <p>10 A. Uh-huh.</p> <p>11 Q. Right?</p> <p>12 A. Yeah.</p> <p>13 Q. And we've gone over what you understand</p> <p>14 "teaching away" to mean?</p> <p>15 A. Yeah; that's my under -- understanding, yeah.</p> <p>16 Q. And anywhere in your declaration have you</p> <p>17 argued that one of the prior art references teaches away</p> <p>18 from the claim?</p> <p>19 A. The -- as a whole, no.</p> <p>20 Q. Okay. Let's look at paragraph 24. You say at</p> <p>21 the beginning of paragraph 24, "I understand that when</p> <p>22 an obviousness challenge is based on a combination of</p> <p>23 references, one must consider whether there is a</p> <p>24 motivation to combine the teachings of those references"</p> <p>25 [as read].</p>	<p style="text-align: right;">Page 16</p> <p>1 What are the types of things that could motivate them to</p> <p>2 combine references?</p> <p>3 Let me make this a little simpler.</p> <p>4 Can a person of skill be motivated to</p> <p>5 combine references for financial gain?</p> <p>6 A. Say one more time. Sorry.</p> <p>7 Q. Can a person of skill be motivated to combine</p> <p>8 references for financial gain?</p> <p>9 A. Yes.</p> <p>10 Q. Would a person of skill be motivated to</p> <p>11 combine known conventional elements together?</p> <p>12 A. Yeah; in real life, yes.</p> <p>13 Q. And especially where those known conventional</p> <p>14 elements yield a predictable result?</p> <p>15 A. Yeah, if it's so predictable, yes. And it's</p> <p>16 not necessarily only one people that do. Many people</p> <p>17 try to do it. So predictable, yeah.</p> <p>18 THE REPORTER: Sorry, what was the last</p> <p>19 thing?</p> <p>20 A. So predictable. If it is so predictable.</p> <p>21 Q. (BY MR. PLAIL) You say in the second sentence</p> <p>22 of this paragraph that, "There must be some motivation,</p> <p>23 reason, or incentive that would cause one of skill in</p> <p>24 the art at the relevant time to combine the prior art in</p> <p>25 the way embodied by the patent" [as read].</p>

<p style="text-align: right;">Page 17</p> <p>1 A. Uh-huh.</p> <p>2 Q. That word "incentive," what are the</p> <p>3 incentives?</p> <p>4 A. Yeah, as we mentioned, the motivation, reason,</p> <p>5 incentive. So -- so you are asking what is the</p> <p>6 incentive here?</p> <p>7 Q. What are the types of incentives?</p> <p>8 A. Okay. One is the e-mail messaging system,</p> <p>9 the -- the ranking system needs to be improved. That's</p> <p>10 one of the motivations, so that when you log into the</p> <p>11 system, you should get the correct e-mail listing or the</p> <p>12 appropriate e-mail listing. That way, user will be</p> <p>13 happy.</p> <p>14 And in the long-term, this is some company</p> <p>15 product, so probably many people benefitted, and then</p> <p>16 customer will be benefitted, and then the owner will</p> <p>17 also be benefitted as the user.</p> <p>18 Q. Do you understand that a person of ordinary</p> <p>19 skill in the art has creativity?</p> <p>20 A. Yes; some people have -- are very creative in</p> <p>21 life.</p> <p>22 Q. And you understand that a person of ordinary</p> <p>23 skill in the art can be creative?</p> <p>24 A. Okay. So -- so you're saying a person of art</p> <p>25 will -- will be also creative? That's your question?</p>	<p style="text-align: right;">Page 19</p> <p>1 teachings of references together like pieces of a</p> <p>2 puzzle?</p> <p>3 A. Ordinary skill set, a person can do this,</p> <p>4 right? You're asking me yes or no in that case, right?</p> <p>5 Q. I'm asking for your understanding.</p> <p>6 A. So you're asking me in this context or in</p> <p>7 general?</p> <p>8 Q. You have here the definition of a person of</p> <p>9 ordinary skill in the art.</p> <p>10 A. Yeah.</p> <p>11 Q. I'm asking: Do you understand that a person</p> <p>12 of ordinary skill can fit multiple teachings of</p> <p>13 references together like pieces of a puzzle?</p> <p>14 A. In this context, no.</p> <p>15 Q. Okay.</p> <p>16 All right. Can we go to paragraph 7 of</p> <p>17 your declaration?</p> <p>18 MR. PADMANABHAN: Paragraph what?</p> <p>19 MR. PLAIL: 7.</p> <p>20 A. 7, okay. Yeah.</p> <p>21 Q. (BY MR. PLAIL) All right. Sorry, I meant to</p> <p>22 direct you to paragraph 19, which is on page 12. You</p> <p>23 will see that paragraph 19 goes on for some time and</p> <p>24 onto the next page, and it actually includes multiple</p> <p>25 paragraphs. If you go to page 13, on the second full</p>
<p style="text-align: right;">Page 18</p> <p>1 Q. Yes.</p> <p>2 A. In general, this is my observation over</p> <p>3 25 years in academia, I noticed that some people are</p> <p>4 very creative and some people are not. So I cannot say</p> <p>5 that all people are creative.</p> <p>6 Q. Yes.</p> <p>7 A. Same with that person of skill set is</p> <p>8 understanding the whole thing, but not necessarily</p> <p>9 everybody will be able to do the same thing.</p> <p>10 Q. Understand.</p> <p>11 So you're saying that a person of ordinary</p> <p>12 skill in the art may not necessarily be creative?</p> <p>13 A. Yeah.</p> <p>14 Q. Do you understand that a person of ordinary</p> <p>15 skill in the art can fit the multiple teachings of</p> <p>16 references together like pieces of a puzzle?</p> <p>17 A. Say one more time slowly, if you don't mind.</p> <p>18 Q. Do you understand that a person of ordinary</p> <p>19 skill in the art can fit the multiple teachings of</p> <p>20 references together like pieces of a puzzle?</p> <p>21 MR. PADMANABHAN: Objection; 401, 403.</p> <p>22 You can answer, if you know.</p> <p>23 A. Say it one more time. Sorry.</p> <p>24 Q. (BY MR. PLAIL) Do you understand that a</p> <p>25 person of ordinary skill in the art can fit the multiple</p>	<p style="text-align: right;">Page 20</p> <p>1 paragraph, it starts with, "Although the Board's</p> <p>2 definition of a person of ordinary skill in the art</p> <p>3 differs from the definition I have proposed, my opinions</p> <p>4 are the same under both definitions" [as read].</p> <p>5 A. Yeah.</p> <p>6 Q. So you're saying, regardless of the definition</p> <p>7 of a person of ordinary skill in the art, your opinions</p> <p>8 here would not change?</p> <p>9 A. Yes.</p> <p>10 Q. So the precise definition of a person of</p> <p>11 ordinary skill in the art does not affect the overall</p> <p>12 analysis of obviousness?</p> <p>13 A. Yes.</p> <p>14 Q. If you go further up in paragraph 19 in the</p> <p>15 second paragraph, under the header of "The level</p> <p>16 ordinary skill in the art," you say based on my</p> <p>17 experience, a person of ordinary skill in the art of</p> <p>18 computer science would have had at least a bachelor's</p> <p>19 degree in electrical or computer science/engineering or</p> <p>20 related field, with at least six years of experience in</p> <p>21 design or implementation," [as read] and it goes on from</p> <p>22 there.</p> <p>23 MR. PADMANABHAN: Where are you reading?</p> <p>24 MR. PLAIL: Paragraph 19.</p> <p>25 MR. PADMANABHAN: So you're reading the</p>

<p>Page 21</p> <p>1 Board's definition?</p> <p>2 MR. PLAIL: Page 12, paragraph 19.</p> <p>3 MR. PADMANABHAN: Down there, sorry,</p> <p>4 sorry.</p> <p>5 A. Okay, second paragraph, right?</p> <p>6 Q. (BY MR. PLAIL) Yes.</p> <p>7 A. Okay. Yes, sorry; go ahead. Started based on</p> <p>8 the experience...</p> <p>9 (Cell phone rang.)</p> <p>10 THE WITNESS: Let me silence my phone.</p> <p>11 MR. PADMANABHAN: Yeah, turn that off.</p> <p>12 MR. PLAIL: I'd appreciate it if you could</p> <p>13 turn that off.</p> <p>14 THE WITNESS: Sure.</p> <p>15 (Sotto voce conversation.)</p> <p>16 Q. (BY MR. PLAIL) All right. So you say, "Based</p> <p>17 on my experience, a person of ordinary skill in the art</p> <p>18 of computer science would have at least a bachelor's</p> <p>19 degree in electrical or computer science/engineering or</p> <p>20 related field" [as read].</p> <p>21 A. Uh-huh.</p> <p>22 Q. My question is: You say a person of ordinary</p> <p>23 skill in the art of computer science. What do you mean</p> <p>24 "of computer science"?</p> <p>25 A. Okay. So computer science is a -- I mean, it</p> <p>Page 22</p> <p>1 can -- in the engineering field, it can be</p> <p>2 [unintelligible].</p> <p>3 THE REPORTER: I'm sorry, say that again.</p> <p>4 A. So computer science field, in general, it can</p> <p>5 be a part of the engineering field, or it can go with</p> <p>6 the traditional science.</p> <p>7 And it is a -- so what I meant in this</p> <p>8 case, ordinary skill in the art of computer science, so</p> <p>9 computer science has a lot of structure courses.</p> <p>10 Computer science has data mining. Computer science has</p> <p>11 information related...</p> <p>12 So this is the areas I'm focusing on in</p> <p>13 general. And that -- if somebody has a degree in --</p> <p>14 bachelor in computer science, they already know those</p> <p>15 basics.</p> <p>16 And, also, if you have electrical</p> <p>17 engineering background -- so usually the electrical</p> <p>18 engineers are very good in math and science as compared</p> <p>19 to computer science. That's my observation at the time.</p> <p>20 So, in that case, because here in the patent '217, later</p> <p>21 you'll see a lot of math is involved. So some -- they</p> <p>22 do some -- answer the question, try to solve it and so</p> <p>23 on. So that's why electrical engineering background may</p> <p>24 be useful in this case.</p> <p>25 So, in general, what I meant in the art of</p>	<p>Page 23</p> <p>1 computer science means if you have a skill set, let's</p> <p>2 say, information inter alia [phonetic], if you have a</p> <p>3 skill set in data mining or database data -- related to</p> <p>4 data, then as long as you have a degree in computer</p> <p>5 science or computer engineering or electrical</p> <p>6 engineering, you will survive.</p> <p>7 Q. (BY MR. PLAIL) Okay. So you're saying a --</p> <p>8 A. Plus some experience, yeah.</p> <p>9 THE REPORTER: I'm sorry?</p> <p>10 A. Plus some experience.</p> <p>11 Yeah, sorry; go ahead.</p> <p>12 Q. (BY MR. PLAIL) So you're saying a person of</p> <p>13 ordinary skill in the art of computer science would have</p> <p>14 these skill sets?</p> <p>15 A. Computer science field, yeah, would have this</p> <p>16 skill set, plus some experience, what I mentioned six</p> <p>17 years of experience, yeah.</p> <p>18 Q. You say "or related field." A related field,</p> <p>19 is that data science that you were discussing?</p> <p>20 A. Yeah. Now it -- at that time, there's no data</p> <p>21 science, if you remember, at that time. But, yes;</p> <p>22 nowadays, yes.</p> <p>23 Q. What are other related fields?</p> <p>24 A. From now -- from the --</p> <p>25 Q. At the relevant time period.</p> <p>Page 24</p> <p>1 A. At that time period or...</p> <p>2 Q. Uh-huh.</p> <p>3 A. Okay. That time period, electrical</p> <p>4 engineering, think about signal processing background</p> <p>5 would be useful. And -- but what I'm -- if you have a</p> <p>6 degree in, let's say, civil engineering or construction</p> <p>7 engineering, it might be difficult, unless if you were</p> <p>8 20 years in the field, in computer field, there's a</p> <p>9 possibility, but...</p> <p>10 Q. So those are the related fields that you're</p> <p>11 referring to?</p> <p>12 A. Right. There is a significant overlap in</p> <p>13 computing -- computer field and computer engineering and</p> <p>14 electrical engineering, in general, so that's why we put</p> <p>15 this.</p> <p>16 (Sotto voce conversation.)</p> <p>17 MR. PLAIL: Let's take a one-minute break.</p> <p>18 (Break taken from 9:38 a.m. to 9:40 a.m.)</p> <p>19 Q. (BY MR. PLAIL) What is a Gauss-Seidel</p> <p>20 algorithm?</p> <p>21 A. So if you -- in the patent '217, they talk</p> <p>22 about the factor -- sorry. They talk about two things.</p> <p>23 One is the global relevancy. The other one is called</p> <p>24 local relevancy. And these two are circularly related</p> <p>25 to solve this equation. There is an algorithm to</p>
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<p>Page 25</p> <p>1 address that issue, and for that the</p> <p>2 set [unintelligible].</p> <p>3 THE REPORTER: The what? The issue and</p> <p>4 for that the -- the last -- the very last thing you</p> <p>5 said.</p> <p>6 A. There's an equation involved. So if you need</p> <p>7 to solve globally, you need to know the local one, or</p> <p>8 vice versa.</p> <p>9 THE REPORTER: You need -- I'm sorry. To</p> <p>10 solve globally, you need to solve the what?</p> <p>11 A. There are two -- okay. So there are multiple</p> <p>12 important components. There are relevancy. For</p> <p>13 relevancy, we need to consider the local relevancy,</p> <p>14 global relevancy.</p> <p>15 And then the third one is the cognitive</p> <p>16 relevancy and content relevancy.</p> <p>17 There are four types of things --</p> <p>18 components that are there.</p> <p>19 And now for the local and global, local</p> <p>20 relevancy and global relevancy, if you want to solve the</p> <p>21 equations, and the equations that -- there's a -- in</p> <p>22 order to know the global relevancy, you need to solve</p> <p>23 the local relevancy first, or vice versa. So there is a</p> <p>24 significance is there. So in order to solve those</p> <p>25 equations, there is a -- this algorithm is widely used</p> <p>Page 26</p> <p>1 in the industry or in the academia.</p> <p>2 Q. (BY MR. PLAIL) When you refer to "this</p> <p>3 algorithm," you're referring to the Gauss-Seidel</p> <p>4 algorithm?</p> <p>5 A. Yeah, the -- where did I say, can you show me?</p> <p>6 Q. Paragraph 129.</p> <p>7 A. 129?</p> <p>8 Q. Yeah.</p> <p>9 A. Yes. So, as I mentioned that, we have a local</p> <p>10 importancy and the global importancy. Those are the</p> <p>11 two. For each message, we need to determine some sort</p> <p>12 of importancy, local importancy and global importancy.</p> <p>13 And in order to solve -- in the equations,</p> <p>14 we have to -- describe the equations, but there is some</p> <p>15 relationship between these two. So in order to solve</p> <p>16 the equations, we need to find out -- there's</p> <p>17 chicken/egg problem, which one do you want to solve</p> <p>18 first. And since there's a -- some dependency exists.</p> <p>19 So that can be solved by/through this</p> <p>20 Gauss-Seidel algorithm. And that is the standard</p> <p>21 algorithm they utilize. And they do mention that, so</p> <p>22 that I just cited we just mention here.</p> <p>23 Q. So the Gauss-Seidel algorithm is a standard</p> <p>24 algorithm?</p> <p>25 A. Yeah; it is not -- it does not propose or</p>	<p>Page 27</p> <p>1 developed by the patent '217.</p> <p>2 THE REPORTER: I'm sorry, what?</p> <p>3 MR. PADMANABHAN: It's not proposed or</p> <p>4 developed.</p> <p>5 THE REPORTER: Thank you.</p> <p>6 A. By the patent '217. But the -- however, the</p> <p>7 local importancy, global importancy, these two concepts</p> <p>8 are introduced by the -- by the patent owner of '217.</p> <p>9 Q. (BY MR. PLAIL) You mentioned that the local</p> <p>10 relevance and the global relevance are a chicken and egg</p> <p>11 problem. Is that right?</p> <p>12 A. Okay. Yeah, there are some dependency exists,</p> <p>13 yes.</p> <p>14 Q. So you're solving one as an input to the</p> <p>15 other, and then output for that goes back to the input.</p> <p>16 Is that right?</p> <p>17 A. Yeah.</p> <p>18 Q. So you would need both the local and the</p> <p>19 global importance to fully solve the equation?</p> <p>20 A. Right.</p> <p>21 Q. And both would be necessary for the algorithm</p> <p>22 to function?</p> <p>23 A. What -- the way the patent claim is written,</p> <p>24 so is not -- at the beginning, initial stage, when the</p> <p>25 algorithm starts to learn. So at that point, some of</p> <p>Page 28</p> <p>1 the components may not have enough -- may not have</p> <p>2 balance or neutralized to zero. And over time, the time</p> <p>3 passes, the algorithm will learn more and more and</p> <p>4 perform better.</p> <p>5 So in that case, let's say after a couple</p> <p>6 of days or a couple of iterations, the local relevancy</p> <p>7 will have balance, global relevancy will have values,</p> <p>8 then the content relevancy will have values. And then</p> <p>9 the fourth one is -- cognitive relevancy will have</p> <p>10 values.</p> <p>11 So then all these components will work</p> <p>12 together and produce the fully functional system that</p> <p>13 work.</p> <p>14 Q. So they all work together?</p> <p>15 A. Right.</p> <p>16 Q. And it's necessary for all of them to work</p> <p>17 together for the algorithm to function?</p> <p>18 MR. PADMANABHAN: Objection; Rule 611.</p> <p>19 A. No. As I said --</p> <p>20 THE WITNESS: I should answer or no?</p> <p>21 MR. PADMANABHAN: Yeah.</p> <p>22 A. So I say the -- the way -- if you see the</p> <p>23 Claim 1 language, it says second relevancy has multiple</p> <p>24 components, and not all of them needs to present or</p> <p>25 function. As long as one or all of them function,</p>
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<p style="text-align: right;">Page 29</p> <p>1 that's fine.</p> <p>2 So when I read the patent '217, I -- I saw</p> <p>3 very clearly stated in various places that how the</p> <p>4 algorithm works. If you see the page, Figure 21 or 22,</p> <p>5 one of the figures in the patent '217, they mention --</p> <p>6 they explain in that figure how the algorithm works</p> <p>7 steps by steps.</p> <p>8 And they're sure at the beginning</p> <p>9 calibrated may not have enough values, because the</p> <p>10 system is warming up. And -- but, eventually, those --</p> <p>11 it will start with the -- you want to know the details</p> <p>12 without -- I can explain, but if you want to --</p> <p>13 Q. (BY MR. PLAIL) I mean, I'm just trying to --</p> <p>14 let's break this down a little bit.</p> <p>15 You mentioned that there's the global</p> <p>16 importance and the local importance and they work</p> <p>17 together in the algorithm?</p> <p>18 A. Yeah, they work together. But I'm saying it's</p> <p>19 not necessary of -- each of them will have value at the</p> <p>20 beginning, will have some -- eventually to learn, it</p> <p>21 will be -- eventually it will have -- the system will</p> <p>22 have all this -- all this -- each of these components</p> <p>23 will have the values, yes.</p> <p>24 Q. So, as a starting point, they can all have a</p> <p>25 value of zero, for example?</p>	<p style="text-align: right;">Page 31</p> <p>1 A. Yes.</p> <p>2 Q. What is the problem that the '217 patent is</p> <p>3 trying to solve?</p> <p>4 A. So I should -- okay. I can say from here, or</p> <p>5 you just want --</p> <p>6 Q. I'm asking generally.</p> <p>7 A. Okay. So it's the -- the personal e-mail,</p> <p>8 e-mail messaging system, you -- user -- so in the patent</p> <p>9 '217, the sender sends e-mail message to a user, and</p> <p>10 user will get a bunch of messages. And user will</p> <p>11 provide some feedback, what they call a user action.</p> <p>12 And based on user actions, we can bring the e-mail list</p> <p>13 in a certain way that user will be happy. A more</p> <p>14 relevant one will be shown first.</p> <p>15 And in this case, the patent '217</p> <p>16 introduce a very important concept called sender</p> <p>17 importancy; who is sending the message to the recipient.</p> <p>18 In this case, the recipient will be the -- in our</p> <p>19 declaration, we call it first user. And then -- and</p> <p>20 then we -- the patent also -- patent '217 also</p> <p>21 identifies at least one other priority of users that is</p> <p>22 the recipient of the electronic message and cognate --</p> <p>23 and that is cognate to the user also.</p> <p>24 And then we call this as a -- you know, a</p> <p>25 definition, call it second user. So then the --</p>
<p style="text-align: right;">Page 30</p> <p>1 A. Not all. But some. Some of the unknown are</p> <p>2 zero, yeah.</p> <p>3 Q. And then as the algorithm is being solved, we</p> <p>4 develop a value for the importance, the local</p> <p>5 importance?</p> <p>6 A. Right; local importance, global importance,</p> <p>7 yeah.</p> <p>8 Q. And so both the local importance and the</p> <p>9 global importance are part of the algorithm?</p> <p>10 A. Yes.</p> <p>11 Q. And you need both the local importance and the</p> <p>12 global importance for the algorithm to function?</p> <p>13 MR. PADMANABHAN: Objection; Rule 611.</p> <p>14 A. That part, I don't agree. Not all the parts.</p> <p>15 Q. (BY MR. PLAIL) I'm not asking about all the</p> <p>16 parts. I'm asking about the local importance and the</p> <p>17 global importance.</p> <p>18 MR. PADMANABHAN: Objection; Rule 611.</p> <p>19 A. So what -- yeah, say it -- what is the</p> <p>20 question, the exact wording?</p> <p>21 Q. (BY MR. PLAIL) Do you need the local</p> <p>22 importance for the algorithm to function?</p> <p>23 A. Yes.</p> <p>24 Q. Do you need the global importance for the</p> <p>25 algorithm to function?</p>	<p style="text-align: right;">Page 32</p> <p>1 there's -- one important point here is the second user</p> <p>2 needs to be the recipient of the same electronic content</p> <p>3 of the message, what the first user receives, and also</p> <p>4 needs to be cognate to the first user. And --</p> <p>5 Q. So that's the problem that the '217 patent is</p> <p>6 trying to solve?</p> <p>7 A. Right.</p> <p>8 Q. Okay. So is one of the problems that the '217</p> <p>9 patent is trying to solve is weeding out junk e-mail</p> <p>10 from relevant e-mail?</p> <p>11 MR. PADMANABHAN: Objection -- objection;</p> <p>12 401 to 403.</p> <p>13 THE WITNESS: I should answer it or --</p> <p>14 MR. PADMANABHAN: Yes, sorry.</p> <p>15 A. Can you show me, where did I say this?</p> <p>16 Q. (BY MR. PLAIL) 56, paragraph 56.</p> <p>17 A. Paragraph 56...</p> <p>18 (Witness reviewed document.)</p> <p>19 A. Yes; so -- yes, since I said so.</p> <p>20 Q. So you agree one of the problems addressed in</p> <p>21 the '217 patent is the volume of e-mail?</p> <p>22 A. Yes.</p> <p>23 Q. And so to break that down, basically, the</p> <p>24 amount of information available on the internet is</p> <p>25 always increasing, right?</p>

<p style="text-align: right;">Page 33</p> <p>1 A. Can you say it one more time?</p> <p>2 Q. Do you agree that there was an issue where the</p> <p>3 volume of content available was always increasing?</p> <p>4 MR. PADMANABHAN: Objection; 401 to 403.</p> <p>5 A. So in this case, we're talking about the</p> <p>6 e-mail messages. And the internet -- you're talking</p> <p>7 about internet -- with regard to internet -- with regard</p> <p>8 to the internet or the web, it means the -- at that</p> <p>9 time, in 2000 -- 2005 or 2006, around that time, when it</p> <p>10 talk about the search, we are -- the internet, we're</p> <p>11 dealing with web pages. And that --</p> <p>12 Q. (BY MR. PLAIL) So you're saying the patent</p> <p>13 here is focused on an e-mail system?</p> <p>14 A. Yes; primarily, yes.</p> <p>15 Q. And it's not focused on a website?</p> <p>16 A. The algorithm -- as long as the -- if there's</p> <p>17 a concept called sender and the recipient are involved,</p> <p>18 if you have object where somebody will send the object</p> <p>19 to a -- to a person or to a recipient, then there is a</p> <p>20 concept called sender and recipient. If that exists,</p> <p>21 then the algorithm, the whole thing as described, that</p> <p>22 will also work in that context.</p> <p>23 Q. So if you were to send a message from a</p> <p>24 specific person to the user, that is what the '217</p> <p>25 addressed?</p>	<p style="text-align: right;">Page 35</p> <p>1 A. Okay, so -- sorry, can you say one more time?</p> <p>2 Q. (BY MR. PLAIL) Within that context, one of --</p> <p>3 A. Which context? The 56 paragraph?</p> <p>4 Q. 56 and the issues we were just discussing.</p> <p>5 A. Sure.</p> <p>6 Q. Within that context, one of the issues that</p> <p>7 the '217 patent was trying to solve is to identify</p> <p>8 useful messages among an ever-increasing number of</p> <p>9 useless messages?</p> <p>10 MR. PADMANABHAN: Object -- same</p> <p>11 objections.</p> <p>12 A. Identify -- you said identify useful messages</p> <p>13 and separate them from useless messages?</p> <p>14 Q. (BY MR. PLAIL) Correct.</p> <p>15 A. I'm going to answer. Just -- I'm thinking a</p> <p>16 couple things before going to answer that question.</p> <p>17 They have a -- the patent '217 has a --</p> <p>18 one of the component called search component. So</p> <p>19 what -- through the search, you can get the relevant</p> <p>20 messages. And then the question is: How do you want to</p> <p>21 rank those relevant messages?</p> <p>22 The user actions and the sender</p> <p>23 importancy, collaborative filtering, or calibrated</p> <p>24 relevancy, this will play a role in the ranking process.</p> <p>25 Q. I see. So the '217 patent includes a search</p>
<p style="text-align: right;">Page 34</p> <p>1 A. Right.</p> <p>2 Q. And within that content, there's an</p> <p>3 ever-increasing number of these messages, right?</p> <p>4 MR. PADMANABHAN: Objection; 401 to 403.</p> <p>5 A. Sorry, say it again, please.</p> <p>6 Q. (BY MR. PLAIL) Within that context, one of</p> <p>7 the issues that the '217 patent is trying to address is</p> <p>8 that there's an ever-increasing number of these</p> <p>9 messages, and it is difficult to determine which ones</p> <p>10 are useful and which ones are not?</p> <p>11 MR. PADMANABHAN: Objection; 401 to 403</p> <p>12 and 611.</p> <p>13 THE WITNESS: I should answer?</p> <p>14 MR. PADMANABHAN: Yeah.</p> <p>15 Q. (BY MR. PLAIL) Just for context, unless your</p> <p>16 counsel specifically instructs you not to answer, you</p> <p>17 will always answer.</p> <p>18 A. Okay.</p> <p>19 Q. So just to go over this again, within that</p> <p>20 context, one of the issues that the '217 patent was</p> <p>21 trying to solve is that -- is to identify useful</p> <p>22 messages among an ever-increasing number of useless</p> <p>23 messages?</p> <p>24 MR. PADMANABHAN: Objection; 401 to 403,</p> <p>25 611, and 613.</p>	<p style="text-align: right;">Page 36</p> <p>1 component?</p> <p>2 A. Right.</p> <p>3 Q. And using that search component, you can</p> <p>4 identify relevant messages and then rank the relevant</p> <p>5 messages?</p> <p>6 A. So -- yeah, there are two steps in that -- in</p> <p>7 patent '217. One is that before the feedback, they will</p> <p>8 give you a list based on whatever knowledge they have at</p> <p>9 that point. And then user -- the first user will give</p> <p>10 feedback. Then, immediately, that ranking will be</p> <p>11 updated. And based on the new -- new feedback, the</p> <p>12 whole list will be updated and shown to the -- to the</p> <p>13 first user.</p> <p>14 Q. Okay. I -- I was just referring to your</p> <p>15 previous answer. You said in your previous answer, and</p> <p>16 I'm quoting here, "So through the search, you can get</p> <p>17 the relevant messages, and then the question is how you</p> <p>18 rank those relevant messages."</p> <p>19 Is that right?</p> <p>20 A. Right. So -- yeah, let's say you ask for</p> <p>21 something "Dallas," they'll give me the messages related</p> <p>22 to Dallas.</p> <p>23 Q. And then the question is, how do you rank</p> <p>24 those messages to Dallas?</p> <p>25 A. So the content base or the search-based system</p>

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<p>1 will give you -- search-based system will give you 2 Dallas 100 messages. So now those 100 messages needs to 3 be -- the 100 messages need to be ranked in a certain 4 order, right? 5 So then at that -- then the issue lies how 6 do you want the ranking. So patent '217 has a very 7 unique way to rank it based on the sender importancy, 8 based on the local relevancy, based on the global 9 relevancy, based on the cognitive [phonetic] filtering 10 content. So all of this will be taking into 11 consideration during the ranking process. 12 Q. Okay. And so -- 13 A. Which is very powerful, I believe, as compared 14 to traditional -- other system at that point. 15 Q. And so just to go back to your earlier answer, 16 you're referring to where you said the user actions and 17 the sender importancy, collaborative filtering, or 18 collaborative relevance, this will play a role in the 19 ranking process? 20 MR. PADMANABHAN: Objection; Rule 611. 21 A. Sorry, you said something -- 22 Q. (BY MR. PLAIL) I was quoting your earlier 23 answer. 24 A. Sure, yeah. 25 Q. So quoting your earlier answer, you said, "The</p>	<p>1 messages. 2 Q. (BY MR. PLAIL) The subset of e-mail messages 3 returned by the search result? 4 MR. PADMANABHAN: Objection; Rule 611. 5 A. Okay. So I need to add a couple of things. 6 So this is -- 7 Q. (BY MR. PLAIL) I'm asking a simple question. 8 You said earlier that the search will give you a list. 9 These are e-mail messages and they're associated with my 10 search. Then you talked about collaborative filtering 11 and collaborative relevancy. This is a -- 12 A. And -- 13 (Cross talk.) 14 THE REPORTER: Let him finish his 15 question, please. 16 Q. This is a simple question I'm asking. The 17 subset of e-mail messages returned by the search result, 18 that will be ranked using these collaborative relevancy 19 and importance metrics that you're referring to? 20 MR. PADMANABHAN: Objection; Rule 611 and 21 402 -- 401 to 403. 22 Q. (BY MR. PLAIL) Let's break it down. You 23 start with a search, right? You have an e-mail box. 24 You search in that e-mail box for the word "Dallas," 25 right?</p>
Page 38	Page 40
<p>1 user actions and the sender importancy, collaborative 2 filtering, or collaborative relevance, this will play a 3 role in the ranking process." 4 You're referring to the search ranking 5 process? 6 MR. PADMANABHAN: Objection; Rule 611. 7 A. Okay. The search will give you a list. These 8 are the -- this is -- these are the e-mail messages that 9 are associated with my search. 10 Q. (BY MR. PLAIL) Right. So you have -- 11 A. Basically narrow down, and then you have some 12 sort of filter. Now this -- this set is still big and 13 you need to present it in a certain way, in certain 14 order. Which one will come first, that's the ranking 15 process, right? 16 So in that ranking process, we are using 17 all this various importancy, then content relevancy, 18 then also the collaborative filtering or collaborative 19 relevancy will be taken into consideration at the same 20 time. 21 Q. So the '217 patent uses various importancies 22 and relevancies and collaborative filtering or relevancy 23 in order to rank search results? 24 MR. PADMANABHAN: Objection; Rule 611. 25 A. In order to rank that subset of e-mail</p>	<p>1 A. [Nods head.] 2 Q. Correct? 3 A. That's one -- one way to do it. 4 Another way -- 5 Q. One way to do it. 6 That search produces a subset of e-mail 7 results, correct? 8 A. Uh-huh. 9 Q. The '217 patent can then be used to rank those 10 search results, right? 11 MR. PADMANABHAN: Objection; Rule 611. 12 A. Yes. That's one way -- one -- one direction 13 when you utilize such. 14 Another direction is, let's say you get 15 a -- you're just logging into your e-mail box or e-mail 16 messaging system, and then you -- 17 Q. But just to -- just to make sure the record's 18 clear, the '217 can be used to rank the search results, 19 right? 20 A. Search -- search result will give you some 21 output, yes. Then patent '217, the ranking algorithm, 22 will work on it to rank those received e-mail messages 23 for a particular recipient. 24 Q. I'm going to go ahead and hand you the '217 25 patent. This has been previously marked as Exhibit 1 --</p>

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<p>1 Exhibit 1001. 2 I'm going to ask you to go to Claim 1, 3 which is on page 49. 4 A. Uh-huh. 49. Page 49 or 48? 5 Q. 49. 6 A. Okay, yeah. 7 Q. Starting around line 30, do you see where the 8 claim says, "A computer readable storage medium storing 9 computer program modules"? 10 Do you see that? 11 A. Line 30? 12 Q. Yes. 13 A. Okay. You said, "Computer readable storage 14 medium"? 15 Q. "Storing computer program modules." 16 A. Uh-huh. 17 Q. So you'd agree that the claim is directed to a 18 computer program, right? 19 A. Did I say that in my declaration? 20 Q. I'm asking. Is the claim directed to a 21 computer program? 22 A. "The computer readable storage medium is 23 storing computer program modules configured to execute 24 on the computer processor, the computer program 25 modules..." [as read].</p>	<p>1 program? 2 A. So the patent say that or you're asking? 3 Q. I'm asking. 4 A. Oh, okay. 5 Q. So my question is: A person of skill 6 implementing the claims, would they need to understand 7 how to create a computer program? 8 A. Yeah; in general, yes. 9 Q. And you mentioned earlier that the algorithms 10 involved are quite complex? 11 A. Yes. 12 Q. And so one of the problems, then, would be to 13 efficiently solve the algorithm, correct? 14 MR. PADMANABHAN: Objection; 601 -- 401 to 15 403. 16 A. So please say it one more time. What is your 17 question? 18 Q. (BY MR. PLAIL) So one of the problems that a 19 person of skill would face when implementing the claims 20 would be to efficiently solve the algorithm on a 21 computer at that time? 22 MR. PADMANABHAN: Objection; 401 to 403, 23 and 6 -- 24 A. So now the -- 25 THE REPORTER: Sorry, 6 what?</p>
Page 42	Page 44
<p>1 (Witness reviewed document.) 2 A. So which one are you asking me? 3 Q. (BY MR. PLAIL) I'm asking whether the claim 4 is directed to a computer program. 5 A. The whole sentence or just -- 6 Q. I'm asking whether the claim is directed to a 7 computer program. 8 A. Oh, I see. 9 (Witness reviewed document.) 10 A. So here, we talk about the computer system. 11 System means as a whole the contents, processor, CPU 12 and -- no GPU at that time, but CPU, plus RAM. And then 13 the software program will all work on it and the data 14 itself. So these are the things altogether are part of 15 the system. 16 Q. And an important part of the system is the 17 computer program, correct? 18 A. Yeah, of course. Otherwise, it will not work. 19 Q. And so a person of skill implementing the 20 claims would need to understand how to create a computer 21 program? 22 A. Sorry; what -- so you said the computer -- say 23 it one more time. 24 Q. A person of skill implementing the claims 25 would need to understand how to create a computer</p>	<p>1 MR. PADMANABHAN: 613. 2 THE REPORTER: Thank you. 3 A. So what does "efficient" means in this case? 4 When you say "efficient," efficiency means a lot of 5 things. The parts of the algorithm, like the quality of 6 the result you're going to present to the user, the 7 ranking process needs to be good quality. If you -- you 8 come up with a ranking and the user doesn't like it, 9 then it's a useless system. 10 So, in that case, efficiency is a problem. 11 And some people think efficiency means speed. So, in 12 this case, efficiency is a little bit vague, in my 13 opinion. 14 Q. (BY MR. PLAIL) Okay. Can efficiency refer to 15 making the system scaleable on a computer? 16 MR. PADMANABHAN: Objection; Rule 613, 401 17 to 403. 18 A. So we are talking about 2005. So, at that 19 time, I think the efficiency of research or the -- the 20 product designer, product developer engineer, engineer 21 are more concerned with the quality of the result. So 22 when you do the ranking, come up with a rank list, you 23 need to make sure the rank list is relevant to the user. 24 If you give them some junk on the top, 25 some people may not want to use your system, right? So</p>

<p>Page 45</p> <p>1 then this patent will not be useful at all. So, in that</p> <p>2 case, I think that efficiency might be -- one of the</p> <p>3 aspect for the efficiency should be the quality of the</p> <p>4 result.</p> <p>5 Q. (BY MR. PLAIL) Okay.</p> <p>6 A. So I think that this algorithm, the patent</p> <p>7 '217 algorithms have come up with a very high quality --</p> <p>8 high quality ranking process, so that will improve the</p> <p>9 efficiency significantly. Basically, downstream user</p> <p>10 will be -- or n user will be very happy.</p> <p>11 Q. Understand. Understand.</p> <p>12 Breaking this down, computers in 2005,</p> <p>13 they were less powerful than computers today, right?</p> <p>14 MR. PADMANABHAN: Objection; Rule 613.</p> <p>15 You can answer.</p> <p>16 A. Yes.</p> <p>17 Q. (BY MR. PLAIL) And that lack of computing</p> <p>18 power would be an obstacle to a person of skill</p> <p>19 attempting to implement a perfect algorithm, correct?</p> <p>20 MR. PADMANABHAN: Objection; Rule 613, and</p> <p>21 Rule 401 to 403.</p> <p>22 A. Okay. So one more time, please.</p> <p>23 Q. (BY MR. PLAIL) The -- that lack of computer</p> <p>24 power would be an obstacle to a person of skill</p> <p>25 attempting to implement an algorithm, correct?</p> <p>Page 46</p> <p>1 MR. PADMANABHAN: Objection; Rule 613, and</p> <p>2 401 to 403.</p> <p>3 A. So this is a -- the e-mail messaging system,</p> <p>4 we are -- the patent '217 proposing is based on the</p> <p>5 solver organization. The organization may not have</p> <p>6 millions of users. So, in that case --</p> <p>7 Q. (BY MR. PLAIL) So the patent is focused on a</p> <p>8 server side implementation?</p> <p>9 MR. PADMANABHAN: Objection.</p> <p>10 A. No. I'm not say -- what I'm saying --</p> <p>11 Q. (BY MR. PLAIL) So is it -- can it be used on</p> <p>12 a personal computer?</p> <p>13 A. Yeah, of course.</p> <p>14 Q. And personal computers were not that powerful</p> <p>15 in 2005, correct?</p> <p>16 MR. PADMANABHAN: Objection; Rule 613.</p> <p>17 A. Yeah, but -- okay. So there's a -- they talk</p> <p>18 about cyber side and the client side. So --</p> <p>19 Q. (BY MR. PLAIL) Is that required under the</p> <p>20 claim?</p> <p>21 A. I have to take a look. Can I take a look?</p> <p>22 Q. Sure.</p> <p>23 (Witness reviewed document.)</p> <p>24 A. What time? What time?</p> <p>25 Q. It is 10:13.</p>	<p>Page 47</p> <p>1 A. That's fine. This may take time to answer</p> <p>2 your discussion, because this is a little bit</p> <p>3 challenging question.</p> <p>4 Q. I'm asking whether the claim is limited to a</p> <p>5 server or --</p> <p>6 A. Let me look --</p> <p>7 (Cross talk.)</p> <p>8 Q. I think your answer would be on the claim on</p> <p>9 page 49.</p> <p>10 A. Page -- my claim, 49?</p> <p>11 Q. No. The claim of the patent is on page 49.</p> <p>12 (Witness reviewed document.)</p> <p>13 A. Page 49? Where is it?</p> <p>14 Q. The claim.</p> <p>15 A. Yeah, which claim? Claim 1?</p> <p>16 Q. Claim 1 -- is Claim 1 limited to a server?</p> <p>17 (Witness reviewed document.)</p> <p>18 MR. PADMANABHAN: Objection; Rule 613.</p> <p>19 Q. (BY MR. PLAIL) Dr. Khan, do you not know</p> <p>20 whether the claim is limited to a server?</p> <p>21 A. Give me -- because here they mention server,</p> <p>22 so I'm just making sure I'm not saying anything wrong.</p> <p>23 MR. PADMANABHAN: Again, objection;</p> <p>24 Rule 613.</p> <p>25 A. So, okay, you're going to give me a few</p> <p>Page 48</p> <p>1 minutes, right?</p> <p>2 Q. (BY MR. PLAIL) I mean, Dr. Khan, we've</p> <p>3 reviewed the claim.</p> <p>4 A. So --</p> <p>5 Q. Does it say the word "server" in Claim 1?</p> <p>6 A. No. Here, the diagram shows there's a --</p> <p>7 Q. Is that Claim 1?</p> <p>8 MR. PADMANABHAN: He's asking -- sorry.</p> <p>9 A. Oh, no, no, not in that. Here, they do</p> <p>10 mention the server, right? Is that your question?</p> <p>11 Q. (BY MR. PLAIL) That is my question.</p> <p>12 A. No, it doesn't say "server" explicitly.</p> <p>13 Q. So it is not limited to a server?</p> <p>14 MR. PADMANABHAN: Objection; Rule 613.</p> <p>15 A. That, I have to take a look.</p> <p>16 Q. (BY MR. PLAIL) What would you look at?</p> <p>17 A. Specific definition area, Figure 4. Figure 4,</p> <p>18 I want to review the text a little bit.</p> <p>19 Q. So, based on Figure 4, you're concerned that</p> <p>20 Claim 1 may be limited to a server?</p> <p>21 MR. PADMANABHAN: Objection; Rule 613.</p> <p>22 A. No, I'm not saying limited to server. But I'm</p> <p>23 saying --</p> <p>24 Q. (BY MR. PLAIL) Then I'm wondering why you</p> <p>25 can't answer my question. I'm asking whether Claim 1 is</p>
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<p style="text-align: right;">Page 49</p> <p>1 limited to a server.</p> <p>2 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>3 613.</p> <p>4 A. Because I have to take a look a little bit</p> <p>5 before going to tell you exactly.</p> <p>6 Q. (BY MR. PLAIL) Okay. You've looked at</p> <p>7 Figure 4?</p> <p>8 A. Right.</p> <p>9 Q. You've looked at Claim 1?</p> <p>10 A. And I'm looking at the text besides the</p> <p>11 Figure 4.</p> <p>12 (Witness reviewed document.)</p> <p>13 Q. Dr. Khan, I'll represent to you that nowhere</p> <p>14 in your declaration do you use the word "server."</p> <p>15 A. My declaration, right?</p> <p>16 Q. Yes.</p> <p>17 A. Okay.</p> <p>18 Q. So I'm asking: Do you have an opinion that</p> <p>19 Claim 1 is limited to a server?</p> <p>20 MR. PADMANABHAN: Objection; Rule 613,</p> <p>21 Rule 611.</p> <p>22 (Witness reviewed document.)</p> <p>23 A. So -- okay. So you try to tell me that the --</p> <p>24 the client or the n user will use the personal computer</p> <p>25 and the computer may not have that much power, but</p>	<p style="text-align: right;">Page 51</p> <p>1 there are multiple servers mentioned in the '217</p> <p>2 patent."</p> <p>3 A. So you asked --</p> <p>4 MR. PADMANABHAN: Objection; Rule 611,</p> <p>5 Rule 613.</p> <p>6 You can answer.</p> <p>7 A. So you asked me that the -- that the</p> <p>8 scalability issue. At that point, I tried to explain</p> <p>9 why a scalability would not be an issue at that point.</p> <p>10 Because this is -- a client may use personal computer,</p> <p>11 that's fine, n users. But to communicate with the</p> <p>12 organizational server and then the Figure 4 in the</p> <p>13 patent '217, it talks about various servers, including</p> <p>14 the relational server and so on. So -- and those</p> <p>15 servers probably would be very powerful.</p> <p>16 Q. (BY MR. PLAIL) I see. So you're saying the</p> <p>17 power of the server means there will not be a</p> <p>18 scalability issue?</p> <p>19 MR. PADMANABHAN: Objection; Rule 611.</p> <p>20 A. I'm saying this -- okay. The -- this e-mail</p> <p>21 messaging system focuses on a -- on a number of</p> <p>22 messages. And these messages will be tailored to a</p> <p>23 particular user, n user, recipients, and so on. So, in</p> <p>24 that case, the way you -- you are -- I -- I think the</p> <p>25 way you tried to relate it -- my -- this is my</p>
<p style="text-align: right;">Page 50</p> <p>1 that's the client side, right? And the client needs to</p> <p>2 communicate with the server. And there are multiple</p> <p>3 servers are mentioned in the patent '217. So they call</p> <p>4 it relational server, where the -- the submessages would</p> <p>5 be stored.</p> <p>6 And then for each organization, according</p> <p>7 to Figure 4, it has its own server. And so that way --</p> <p>8 they talk about the server, although in my declaration,</p> <p>9 I -- we did not say explicitly, but in the patent '217,</p> <p>10 they talk about servers. And the issue is, is that --</p> <p>11 Q. (BY MR. PLAIL) So your -- your -- just to</p> <p>12 understand, your testimony is that Claim 1 requires a</p> <p>13 client side to communicate with a server?</p> <p>14 MR. PADMANABHAN: Objection; Rule 611,</p> <p>15 Rule 613.</p> <p>16 A. No, I did not say what, but --</p> <p>17 Q. (BY MR. PLAIL) You said -- I'm quoting, "The</p> <p>18 client needs to communicate with a server, and there are</p> <p>19 multiple servers mentioned in the patent '217."</p> <p>20 Did you say that?</p> <p>21 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>22 Rule 613.</p> <p>23 A. So say it one more time.</p> <p>24 Q. (BY MR. PLAIL) I'm quoting you, you said,</p> <p>25 "The client needs to communicate with the server, and</p>	<p style="text-align: right;">Page 52</p> <p>1 understanding -- related to the internet search or</p> <p>2 something.</p> <p>3 Q. (BY MR. PLAIL) I'm not. I'm asking --</p> <p>4 (Cross talk.)</p> <p>5 A. So that's different scalability.</p> <p>6 Q. I'm asking a simple question. Are you saying</p> <p>7 that the power of the server means there will not be a</p> <p>8 scalability issue?</p> <p>9 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>10 Rule 613.</p> <p>11 A. Powerful server will not have a scalability</p> <p>12 issue at that point -- at that time, right? That's what</p> <p>13 you're saying?</p> <p>14 Q. (BY MR. PLAIL) That's my question.</p> <p>15 A. Yes, that's not an issue.</p> <p>16 Q. Okay. So if we could go to column 6, line 65,</p> <p>17 the patent says there, "Still referring to Figure 2, the</p> <p>18 electronic mail system 250 or any combination of the</p> <p>19 modules" --</p> <p>20 A. One minute. Line 60, right?</p> <p>21 Q. 65.</p> <p>22 A. 65, okay. Sorry.</p> <p>23 Q. It says there, "Still referring to Figure 2,</p> <p>24 the electronic mail system 250 or any combination of the</p> <p>25 modules shown therein may run on any type of computer</p>

<p style="text-align: right;">Page 53</p> <p>1 system" [as read].</p> <p>2 It then goes on to give an example of a</p> <p>3 client side device, a server side device, a single</p> <p>4 processor computer, a multi-processor computer. Do you</p> <p>5 see that?</p> <p>6 (Witness reviewed document.)</p> <p>7 Q. Dr. Khan, do you see that statement in the</p> <p>8 patent?</p> <p>9 A. Yeah, uh-huh. Yes.</p> <p>10 Q. Do you agree that the electronic mail system</p> <p>11 250 or any combination of the modules shown therein may</p> <p>12 run on any type of computer system?</p> <p>13 MR. PADMANABHAN: Objection; Rule 613.</p> <p>14 A. Sorry, what is the question?</p> <p>15 Q. (BY MR. PLAIL) Do you agree that the</p> <p>16 electronic mail system 250 or any combination of the</p> <p>17 modules shown therein may run on any type of computer</p> <p>18 system?</p> <p>19 MR. PADMANABHAN: Objection; Rule 613.</p> <p>20 (Witness reviewed document.)</p> <p>21 A. Give me -- let me understand. Just give me...</p> <p>22 (Witness reviewed document.)</p> <p>23 Q. Dr. Khan, I'm asking whether you agree with</p> <p>24 the statement directly out of the patent.</p> <p>25 A. I'm just reading the --</p>	<p style="text-align: right;">Page 55</p> <p>1 A. So your --</p> <p>2 Q. I -- I asked a question quoting the patent</p> <p>3 directly, and we've spent 10 minutes.</p> <p>4 A. Yes, yes.</p> <p>5 Q. My question, reading column 6, line 65, it</p> <p>6 says, "The electronic mail system 250 or any combination</p> <p>7 of the modules shown therein may run on any type of</p> <p>8 computer system" [as read].</p> <p>9 Do you agree with that statement?</p> <p>10 A. Yes, I agree.</p> <p>11 Q. Okay. Thank you.</p> <p>12 Can we please turn back to Claim 1. So</p> <p>13 we've established that you agree that the computer mail</p> <p>14 system 250 or any combinations of the modules shown</p> <p>15 therein may run on any type of computer system. That</p> <p>16 would include a general purpose personal computer,</p> <p>17 correct?</p> <p>18 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>19 613.</p> <p>20 You can answer.</p> <p>21 A. General purpose computer means -- yes, not</p> <p>22 necessarily the iPad -- I don't know whether the iPad</p> <p>23 was there at that time.</p> <p>24 Yeah, general purpose computer means as</p> <p>25 long as it has a good -- a CPU and then the RAM, disc,</p>
<p style="text-align: right;">Page 54</p> <p>1 Q. Have you reviewed this patent previously?</p> <p>2 A. Yes.</p> <p>3 Q. Did you review this patent in forming the</p> <p>4 opinions in your declaration?</p> <p>5 A. Yes.</p> <p>6 Q. Okay. So I'm going to ask the question --</p> <p>7 (Cross talk.)</p> <p>8 A. I mean, there are many pages. There are 49.</p> <p>9 Q. Yes. And this is not your opportunity to read</p> <p>10 the whole thing cover to cover.</p> <p>11 A. No, I'm not reading the whole thing. I'm just</p> <p>12 reading the neighboring paragraph.</p> <p>13 Q. I'm going to ask again. Do you agree that the</p> <p>14 electronic mail system 250 or any combination of the</p> <p>15 modules shown therein may run on any type of computer</p> <p>16 system?</p> <p>17 And I will remind you that that is what it</p> <p>18 says in column 6.</p> <p>19 A. Right. So column 6, line 65, right?</p> <p>20 Q. Yes. Do you agree with that statement in the</p> <p>21 patent?</p> <p>22 (Witness reviewed document.)</p> <p>23 Q. Dr. Khan, you can't answer my question?</p> <p>24 A. No, I can.</p> <p>25 Q. Then can you please answer it?</p>	<p style="text-align: right;">Page 56</p> <p>1 those things, yeah.</p> <p>2 Q. (BY MR. PLAIL) So in order to run the</p> <p>3 algorithm, the general purpose computer would need a</p> <p>4 good CPU and then RAM and discs, correct?</p> <p>5 A. Yeah.</p> <p>6 Q. And why does it need a good CPU?</p> <p>7 MR. PADMANABHAN: Objection; Rule 613.</p> <p>8 You can answer.</p> <p>9 A. Unless -- okay. Because the software program</p> <p>10 needs to run it, right? And the CPU is the main part</p> <p>11 where it will have instruction and execute the</p> <p>12 instruction from the memory and produce the results.</p> <p>13 So if your emission is very slow, it will</p> <p>14 take time. But here -- the idea here is you -- you --</p> <p>15 you log in and you want to see the ranking of the list.</p> <p>16 If it comes after one hour, the list, then it will not</p> <p>17 be useful at all. So that's why some reasonable speed</p> <p>18 would be -- reasonable mission would be</p> <p>19 [unintelligible].</p> <p>20 THE REPORTER: Mission would what?</p> <p>21 A. Reasonable processing power, CPU processing</p> <p>22 power. Central processing unit or reasonable -- I mean,</p> <p>23 if you get the response in a reasonable time.</p> <p>24 Q. (BY MR. PLAIL) And so in order to make sure</p> <p>25 that the computer email system 250 can effectively run</p>

<p>Page 57</p> <p>1 on a general purpose personal computer, you would need</p> <p>2 to make sure that the CPU is powerful enough to run the</p> <p>3 program?</p> <p>4 MR. PADMANABHAN: Objection; Rule 613.</p> <p>5 A. I -- I think this patent focuses on the</p> <p>6 quality of the result. And so I assume that at that</p> <p>7 point, they use reasonable machines to produce the</p> <p>8 quality result. And -- and some of the computation, you</p> <p>9 can think about -- they talk about -- or you were</p> <p>10 worried -- I think you were concerned about that.</p> <p>11 Q. (BY MR. PLAIL) I was just going back to your</p> <p>12 previous statement here. You said that we need a</p> <p>13 powerful enough CPU so that we get the response in a</p> <p>14 reasonable time?</p> <p>15 A. Right, okay.</p> <p>16 Q. And so that --</p> <p>17 A. I want to add a couple of things here -- okay,</p> <p>18 go ahead.</p> <p>19 Q. You said that we need a powerful enough CPU so</p> <p>20 that we get a response in a reasonable time. Part of</p> <p>21 that -- and that is necessary to implement the computer</p> <p>22 mail system 250 on a general purpose computer?</p> <p>23 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>24 613.</p> <p>25 A. Can you say one more time? You gave a long</p>	<p>Page 58</p> <p>1 statement.</p> <p>2 Q. (BY MR. PLAIL) You said we need a powerful</p> <p>3 enough CPU so that we get a response in a reasonable</p> <p>4 time. Part of that is that it is necessary to</p> <p>5 implement -- sorry. I'm going to strike that and start</p> <p>6 over.</p> <p>7 You said that a powerful enough -- that we</p> <p>8 need a powerful enough CPU so that we get a response in</p> <p>9 a reasonable time. That is necessary to implement the</p> <p>10 computer mail system 250 on a general purpose computer.</p> <p>11 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>12 613.</p> <p>13 A. Okay.</p> <p>14 Okay, I want to enter a couple of things.</p> <p>15 The important part is the ranking or the quality -- the</p> <p>16 results will be important in a certain order, right?</p> <p>17 Q. Right. So understanding that the ranking is</p> <p>18 important --</p> <p>19 A. Right.</p> <p>20 Q. -- can you -- can you please tell me where in</p> <p>21 the claim that it says the ranking has to be a certain</p> <p>22 quality?</p> <p>23 MR. PADMANABHAN: Objection; Rule 613.</p> <p>24 A. Otherwise, it will not work, because the</p> <p>25 relevancy mechanism, the relevancy, we mentioned the</p>	<p>Page 59</p> <p>1 relevancy -- said relevancy configure to determine</p> <p>2 relevancy score. So relevancy score is nothing but a</p> <p>3 rank.</p> <p>4 Q. (BY MR. PLAIL) Okay. And what quality is</p> <p>5 necessary here?</p> <p>6 MR. PADMANABHAN: Objection --</p> <p>7 A. So --</p> <p>8 THE REPORTER: Let him -- I'm sorry.</p> <p>9 MR. PADMANABHAN: Objection; Rule 613 and</p> <p>10 611.</p> <p>11 A. So what is your question?</p> <p>12 Q. (BY MR. PLAIL) You said the important part is</p> <p>13 the ranking or the quality. What is the necessary</p> <p>14 quality here?</p> <p>15 MR. PADMANABHAN: And, again, objection;</p> <p>16 Rule 611 and 613.</p> <p>17 A. So the -- we got the relevancy score, right?</p> <p>18 Based on that, it will be presented to the users. And</p> <p>19 if user doesn't like the result, so then in the future,</p> <p>20 if the frequency you are getting -- as a user you are</p> <p>21 getting responses from that system and that are not</p> <p>22 relevant to you in the top of the list, so then the</p> <p>23 system would not be useful. You may not use it. So</p> <p>24 that is the quality of the result what I mean.</p> <p>25 Q. (BY MR. PLAIL) Okay. And how do you test the</p>	<p>Page 60</p> <p>1 quality of the result?</p> <p>2 MR. PADMANABHAN: Objection; Rule 613.</p> <p>3 A. Okay, so that's a very good question. So</p> <p>4 the -- sometimes capture the user feedback, whether it's</p> <p>5 relevant or irrelevant, they have, I guess, five -- four</p> <p>6 or five where you can choose which one you like. Is it</p> <p>7 this content is relevant or irrelevant, or slightly</p> <p>8 relevant, something like this. So that way you can</p> <p>9 capture the feedback.</p> <p>10 Q. (BY MR. PLAIL) I see. So you use the</p> <p>11 feedback to determine whether the ranking is of</p> <p>12 sufficient quality?</p> <p>13 MR. PADMANABHAN: Objection --</p> <p>14 A. That is one --</p> <p>15 MR. PADMANABHAN: Objection; Rule 613.</p> <p>16 Now you can go ahead.</p> <p>17 A. Sorry, what is your question?</p> <p>18 Q. (BY MR. PLAIL) So you use the feedback to</p> <p>19 determine whether the ranking is of sufficient quality?</p> <p>20 MR. PADMANABHAN: Objection; Rule 613.</p> <p>21 A. So this -- the concept of this is one set of</p> <p>22 feedback. They have other set of feedback. Like user</p> <p>23 actions means that how many times it replies, how many</p> <p>24 times it saves the messages. So those type of --</p> <p>25 Q. (BY MR. PLAIL) Those are like the actions of</p>
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<p style="text-align: right;">Page 61</p> <p>1 the user, right?</p> <p>2 A. Right.</p> <p>3 Q. So, I mean, my question is: You're saying an</p> <p>4 important part of this patent is that the ranking is of</p> <p>5 a high quality. How do we determine whether a ranking</p> <p>6 is of a high quality or of a low quality?</p> <p>7 MR. PADMANABHAN: Objection; Rule 613.</p> <p>8 A. Okay. So the ranking will be -- will be</p> <p>9 associated with the user, right? So you may -- I may</p> <p>10 give one type of ranking, you may give another type of</p> <p>11 ranking, feedback. So based on the feedback, they will</p> <p>12 do the -- because is the cognate user a personalization</p> <p>13 will be done, so that way the quality of the result will</p> <p>14 improve over time.</p> <p>15 Q. (BY MR. PLAIL) So you're saying because the</p> <p>16 ranking is associated with the user, for one person it</p> <p>17 may be a great ranking, for another person it may not be</p> <p>18 a great ranking?</p> <p>19 A. Slightly different, yeah.</p> <p>20 MR. PADMANABHAN: Objection; Rule 613.</p> <p>21 Q. (BY MR. PLAIL) And so how --</p> <p>22 A. Can I say something?</p> <p>23 Q. Uh-huh.</p> <p>24 A. So you talk about the powerful CPU, those</p> <p>25 things.</p>	<p style="text-align: right;">Page 63</p> <p>1 ranking, or the scoring mechanism is unique and very</p> <p>2 powerful. And -- and that takes into consideration</p> <p>3 sender importancy. That takes into consideration</p> <p>4 content importancy. That takes into consideration</p> <p>5 global importancy of the sender within the organization.</p> <p>6 And they show some mathematical equations</p> <p>7 how to solve it, how to incorporate all of this, and</p> <p>8 then to talk about the collaborative filtering on top of</p> <p>9 it. So all of this, I believe, will improve the quality</p> <p>10 of the result of the ranking process.</p> <p>11 And in terms of -- I -- I believe they</p> <p>12 probably did some usability study. That's my</p> <p>13 understanding. But probably it was not mentioned here.</p> <p>14 I do not see it, but...</p> <p>15 Q. (BY MR. PLAIL) So you're saying what</p> <p>16 distinguishes the algorithms here over the algorithms in</p> <p>17 the prior art is that this is of a higher quality?</p> <p>18 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>19 Rule 613.</p> <p>20 A. Prior art doesn't talk about especially the --</p> <p>21 you're talking about the Dumaïs, Kircher, and Krug,</p> <p>22 right? So they don't focus on the -- this type of</p> <p>23 system. Kircher might be close, but the other two are</p> <p>24 not focusing on the electronic messaging system. It's</p> <p>25 entirely different. So, therefore -- the closest one in</p>
<p style="text-align: right;">Page 62</p> <p>1 Q. I mean, we've moved past that.</p> <p>2 A. Oh, okay.</p> <p>3 Q. We're talking about the quality. I'm trying</p> <p>4 to get to the bottom of this quality. You're saying</p> <p>5 it's an important part of the invention is the quality</p> <p>6 of the ranking. So when I'm a user and I open up the</p> <p>7 e-mail system and I look at the ranking, how do I</p> <p>8 determine that it is of high quality?</p> <p>9 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>10 613.</p> <p>11 A. One more time, please.</p> <p>12 Q. (BY MR. PLAIL) You're saying an important</p> <p>13 part of the invention is the quality of the ranking. So</p> <p>14 when I'm a user and I open up the e-mail system and I</p> <p>15 look at the ranking, how do I determine that it is of</p> <p>16 high quality?</p> <p>17 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>18 Rule 613.</p> <p>19 A. Okay, so a standard practice is usability</p> <p>20 study. So I -- I -- this patent talks about user's</p> <p>21 feedback will take into consideration, and over time we</p> <p>22 will improve the ranking and more relevance document</p> <p>23 will be shown to the user. That's the expectation.</p> <p>24 So user -- the way the patent is written</p> <p>25 or discussed, this shows a very powerful way to do the</p>	<p style="text-align: right;">Page 64</p> <p>1 terms of the e-mail messaging system is Kircher, but</p> <p>2 Kircher focuses only on the -- on the one particle of</p> <p>3 the users and how that -- the -- when the user gets a</p> <p>4 bunch of e-mail messages and user gives some feedback</p> <p>5 and they will try to -- they're not talking about any</p> <p>6 sender importancy -- sender importancy is there, but</p> <p>7 they're not talking about local relevancy or global</p> <p>8 relevancy. And then the calibrate, if you're doing</p> <p>9 entirely -- these are the concepts entirely missing in</p> <p>10 the case of Kircher.</p> <p>11 Q. (BY MR. PLAIL) So let me ask a question. You</p> <p>12 used the word "collaborative filtering." What does that</p> <p>13 mean?</p> <p>14 A. Okay. So you know the recommendation system,</p> <p>15 Amazon, when you go to -- you probably use the Netflix,</p> <p>16 right?</p> <p>17 Q. I have used Netflix.</p> <p>18 A. Yeah. So you see when you -- you watch some</p> <p>19 movies, and then it -- eventually the system will --</p> <p>20 Netflix recommendation system will start to recommend</p> <p>21 you some additional movies, right?</p> <p>22 Let's say you watch some movies and -- and</p> <p>23 that movie has a certain director and actresses and</p> <p>24 actor, and the system assumes that you probably like it,</p> <p>25 that's why you watch it. And then next time new movie</p>

<p style="text-align: right;">Page 65</p> <p>1 has been released with that actor and actresses, the 2 movie will be -- will be recommended to you. That's 3 called recommendation system. And recommendation -- 4 Q. That's a recommendation system, but not 5 collaborative filtering system? 6 A. So -- yeah. 7 And then there's multiple ways 8 recommendation system works. One is called the 9 content-based recommendation system. The example I gave 10 is more content based. 11 The second one is collaborative. 12 And the latest one now they talk about, 13 latent factor model. 14 Okay. So the collaborative filter -- and 15 you can think about -- let's say there are two person, X 16 and Y, and the collaborative filtering is nothing with 17 the content. It's based on the interest, shared 18 interest. Mr. X and Y both likes certain movies in the 19 past. And then new movie has been released, and Mr. X 20 already likes it. So what is the expectation? That Y 21 will probably like that movie. So the system would 22 recommend that -- that movie to Y. 23 And in the past, also if X and -- X 24 dislikes something, Y also dislikes it. And now new 25 movie has been released and X dislikes it already. So</p>	<p style="text-align: right;">Page 67</p> <p>1 613, Rule 611, and 701 to 704. 2 A. Sorry, I don't get your question. So you say 3 something first collaborative and then X and Y? 4 Q. (BY MR. PLAIL) So let's go to your Netflix 5 example. 6 A. Sure. 7 Q. One part of the recommendation system for 8 Netflix may look at the collaborative aspects, whether X 9 and Y enjoyed the same movie, right? 10 A. Uh-huh. 11 Q. And then a second part of the recommendation 12 system may look at the content of that movie, correct? 13 MR. PADMANABHAN: Objection; Rule 613, 14 611, 701 through 704. 15 A. So you're saying second case you look for the 16 content? 17 Q. (BY MR. PLAIL) I'm saying the recommendation 18 system would consider both. 19 MR. PADMANABHAN: Objection; Rule 611 -- 20 (Cross talk.) 21 MR. PADMANABHAN: -- 704 and 613. 22 A. When this -- the techniques were proposed 23 around that 2019 time, so people first started to use 24 content base, and then content base has pros and cons. 25 Then collaborative filtering has pros and cons. So they</p>
<p style="text-align: right;">Page 66</p> <p>1 that's recommendation -- collaborative filtering would 2 not recommend that movie to Y. So it's based on the 3 similar interest, that type of thing. It's nothing with 4 the content. 5 Q. And for recommendation systems, these 6 collaborative filtering techniques are often combined 7 with content filtering, correct? 8 MR. PADMANABHAN: Objection; Rule 613 and 9 611. 10 A. I'm sorry, can you say it? 11 Q. (BY MR. PLAIL) These recommendation systems, 12 collaborative filtering techniques are often combined 13 with content filtering, correct? 14 MR. PADMANABHAN: Objection; Rule 613. 15 A. In a standard recommendation system, right. 16 At that time? 17 Q. (BY MR. PLAIL) Yes. 18 A. That's possible, yes. 19 Q. So if we use your Netflix example, part of the 20 system may look at whether X and Y both enjoyed the same 21 movie, and a second part of the system may look at, for 22 example, the content of that movie, the director -- 23 MR. PADMANABHAN: Objection -- 24 Q. (BY MR. PLAIL) -- correct? 25 MR. PADMANABHAN: Sorry. Objection; Rule</p>	<p style="text-align: right;">Page 68</p> <p>1 tried to overcome this, too, by combining this, too, 2 yeah. 3 Q. (BY MR. PLAIL) I see. And you say that was 4 in the 2019 time period? 5 A. No. I said -- I couldn't remember the time 6 period, but around the time of when this patent was 7 filed -- 8 Q. I see. 9 A. -- or a little bit earlier, maybe. 10 Q. Okay. So around 2005, people started using 11 content-based -- 12 A. I think a little bit earlier, probably. 13 Q. Okay. And then around the same time, people 14 started using collaborative filtering? 15 A. Right. 16 Q. All right. 17 A. Collaborative filtering was introduced around 18 2000 or a little bit earlier. 19 Q. Okay. So collaborative filtering was 20 introduced around 2000? 21 A. I don't want to -- under oath, I don't want to 22 say exact date, because I cannot remember exact timing, 23 but -- 24 Q. Let me -- let me rephrase. Collaborative 25 filtering was introduced approximately around the year</p>

<p>Page 69</p> <p>1 2000?</p> <p>2 A. A little bit earlier or -- yeah, at that time.</p> <p>3 Q. Okay. And people understood that there were</p> <p>4 pros and cons with collaborative filtering?</p> <p>5 A. Both methods have a strength and weakness.</p> <p>6 Q. And by "both methods," you mean --</p> <p>7 A. Both content based and collaborative.</p> <p>8 Q. Okay. And one of the ways they were trying to</p> <p>9 overcome these pros and cons was by combining the two?</p> <p>10 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>11 613.</p> <p>12 A. Yes.</p> <p>13 Q. (BY MR. PLAIL) And so just so I understand</p> <p>14 collaborative filtering in a little more detail,</p> <p>15 collaborative filtering is basically a technique to use</p> <p>16 the opinion of peers to predict interests of a user.</p> <p>17 MR. PADMANABHAN: Objection; Rule 401 to</p> <p>18 403.</p> <p>19 A. Sorry, say it one more time.</p> <p>20 Q. (BY MR. PLAIL) Collaborative filtering is</p> <p>21 basically a technique to use the opinion of your peers</p> <p>22 to predict interests of a user?</p> <p>23 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>24 401 to 403.</p> <p>25 A. Okay, I need to know -- okay. So go slowly,</p>	<p>Page 71</p> <p>1 A. Action is one way to say.</p> <p>2 Q. So, basically, the actions of one user on a</p> <p>3 piece of content is used to predict the relevance of</p> <p>4 that content for another user?</p> <p>5 A. Okay, please say --</p> <p>6 Q. The actions of one user on a piece of content</p> <p>7 is used to predict the relevance of that content for</p> <p>8 another user?</p> <p>9 A. The action of a user is going to predict --</p> <p>10 Q. The actions of a user on a piece of content is</p> <p>11 used to predict the relevance of that content for</p> <p>12 another user?</p> <p>13 A. Action of a user want to predict the action of</p> <p>14 that?</p> <p>15 Q. The actions of a user on a piece of content is</p> <p>16 used to predict the relevance of that content for</p> <p>17 another user?</p> <p>18 A. Yes.</p> <p>19 THE WITNESS: Can we take a break or</p> <p>20 something?</p> <p>21 MR. PLAIL: Yes. We can take a</p> <p>22 five-minute break or so.</p> <p>23 (Break taken from 10:51 a.m. to</p> <p>24 10:58 a.m.)</p> <p>25 Q. (BY MR. PLAIL) Can you turn to paragraph 158</p>
<p>Page 70</p> <p>1 please.</p> <p>2 Q. (BY MR. PLAIL) Collaborative filtering is</p> <p>3 basically a technique to use the opinion of your peers</p> <p>4 to predict the interests of a user?</p> <p>5 MR. PADMANABHAN: Same objections.</p> <p>6 A. So a user is a part of the peers group? The</p> <p>7 wording is a little bit difficult to follow.</p> <p>8 Q. (BY MR. PLAIL) Would that make a difference?</p> <p>9 MR. PADMANABHAN: Objection; Rule 613 and</p> <p>10 611, 701 to 704.</p> <p>11 A. So please say it one more time, your</p> <p>12 definition.</p> <p>13 Q. (BY MR. PLAIL) Collaborative filtering is the</p> <p>14 technique of using peer opinions to predict the</p> <p>15 interests of others?</p> <p>16 MR. PADMANABHAN: Objection; Rule 613,</p> <p>17 611, 701 to 704.</p> <p>18 A. Collaborative filtering is -- is a technique,</p> <p>19 too?</p> <p>20 Q. (BY MR. PLAIL) Using peer opinions to predict</p> <p>21 the interests of others?</p> <p>22 A. Peer opinions. So in this case "opinion"</p> <p>23 means -- okay. Yeah, if you can say "opinion" means</p> <p>24 actions are -- yes, yes.</p> <p>25 Q. And you referred to actions?</p>	<p>Page 72</p> <p>1 of your declaration?</p> <p>2 A. 158. The Krug?</p> <p>3 Q. Yes, you say there that "Krug does not</p> <p>4 incorporate a relational model for objects, whereas the</p> <p>5 '217 patent emphasizes a relational model" [as read].</p> <p>6 What is a relational model?</p> <p>7 A. Okay, so here in the patent '217, we're</p> <p>8 talking about the messages, and the message has a</p> <p>9 submessage. And the sub -- let's say it sends a message</p> <p>10 to B, and B sends a message to C, and C sends a message</p> <p>11 to D. So this way, the submessages will be added. They</p> <p>12 call it -- and they want to keep this in a</p> <p>13 traditional -- at that time, traditional e-mail</p> <p>14 messaging system, they keep multiple copies of the same</p> <p>15 message in the system. Then you will waste storage and</p> <p>16 so on.</p> <p>17 This is an issue. So they tried to</p> <p>18 address this issue, called it relational model. For</p> <p>19 each message, they will keep only one copy in the</p> <p>20 system.</p> <p>21 Q. I see.</p> <p>22 A. So that way the storage will be saved. So</p> <p>23 that's -- and for that, they try to use the relational</p> <p>24 model means in a database you maintain relations or</p> <p>25 pointers. So one copy is kept, and then you say this</p>

<p>Page 73</p> <p>1 copy is referenced by this. Another e-mail message is 2 sent and so on. So the reference is points that are 3 maintained. 4 Q. So your point here is that the '217 patent 5 uses that relational system but Krug does not? 6 A. Right; to store the messages, yeah. 7 Q. But Krug does not? 8 A. It doesn't talk about that, yeah, how -- how 9 to storage -- how do you -- how do you store the 10 objects. 11 Q. So you're saying that the relational model is 12 a requirement of the claim? 13 A. I'm sorry, relational? 14 Q. The -- are you saying that the relational 15 model is a requirement of the claim? 16 A. Of which claim? The -- 17 Q. The patent claims. 18 A. Yeah, I saw in the patent '217 that talks 19 about relational model in one of the claim. And I 20 think -- yeah, in the Claim 4. 21 Q. Okay. So you're saying the relational model 22 is required for Claim 4? 23 MR. PADMANABHAN: Objection; Rule -- yeah, 24 objection; Rule 611. 25 (Witness reviewed document.)</p>	<p>Page 75</p> <p>1 A. I'm just double-checking... 2 (Witness reviewed document.) 3 A. No. 4 Q. So then it doesn't really matter that Krug 5 doesn't have a relational model? 6 MR. PADMANABHAN: Objection; 611. 7 A. So -- but -- but are we talking about only 8 Claim 1? We're not talking about only Claim 1. We're 9 talking about the multiple claims here, right? 10 Q. (BY MR. PLAIL) For Claim 1, it doesn't matter 11 that Krug doesn't have a relational model? 12 MR. PADMANABHAN: Objection; 611. 13 A. Right. 14 Q. (BY MR. PLAIL) I'm going to hand you what has 15 already been marked as Exhibit 1043. Do you recognize 16 this document? 17 A. Yeah. 18 Q. This is another patent assigned -- strike 19 that. 20 This is another patent which lists Justin 21 Marston as a named inventor, correct? 22 A. Uh-huh. 23 Q. Do you see that this patent was filed in 2004? 24 A. Uh-huh. 25 Q. You understand that this patent has also been</p>
<p>Page 74</p> <p>1 A. So your question is -- can you say one more 2 time the question, please? 3 Q. (BY MR. PLAIL) You're saying the relational 4 model is required for Claim 4? 5 A. Relational model is required for Claim 4... 6 (Witness reviewed document.) 7 A. So in terms of how to store this mail objects, 8 relational model, that's how in Claim 4 they mention 9 that in patent '217. 10 Q. So Claim 4 requires the use of a relational 11 model? 12 A. Yes. 13 Q. Okay. But Claim 1 does not require the use of 14 a relational model? 15 A. But Claim 4 is a dependent claim, right? 16 Q. Correct. 17 A. Yeah. So Claim 1 doesn't talk about 18 relational model, but it -- Claim 4 talks about 19 relational model. 20 Q. So does Claim 1 require a relational model? 21 MR. PADMANABHAN: Objection; Rule 611. 22 (Witness reviewed document.) 23 A. So your question is Claim 1 is -- requires a 24 relational model or not, right? 25 Q. (BY MR. PLAIL) [Nods head.]</p>	<p>Page 76</p> <p>1 asserted as prior art against the '217 patent? 2 A. Uh-huh. 3 MR. PADMANABHAN: You have to say "yes" or 4 "no." 5 A. Sorry, can you say one... 6 Q. (BY MR. PLAIL) Do you see that this patent 7 was filed in 2004? 8 A. Yes. 9 Q. Do you understand that this patent has been 10 asserted as prior art against the '217 patent? 11 A. Yes. 12 Q. Do you see in the abstract, it says, "A 13 messaging system uses a relational model to represent 14 messages exchanged among n users of the system" [as 15 read]? 16 A. Uh-huh. 17 Q. Can you say "yes" or "no"? 18 A. "Yes" or "no" for what? The messaging system 19 uses a relational model. 20 MR. PADMANABHAN: He's reading that first 21 sentence. 22 Q. (BY MR. PLAIL) Yes, I'm reading the first 23 sentence of the abstract. I'll ask the question again. 24 The abstract of this patent says, "A 25 messaging system uses a relational model to represent</p>

<p>Page 77</p> <p>1 messages exchanged among n users of the system" [as 2 read]. 3 Is that correct? 4 A. So you're asking me in general or this -- for 5 this patent? 6 Q. I'm asking whether this patent says that 7 statement. 8 A. Yeah; that's correct, yeah. 9 Q. Okay. So this patent discloses a relational 10 model to represent messages exchanged among n users, 11 correct? 12 A. That's correct. 13 Q. And you understand that this patent is 14 asserted as prior art for the relational aspects of the 15 claim? 16 MR. PADMANABHAN: Objection; Rule 611. 17 A. Okay, what is -- can you say one more time? 18 Q. (BY MR. PLAIL) You understand that this 19 patent has been asserted in this IPR as prior art 20 against the relational aspects of the claim? 21 MR. PADMANABHAN: Objection; Rule 611. 22 A. The patent '217 and this patent have the same 23 inventors, right? Same inventors? 24 Q. (BY MR. PLAIL) No, no. 25 A. No? At least one of them.</p>	<p>Page 79</p> <p>1 '217 patent that the term "relational model" as used 2 here is the same as how "relational model" is used in 3 the '217 patent? 4 MR. PADMANABHAN: Objection; Rule 611. 5 A. But patent '217, the focus is different. As 6 a more improved ranking or the quality of the result. 7 Q. (BY MR. PLAIL) Right. The focus of the '217 8 is not on the relational model? 9 A. No; underneath that to provide the 10 infrastructure support of where the messages will be 11 stored, they use the relational model. 12 Q. But it's not required to use the relational 13 model; we've established that? 14 A. Is -- the way the -- if you read the Claim 1, 15 it's not required for Claim 1. 16 Q. Uh-huh. 17 A. But if you read the Claim 4, there, they talk 18 about which is the Claim 4 is a dependent claim that 19 talks about the relational system, yeah, relational 20 model we need to take into consideration. 21 Q. And this discloses that relational model? 22 A. Right. 23 Q. Okay. Looking at the abstract -- 24 A. Uh-huh, which abstract? The -- the -- 25 Q. The abstract of the --</p>
<p>Page 78</p> <p>1 Q. They have a single overlapping inventor. 2 A. So your question is: Can you treat them as 3 prior art? That's your question? 4 Q. No, that's not my question. 5 My question is: Do you understand that 6 this has been asserted as prior art? 7 A. What does "asserted" means? 8 Q. Do you understand that X Corp. is arguing that 9 this is prior art against the '217 patent? 10 A. Yeah, that, I understand. 11 Q. Yeah. And you understand that this patent 12 discloses a relational model? 13 A. Yes. 14 Q. All right. And you understand that they share 15 a common inventor? 16 A. Yes. 17 Q. And you would understand that, because they 18 share a common inventor, the way the relational model is 19 used in this patent is the same as the way relational 20 model is used in the '217 patent? 21 MR. PADMANABHAN: Objection; Rule 613 and 22 611. 23 A. Say it one more time, that last part. 24 Q. (BY MR. PLAIL) You understand because the 25 same person is an inventor on both this patent and the</p>	<p>Page 80</p> <p>1 A. The -- 2 Q. The abstract of Exhibit 1043. It's right here 3 on the front page. 4 A. 1043, yeah. 5 Q. It says, "The messaging system stores each 6 object only once" [as read]. 7 Do you see that? 8 A. Where does it say? 9 Q. In the abstract. 10 A. Yeah, I know that, but let me read... 11 (Witness reviewed document.) 12 A. Yeah, uh-huh; I saw that, uh-huh. 13 Q. And so that is one of the benefits of using a 14 relational model, correct? 15 A. Yes. 16 Q. The next sentence says, "The messaging system 17 thus significantly reduces infrastructure costs by 18 removing unnecessary duplicity and providing enterprises 19 with the content granularity they need to enforce 20 regulatory compliance and other policies" [as read]. 21 A. Uh-huh. 22 Q. That's what the next sentence says, right? 23 (Witness reviewed document.) 24 A. Yes. 25 Q. And that is another benefit of a relational</p>

<p style="text-align: right;">Page 81</p> <p>1 model?</p> <p>2 A. Okay, yes.</p> <p>3 Q. And so a person of skill would have been</p> <p>4 motivated to use the relational model disclosed in the</p> <p>5 Marston patent here in order to take advantage of those</p> <p>6 benefits, correct?</p> <p>7 MR. PADMANABHAN: Objection; Rule 613 and</p> <p>8 Rule 611.</p> <p>9 A. Can you say one more time?</p> <p>10 Q. (BY MR. PLAIL) A person of ordinary skill</p> <p>11 would have been motivated to use the relational model</p> <p>12 disclosed in the Marston patent in order to take</p> <p>13 advantage of those benefits, correct?</p> <p>14 MR. PADMANABHAN: Objection; Rule 613.</p> <p>15 A. Yes.</p> <p>16 Q. (BY MR. PLAIL) Do you understand that the</p> <p>17 Marston patent is discussing a messaging system that</p> <p>18 uses a relational model?</p> <p>19 A. This one, right? Or the Exhibit 1043?</p> <p>20 Q. Yes.</p> <p>21 A. They're using relational system?</p> <p>22 Q. Do you understand that Exhibit 1043 is</p> <p>23 discussing a messaging system using a relational model?</p> <p>24 A. Yes.</p> <p>25 Q. Can you go to Figure 1? In Figure 1, do you</p>	<p style="text-align: right;">Page 83</p> <p>1 web browser module 120, right?</p> <p>2 MR. PADMANABHAN: Objection; Rule 613.</p> <p>3 A. Yes; web browser, yeah.</p> <p>4 Q. (BY MR. PLAIL) And it says that, "The web</p> <p>5 browser module 120 is a conventional web browser</p> <p>6 application, such as Internet Explorer from Microsoft</p> <p>7 Corp" [as read].</p> <p>8 A. Uh-huh, right.</p> <p>9 Q. So this is an example of using a web browser</p> <p>10 within a client application for a messaging system,</p> <p>11 correct?</p> <p>12 MR. PADMANABHAN: Objection; misstates</p> <p>13 the -- objection; Rule 611.</p> <p>14 A. Okay. And so -- what -- what are you saying?</p> <p>15 Q. (BY MR. PLAIL) This is an example of using a</p> <p>16 web browser within a client application for a messaging</p> <p>17 system, correct?</p> <p>18 A. To display the end results for visualization</p> <p>19 purpose, presentation purpose, this browser will be</p> <p>20 used. Not for the underneath messaging -- relational</p> <p>21 model, no.</p> <p>22 Q. And that's because e-mails are commonly HTML?</p> <p>23 A. E-mail is -- no, e-mail is a text, a bunch of</p> <p>24 text, raw text.</p> <p>25 Q. Which is formatted?</p>
<p style="text-align: right;">Page 82</p> <p>1 see the box on the bottom left?</p> <p>2 A. Uh-huh.</p> <p>3 Q. Do you see how the client application, which</p> <p>4 is labeled 112A, and a web browser labeled 120?</p> <p>5 A. 112A and 120, yeah. I saw it.</p> <p>6 Q. So if we -- I'm going to direct you to the</p> <p>7 paragraph that discusses this part of the figure. Go to</p> <p>8 paragraph 30.</p> <p>9 A. Okay, the block 30, right?</p> <p>10 Q. Yes.</p> <p>11 A. Column 3, okay. Yeah.</p> <p>12 Q. You see there that is it discussing Figure 1</p> <p>13 and the client application 112A, right?</p> <p>14 A. Yeah. I should read it?</p> <p>15 Q. Sure. You can read it.</p> <p>16 (Witness reviewed document.)</p> <p>17 Q. Are you finished reading?</p> <p>18 A. Just give me one or two minutes.</p> <p>19 (Witness reviewed document.)</p> <p>20 Q. Dr. Khan?</p> <p>21 A. Yeah.</p> <p>22 Q. I have a pretty simple question.</p> <p>23 A. Sure, yeah. Sorry.</p> <p>24 Q. That paragraph, paragraph 30 of Exhibit 1043,</p> <p>25 is discussing a client application 112 that includes a</p>	<p style="text-align: right;">Page 84</p> <p>1 A. Yeah, you can convert it into HTML, XML, any</p> <p>2 format. But for visualization, you can show it in a</p> <p>3 browser, yeah.</p> <p>4 Q. And a common way to format e-mail is with</p> <p>5 HTML, correct?</p> <p>6 A. HTML is widely used for presentation purpose.</p> <p>7 For the web content, that will be --</p> <p>8 Q. Correct. And it's also widely used for</p> <p>9 presentation of e-mails, correct?</p> <p>10 A. I think at that time, 2005. Nowadays, browser</p> <p>11 is based together, so the browser is -- the e-mail</p> <p>12 system is integrated with the browser nowadays.</p> <p>13 Nowadays.</p> <p>14 Q. Okay, you can go ahead and put aside</p> <p>15 Exhibit 1043.</p> <p>16 A. You're telling me something?</p> <p>17 Q. I'm just saying --</p> <p>18 A. Oh, we don't need it now?</p> <p>19 Q. I may go back to it later, but...</p> <p>20 A. Sure.</p> <p>21 Q. All right. I'm going to direct you to</p> <p>22 paragraph 25 of your declaration.</p> <p>23 A. Yeah.</p> <p>24 Q. This is the section of your report relating to</p> <p>25 claim construction.</p>

<p style="text-align: right;">Page 85</p> <p>1 A. Uh-huh.</p> <p>2 Q. And I see you have a number of opinions</p> <p>3 relating to some of the module terms, but I just wanted</p> <p>4 to confirm -- before we dive in, I just wanted to</p> <p>5 confirm you did not have any testimony relating to the</p> <p>6 term "recipient" in the claim construction section?</p> <p>7 A. So you are saying the recipient is not</p> <p>8 mentioned here in the claim construction?</p> <p>9 Q. Yes. I'm asking, do you have any opinions in</p> <p>10 the claim construction portion of your report relating</p> <p>11 to the meaning of the term "recipient"?</p> <p>12 A. I saw in 37, we talk about recipient. "Second</p> <p>13 relevancy model is coupled to the monitoring model</p> <p>14 configure to identify at least one other of the</p> <p>15 plurality of users that is a recipient of the electronic</p> <p>16 content" [as read].</p> <p>17 Q. Okay. And so that's the only place you</p> <p>18 discuss recipient in this section?</p> <p>19 A. I have to take a look.</p> <p>20 (Witness reviewed document.)</p> <p>21 A. We mentioned in many places the -- the user,</p> <p>22 but not the recipient explicitly. The recipient is</p> <p>23 mentioned in one place, 37, but other places we mention</p> <p>24 the user.</p> <p>25 Q. But you're not providing any specific</p>	<p style="text-align: right;">Page 87</p> <p>1 not provide testimony on that, Dr. Khan?</p> <p>2 A. Yeah.</p> <p>3 Q. When you -- what -- when you say "no," you're</p> <p>4 agreeing that you are not providing specific testimony</p> <p>5 in the claim construction section on the meaning of the</p> <p>6 term "cognate user"?</p> <p>7 A. When it says "specific construction," what</p> <p>8 does it mean?</p> <p>9 Q. Dr. Khan, you've already said you agreed. I'm</p> <p>10 just asking you to confirm your answer here for the</p> <p>11 record.</p> <p>12 A. Yeah; so when you say "specific construction"</p> <p>13 means --</p> <p>14 Q. You're not providing specific testimony</p> <p>15 relating to the meaning of the term "cognate to the</p> <p>16 user" here in the claim construction section?</p> <p>17 A. That's correct.</p> <p>18 Q. Okay. And in the claim construction section,</p> <p>19 you do -- strike that.</p> <p>20 In the claim construction section, you do</p> <p>21 not provide any specific testimony relating to the</p> <p>22 meaning of the identifying term?</p> <p>23 A. So please say it one more time.</p> <p>24 Q. In the claim construction section, you do not</p> <p>25 provide any specific testimony relating to the meaning</p>
<p style="text-align: right;">Page 86</p> <p>1 testimony about the meaning of the word "recipient"</p> <p>2 here?</p> <p>3 A. No. Recipient is an important concept.</p> <p>4 Q. I understand it's an important concept. But</p> <p>5 you're not providing any specific testimony here about</p> <p>6 the meaning of the term "recipient"?</p> <p>7 MR. PADMANABHAN: And "here" being in the</p> <p>8 claim construction section?</p> <p>9 MR. PLAIL: Correct.</p> <p>10 A. So 37 would not be enough? Is that what</p> <p>11 you're saying?</p> <p>12 Q. (BY MR. PLAIL) I'm not saying anything. I'm</p> <p>13 asking you a question whether you're providing any</p> <p>14 testimony about the meaning of the word "recipient" here</p> <p>15 in the claim construction section.</p> <p>16 A. No.</p> <p>17 Q. Okay. And you're also not providing any</p> <p>18 specific testimony relating to the meaning of the term</p> <p>19 "cognate to the user"?</p> <p>20 A. So you mean the cognate to user we do not</p> <p>21 define in the claim, that's what you're saying?</p> <p>22 Q. I'm saying you don't provide testimony about</p> <p>23 the meaning of that term here?</p> <p>24 A. No.</p> <p>25 Q. And when you say "no," you're agreeing you did</p>	<p style="text-align: right;">Page 88</p> <p>1 of the identifying term?</p> <p>2 MR. PADMANABHAN: Objection; 401 to 403.</p> <p>3 A. So say one more time, the question.</p> <p>4 Q. (BY MR. PLAIL) In the claim construction</p> <p>5 section, you do not provide any specific testimony</p> <p>6 relating to the meaning of the identifying term?</p> <p>7 A. Identifying terms, or what is -- when you said</p> <p>8 "terms," what does it mean?</p> <p>9 Q. The identifying limitation in the claim.</p> <p>10 A. Oh, okay.</p> <p>11 MR. PADMANABHAN: Objection; 401 to 403.</p> <p>12 THE WITNESS: I need to answer?</p> <p>13 Q. (BY MR. PLAIL) Yes.</p> <p>14 MR. PADMANABHAN: Yeah, if you -- if you</p> <p>15 understand it.</p> <p>16 (Witness reviewed document.)</p> <p>17 MR. PADMANABHAN: I'm only doing this to</p> <p>18 speed this up. I don't think he really understands.</p> <p>19 When you said "identifying term," I don't think he knows</p> <p>20 what you're talking about. And I'm just telling you</p> <p>21 that for your own benefit.</p> <p>22 Q. (BY MR. PLAIL) Okay. Is that fair?</p> <p>23 A. Yeah.</p> <p>24 Q. Okay. Can you go to the table of contents of</p> <p>25 your -- of your report?</p>

<p style="text-align: right;">Page 89</p> <p>1 A. Uh-huh.</p> <p>2 Q. Do you see how on the second page of your</p> <p>3 report, you say -- you testified, "Dumais does not</p> <p>4 teach, disclose, or render obvious the limitation of</p> <p>5 identifying at least one other of the plurality of users</p> <p>6 that is a recipient of the piece of the electronic</p> <p>7 content and that is cognate to the user" [as read].</p> <p>8 A. Which one, that's page 2?</p> <p>9 Q. Yes; the bottom of page 2.</p> <p>10 A. The last one, number 2?</p> <p>11 Q. The last one, yeah.</p> <p>12 A. Okay. Yeah.</p> <p>13 Q. When I'm referring to the "identifying</p> <p>14 limitation," I'm referring to that limitation,</p> <p>15 identifying at least one other of the plurality of users</p> <p>16 that is a recipient of the piece of electronic content</p> <p>17 and that is cognate to the user.</p> <p>18 A. Uh-huh.</p> <p>19 Q. Do you understand?</p> <p>20 A. Yes.</p> <p>21 Q. In the claim construction section, you do not</p> <p>22 provide any specific testimony on the meaning of the</p> <p>23 identifying limitation. Is that correct?</p> <p>24 A. That's correct, yeah.</p> <p>25 Q. Okay. I -- do you know what a MarkKush group</p>	<p style="text-align: right;">Page 91</p> <p>1 A. Uh-huh.</p> <p>2 Q. Let's go to line 46.</p> <p>3 A. Yeah.</p> <p>4 Q. Do you see where it starts with "determine a</p> <p>5 second measure of relevance"?</p> <p>6 A. Uh-huh.</p> <p>7 Q. Do you see that?</p> <p>8 A. Right.</p> <p>9 Q. "Determine a second measure of relevance of</p> <p>10 the piece of electronic content as based, at least in</p> <p>11 part, on one or more measures derived from the group</p> <p>12 consisting of" [as read].</p> <p>13 Do you see that?</p> <p>14 A. Yeah.</p> <p>15 Q. Do you understand that when it says "one or</p> <p>16 more measures," it's not required that the claim used</p> <p>17 all of the measures?</p> <p>18 A. Right.</p> <p>19 Q. It's only required -- strike that.</p> <p>20 For the prior art to disclose the claim,</p> <p>21 it is only required that it disclose one of the</p> <p>22 measures?</p> <p>23 A. Okay.</p> <p>24 MR. PADMANABHAN: Objection; Rule 613.</p> <p>25 But go ahead. You can keep going.</p>
<p style="text-align: right;">Page 90</p> <p>1 is?</p> <p>2 A. The other patent, you mean?</p> <p>3 Q. No. MarkKush group. Dr. Houh testified about</p> <p>4 the meaning of a MarkKush group. Do you recall that?</p> <p>5 A. No.</p> <p>6 Q. Okay. Can you go to Claim 1 of the '217</p> <p>7 patent?</p> <p>8 A. Uh-huh.</p> <p>9 Q. So just to be clear, you don't understand</p> <p>10 generally what a MarkKush group is?</p> <p>11 A. No. I read it, but I could not recall, but if</p> <p>12 you show me, I can --</p> <p>13 Q. I'm just asking, sitting here today, you don't</p> <p>14 know what a MarkKush group is?</p> <p>15 A. I read it, I remember. But I -- now I cannot</p> <p>16 recall that at this point.</p> <p>17 Q. Okay. Simple question: Since you cannot</p> <p>18 recall, do you agree that you didn't provide any</p> <p>19 specific testimony on the construction of the MarkKush</p> <p>20 group in the claim?</p> <p>21 A. No; that's not the reason why.</p> <p>22 Q. Okay. So you did provide specific testimony</p> <p>23 about the MarkKush group in the claim?</p> <p>24 Let me make this simple. Let's go to</p> <p>25 Claim 1.</p>	<p style="text-align: right;">Page 92</p> <p>1 Q. (BY MR. PLAIL) Do you understand that for the</p> <p>2 prior art to disclose the claim, it is only required</p> <p>3 that it discloses one of the measures?</p> <p>4 MR. PADMANABHAN: Objection; Rule 613.</p> <p>5 A. Okay, say one more time, what is your</p> <p>6 question?</p> <p>7 Q. (BY MR. PLAIL) Do you understand that under</p> <p>8 the claim for the prior art to disclose the claim, it is</p> <p>9 only required that it discloses one of the measures?</p> <p>10 MR. PADMANABHAN: Objection; Rule 613.</p> <p>11 A. Yeah, it requests one or more, right?</p> <p>12 Q. (BY MR. PLAIL) So the prior art only needs to</p> <p>13 disclose one?</p> <p>14 A. That -- okay. So the -- the second relevancy</p> <p>15 means will utilize multiple methods, right? And as</p> <p>16 the -- but in order to -- because the system will start</p> <p>17 at the beginning, may not have enough data for various</p> <p>18 components. I call it components. Let's say they are</p> <p>19 more than one, local, global, then content, and then the</p> <p>20 collaborative. Four components, let's say.</p> <p>21 And some of the components may not have</p> <p>22 value at the beginning or -- may not make sense to use.</p> <p>23 But over time, this will contribute in the -- in the</p> <p>24 calculation and become -- the system becomes more</p> <p>25 stable.</p>

<p style="text-align: right;">Page 93</p> <p>1 So I think in order to -- in order to the</p> <p>2 system fully functional, we eventually need to utilize</p> <p>3 all of this -- some of these values.</p> <p>4 Q. Okay. So it's your opinion that in order for</p> <p>5 the system to be fully functional, you need to utilize</p> <p>6 all four of the measures listed there?</p> <p>7 MR. PADMANABHAN: Objection; Rule 611.</p> <p>8 A. No, not all four, but I'm saying if --</p> <p>9 Q. (BY MR. PLAIL) I mean -- I'm going to quote</p> <p>10 from your testimony. "In order to the system" -- sorry.</p> <p>11 "In order for the system to be fully</p> <p>12 functional, we eventually need to utilize all of this,</p> <p>13 some of these values" [as read].</p> <p>14 What do you mean by that?</p> <p>15 MR. PADMANABHAN: Objection; Rule 611.</p> <p>16 A. For example, the local relevancy depends on</p> <p>17 the -- the individual importancy component or relevancy</p> <p>18 component. And then -- yeah, okay. So local</p> <p>19 relevance -- local importancy utilized on the individual</p> <p>20 importancy component, it relies on the cognate users,</p> <p>21 and then it also relies on the global relevancy. So</p> <p>22 these three will contribute on the local relevancy --</p> <p>23 local importancy calculation.</p> <p>24 Q. (BY MR. PLAIL) And so simple question: Do</p> <p>25 you need all four of them?</p>	<p style="text-align: right;">Page 95</p> <p>1 necessarily --</p> <p>2 Q. So I'm just confused. Are all of them</p> <p>3 required?</p> <p>4 A. No, not all of them are required.</p> <p>5 Q. Because you keep saying all of them are</p> <p>6 required.</p> <p>7 A. Right, okay. I made a wrong statement, yeah.</p> <p>8 Q. Okay. So are all four of these measures</p> <p>9 required?</p> <p>10 A. All four, no.</p> <p>11 Q. Okay. Which of them are required?</p> <p>12 A. That, I cannot answer because it requires</p> <p>13 empirical study.</p> <p>14 Q. So a person of skill in the art reading the</p> <p>15 claim would not be able to determine which of these four</p> <p>16 measures is required?</p> <p>17 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>18 Rule 613.</p> <p>19 A. So you're saying person of ordinary skill set</p> <p>20 would --</p> <p>21 Q. (BY MR. PLAIL) A person of ordinary skill in</p> <p>22 the art reading the claims would not be able to</p> <p>23 determine which of the four measures are required?</p> <p>24 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>25 613.</p>
<p style="text-align: right;">Page 94</p> <p>1 MR. PADMANABHAN: Objection; Rule 611.</p> <p>2 A. Not necessarily, but -- at the beginning, no.</p> <p>3 But, eventually, when the system becomes stable, this</p> <p>4 will contribute and affect positively in that.</p> <p>5 Q. (BY MR. PLAIL) Okay. So for the system to</p> <p>6 become stable, you will need all four of them?</p> <p>7 MR. PADMANABHAN: Objection; misstates --</p> <p>8 sorry, Rule 611.</p> <p>9 A. I'm not saying all four are required, but some</p> <p>10 of them may be required to produce quality results.</p> <p>11 THE REPORTER: I'm sorry, some of them may</p> <p>12 be what?</p> <p>13 THE WITNESS: May be --</p> <p>14 MR. PADMANABHAN: Produce quality results.</p> <p>15 Q. (BY MR. PLAIL) Which ones are required to</p> <p>16 produce quality results?</p> <p>17 MR. PADMANABHAN: Objection; Rule 613.</p> <p>18 A. That's hard to say at this point, because the</p> <p>19 system, you have to -- similar do the study, or -- but I</p> <p>20 think collaborative at the time will play significant</p> <p>21 role.</p> <p>22 Q. (BY MR. PLAIL) So you're saying the</p> <p>23 collaborative filtering measure --</p> <p>24 A. No, no, I'm not saying collaborative filter.</p> <p>25 I'm saying all of them are required, yeah. But it's not</p>	<p style="text-align: right;">Page 96</p> <p>1 A. No, they understand that they need to use one</p> <p>2 of them or some of them, right, for the ranking process.</p> <p>3 Q. (BY MR. PLAIL) So I asked which of them are</p> <p>4 required, you answered, that, I cannot answer because it</p> <p>5 requires an empirical study.</p> <p>6 So how does a person of ordinary skill in</p> <p>7 the art figure out which of the measures are required</p> <p>8 without an empirical study?</p> <p>9 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>10 613.</p> <p>11 A. Then the person of ordinary skill set would</p> <p>12 run it and do the empirical study. If the time permits,</p> <p>13 then they will get the results and they can come up with</p> <p>14 the conclusion.</p> <p>15 Q. (BY MR. PLAIL) Okay. So a person of ordinary</p> <p>16 skill in the art would need to run an empirical study to</p> <p>17 determine which of the four measures is required?</p> <p>18 MR. PADMANABHAN: Objection; Rules 611 and</p> <p>19 613.</p> <p>20 A. Well, it depends on the scenario, also. So</p> <p>21 from person to person and the results.</p> <p>22 Q. (BY MR. PLAIL) Okay. Can you turn back to</p> <p>23 your declaration? Actually, one more question.</p> <p>24 Earlier when we were talking about the</p> <p>25 server, you were looking at Figure 4. Why were you</p>

<p style="text-align: right;">Page 97</p> <p>1 looking at Figure 4?</p> <p>2 A. You're asking me -- on the patent or --</p> <p>3 Q. Yes, on the patent.</p> <p>4 A. '217, right?</p> <p>5 Q. Yes.</p> <p>6 A. I'm looking for Figure 4? No, you asked me a</p> <p>7 question about the scalability, that's right.</p> <p>8 Q. Okay. And what did you need from Figure 4 to</p> <p>9 answer that question?</p> <p>10 MR. PADMANABHAN: Objection; Rule 611.</p> <p>11 A. So you want to know behind -- in my head what</p> <p>12 I was thinking?</p> <p>13 Q. (BY MR. PLAIL) Sure.</p> <p>14 A. I was thinking because usually that nowadays</p> <p>15 scalability means speed, and -- and that I was thinking</p> <p>16 maybe you were talking about -- at the time, client</p> <p>17 server was a popular model, so probably whether they</p> <p>18 used client server model or not. So that I tried to</p> <p>19 figure out from Figure 4.</p> <p>20 Q. Okay.</p> <p>21 A. But later, you showed me that somewhere it was</p> <p>22 written.</p> <p>23 Q. So in order to understand -- so just so I</p> <p>24 understand, in order for you to understand the scope of</p> <p>25 Claim 1, you were looking at Figure 4?</p>	<p style="text-align: right;">Page 99</p> <p>1 MR. PADMANABHAN: Objection; Rule 611,</p> <p>2 misstates the record.</p> <p>3 A. So say it one more time what I say.</p> <p>4 Q. (BY MR. PLAIL) So when I asked you is it your</p> <p>5 opinion that Claim 1 is limited to a server, you went to</p> <p>6 Figure 4, you reviewed Figure 4, and you answered the</p> <p>7 client needs to communicate with the server and there</p> <p>8 are multiple servers that are mentioned in the patent</p> <p>9 '217, so they call it a relational server where the</p> <p>10 submessages would be stored and then for each</p> <p>11 organization according to Figure 4?</p> <p>12 MR. PADMANABHAN: Objection; Rule 611.</p> <p>13 A. So what is the question you're asking me to</p> <p>14 say?</p> <p>15 Q. (BY MR. PLAIL) I'm asking when I -- my -- my</p> <p>16 question is: In order to determine whether Claim 1 was</p> <p>17 limited to a server, you needed to look to Figure 4?</p> <p>18 MR. PADMANABHAN: Objection; Rule 611.</p> <p>19 A. No. I look for -- Figure 4, due to the</p> <p>20 address, the scalability question.</p> <p>21 Q. (BY MR. PLAIL) I didn't ask you a question</p> <p>22 about scalability. So I'm asking you --</p> <p>23 A. Before --</p> <p>24 Q. I mean, I'm asking were you just wasting my</p> <p>25 time? Because I didn't -- in that instance, I didn't</p>
<p style="text-align: right;">Page 98</p> <p>1 MR. PADMANABHAN: Objection; 611 and 613.</p> <p>2 A. No. That's not the right way to say. I was</p> <p>3 looking for -- I was looking for -- to understand your</p> <p>4 question, the scalability question, that's why I was</p> <p>5 looking at Figure 4.</p> <p>6 Q. (BY MR. PLAIL) So you were specifically</p> <p>7 trying to answer my question about whether the device</p> <p>8 could run on a personal computer or a server, correct?</p> <p>9 A. No. I was looking for client server.</p> <p>10 Q. So you were looking for the client server?</p> <p>11 A. Right.</p> <p>12 Q. So when I was asking whether Claim 1 required</p> <p>13 a client server, you went to Figure 4 to get the answer?</p> <p>14 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>15 613.</p> <p>16 A. No. I was looking for Figure 4 to address</p> <p>17 your scalability question. That, I remember, yeah, why</p> <p>18 I were jumping to Figure 4.</p> <p>19 Q. (BY MR. PLAIL) So, specifically, the question</p> <p>20 I had asked was, I'm asking do you have an opinion that</p> <p>21 Claim 1 is limited to a server, and then you went to</p> <p>22 Figure 4 and testified that in the '217 patent they</p> <p>23 called a relational server where the submessages would</p> <p>24 be stored and then for each organization according to</p> <p>25 Figure 4?</p>	<p style="text-align: right;">Page 100</p> <p>1 ask you a question about scalability. I asked you</p> <p>2 whether Claim 1 was limited to a server, and you went to</p> <p>3 Figure 4.</p> <p>4 MR. PADMANABHAN: Objection; Rule 611.</p> <p>5 A. Before -- before that, you talked</p> <p>6 about scalability also.</p> <p>7 Q. (BY MR. PLAIL) But I didn't ask you a</p> <p>8 question about scalability.</p> <p>9 A. You asked some question --</p> <p>10 Q. A long time ago, sure. But I'm asking, why</p> <p>11 did you look to Figure 4 when I asked you that Claim 1</p> <p>12 is limited to a server?</p> <p>13 MR. PADMANABHAN: Objection; Rule 611.</p> <p>14 A. I looked for -- I think the scalability and I</p> <p>15 looked into Figure 4, and, also, I was looking for the</p> <p>16 client server on --</p> <p>17 Q. (BY MR. PLAIL) So you were trying to figure</p> <p>18 out whether Claim 1 used a server?</p> <p>19 MR. PADMANABHAN: Objection; Rule 611.</p> <p>20 A. No; that -- I don't think so. But at that</p> <p>21 point, you asked me something with the processor and</p> <p>22 processor is a part of the server or not.</p> <p>23 Q. (BY MR. PLAIL) I asked you whether a server</p> <p>24 is required under Claim 1.</p> <p>25 MR. PADMANABHAN: Objection; Rule 611.</p>

<p style="text-align: right;">Page 101</p> <p>1 A. But the reason is not that I jump into the</p> <p>2 Figure 4, that's why I'm saying no.</p> <p>3 Q. (BY MR. PLAIL) Then why did you go to</p> <p>4 Figure 4?</p> <p>5 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>6 403 -- 403 and 611.</p> <p>7 A. Because I -- before coming here, two, three</p> <p>8 days back, I read the -- I went through those diagrams</p> <p>9 carefully, and I saw that it talks about client server</p> <p>10 and then the server. So that's why I was looking</p> <p>11 for right there where server is.</p> <p>12 Q. (BY MR. PLAIL) Right. So when you were</p> <p>13 looking to figure out whether Claim 1 required a server,</p> <p>14 you went to Figure 4 to determine where the server was?</p> <p>15 MR. PADMANABHAN: Objection; Rule -- Rule</p> <p>16 611.</p> <p>17 A. No, I don't want to say -- say it that way.</p> <p>18 Q. (BY MR. PLAIL) You don't want to say it or --</p> <p>19 I mean, I'm asking the question.</p> <p>20 A. No, I saw -- I remember --</p> <p>21 MR. PADMANABHAN: Hang on.</p> <p>22 Objection; 611.</p> <p>23 But you can answer.</p> <p>24 A. For -- it started -- this question when you</p> <p>25 started to ask about scalability, at that point, I</p>	<p style="text-align: right;">Page 103</p> <p>1 paragraph 7. Do you see that?</p> <p>2 A. Uh-huh.</p> <p>3 Q. You say, "The '217 patent teaches why it is</p> <p>4 desirable to identify a second user that shares these</p> <p>5 associations with the first user, and the '217 patent</p> <p>6 teaches the math required in order for the system to</p> <p>7 identify the second user" [as read].</p> <p>8 A. Yes.</p> <p>9 Q. What is the math required in order for the</p> <p>10 system to identify the second user?</p> <p>11 A. Okay. So the second user in this case needs</p> <p>12 to be -- needs to be somehow related to the first user,</p> <p>13 cognate to the first user. And, then, also -- and also,</p> <p>14 we need to make sure that second user will have received</p> <p>15 the same electronic message that the first user already</p> <p>16 receive it, right? So these two conditions</p> <p>17 simultaneously satisfy.</p> <p>18 And then the question is you're asking me</p> <p>19 what math required to identify the second user, right?</p> <p>20 That's your question?</p> <p>21 Q. I'm asking, in paragraph 7, you say the '217</p> <p>22 patent teaches the math required in order for the system</p> <p>23 to identify the second user.</p> <p>24 A. Right.</p> <p>25 Q. What is the math required?</p>
<p style="text-align: right;">Page 102</p> <p>1 tried to think about this, and I eventually found the</p> <p>2 Figure 4, yeah.</p> <p>3 Q. (BY MR. PLAIL) And Figure 4 helped inform</p> <p>4 whether or not Claim 1 required a server?</p> <p>5 MR. PADMANABHAN: Objection; Rule 611.</p> <p>6 A. No.</p> <p>7 Q. (BY MR. PLAIL) No?</p> <p>8 A. No.</p> <p>9 Q. So why did you, on the record, go look at</p> <p>10 Figure 4 for about 10 minutes?</p> <p>11 MR. PADMANABHAN: Objection; Rule 611.</p> <p>12 A. 10 minutes?</p> <p>13 Q. (BY MR. PLAIL) [Nods head.]</p> <p>14 A. To answer your questions precisely. Under</p> <p>15 oath, I cannot say something vague.</p> <p>16 Q. Right. So when I asked whether Claim 1 was</p> <p>17 limited to a server, in order to answer my question</p> <p>18 precisely, you went to Figure 4 to look at the server?</p> <p>19 MR. PADMANABHAN: Objection; Rule 611.</p> <p>20 A. At that point, I'm not saying I went to 4 --</p> <p>21 for that reason, I went to Figure 4. I'm saying I went</p> <p>22 to Figure 4 for scalability and for other reasons.</p> <p>23 And thanks for asking.</p> <p>24 Q. (BY MR. PLAIL) Can you go to paragraph 7 of</p> <p>25 your declaration? Look at the last sentence of</p>	<p style="text-align: right;">Page 104</p> <p>1 A. Okay. So I don't know if I can say it. So</p> <p>2 here in the -- in -- if you see the Exhibit 1001,</p> <p>3 column 34, and between 5 and 10, there is an equation,</p> <p>4 that's a cognate users from sender to receiver, right --</p> <p>5 recipient that talks about individual importancy</p> <p>6 components. And so for cognate users, we tried to</p> <p>7 determine these values.</p> <p>8 So that's -- this value would be</p> <p>9 eventually used in the relevancy calculation. More</p> <p>10 specifically, it will be used in the local relevancy and</p> <p>11 also the -- and then the -- since it is using, the local</p> <p>12 relevancy will have impact on the global relevancy and</p> <p>13 so on.</p> <p>14 So that's why described them -- this math,</p> <p>15 how to calculate that cognate user score that will be</p> <p>16 added in the relevancy score calculation.</p> <p>17 Q. Okay. And so that's -- when you're referring</p> <p>18 to the math required in order for the system to identify</p> <p>19 the second user --</p> <p>20 A. Right.</p> <p>21 Q. -- you're referring to column 34, lines 5</p> <p>22 through 10 of the --</p> <p>23 A. Yeah. But in order to do that, you need to</p> <p>24 know what is IIC, that described previous equation, like</p> <p>25 say in -- in -- because that equation here, user IIC,</p>

<p>Page 105</p> <p>1 right?</p> <p>2 Q. I see. So actually, if you go to</p> <p>3 paragraph 128 of your declaration, and I think --</p> <p>4 A. Yeah, in the declaration, the math also, yes.</p> <p>5 Q. Actually...</p> <p>6 MR. PADMANABHAN: You said 128?</p> <p>7 MR. PLAIL: I may have pointed to the</p> <p>8 wrong one.</p> <p>9 Q. (BY MR. PLAIL) Paragraph 90.</p> <p>10 A. Yeah.</p> <p>11 Q. So this is where you start talking about the</p> <p>12 global importance and the global relevance. So if you</p> <p>13 look at the bottom of this page, you say, "The global</p> <p>14 importance averages IIC's across the system, and the</p> <p>15 global relevance averages IRCs by global importance" [as</p> <p>16 read].</p> <p>17 Do you see that?</p> <p>18 A. Uh-huh.</p> <p>19 Q. So is that what you're referring to by the IIC</p> <p>20 and IRC?</p> <p>21 A. Yeah, IIC is -- yes. IIC -- where's the --</p> <p>22 here is the -- you can see where IIC's defined</p> <p>23 in equation 4 on page 37.</p> <p>24 Q. Okay. And so the global importance is defined</p> <p>25 by the average IICs across the system, which itself is</p>	<p>Page 107</p> <p>1 relevance and that is linked to equation 4 -- sorry, no.</p> <p>2 We talked about the global relevance and that is linked</p> <p>3 to equation 7, you said?</p> <p>4 A. Now which one? Global?</p> <p>5 Q. Strike that.</p> <p>6 The global importance, that's defined by</p> <p>7 equation --</p> <p>8 A. 7, yeah.</p> <p>9 Q. Sorry, the global importance is defined by</p> <p>10 equation 7?</p> <p>11 A. Yeah.</p> <p>12 Q. Okay. And what about the global relevance?</p> <p>13 A. Okay, so that is a step. So first they</p> <p>14 calculate the importancy, for all this importancy, local</p> <p>15 importancy, global importancy, and cognitive importancy.</p> <p>16 And then from there, they derive the relevancy, local</p> <p>17 relevancy, global relevancy. If you see the Figure 22</p> <p>18 in this patent, they describe it in details how this</p> <p>19 process is done.</p> <p>20 Q. So Figure 22 details the process of how --</p> <p>21 A. The whole calculation is done, the relevancy.</p> <p>22 Yeah, Figure 22 and 21, when decided how the calculation</p> <p>23 is done. And Figure 22 shows how the update is taking</p> <p>24 place. So can you see here -- yeah.</p> <p>25 Q. So these two together describe how the global</p>
<p>Page 106</p> <p>1 defined in equation 4?</p> <p>2 MR. PADMANABHAN: Sorry, where are you</p> <p>3 reading that?</p> <p>4 A. Right. So it is -- and then I think we say in</p> <p>5 equation 7 the global -- percent of global -- global</p> <p>6 importancy, we define it in equation 7.</p> <p>7 Q. (BY MR. PLAIL) Okay. So that's the global</p> <p>8 relevancy is equation 7?</p> <p>9 A. Right.</p> <p>10 And then equation 8, we define the</p> <p>11 cognate -- cognate importancy from the sender to the</p> <p>12 receiver.</p> <p>13 Q. I see. So --</p> <p>14 A. And there we use the IIC. And IIC was defined</p> <p>15 in equation 4. That's what I'm trying to say.</p> <p>16 Q. Sorry, do you mean equation 8 or equation 9?</p> <p>17 A. Equation -- what is the equation?</p> <p>18 Q. Are you referring to the equation on page 40?</p> <p>19 A. Yeah; equation 8 for the cognate, and equation</p> <p>20 9 takes into consideration the local relevancy.</p> <p>21 Q. I see.</p> <p>22 A. That takes into consideration the cognate,</p> <p>23 plus global, plus the IIC.</p> <p>24 Q. I see.</p> <p>25 And we -- we talked about the global</p>	<p>Page 108</p> <p>1 relevance score --</p> <p>2 A. All the relevancy score is calculated and how</p> <p>3 they're updated, yeah.</p> <p>4 Q. Okay.</p> <p>5 A. So you can see on the top, it talks about</p> <p>6 importancy, and bottom talks about the relevancy in</p> <p>7 Figure 22.</p> <p>8 Q. I see.</p> <p>9 A. And Figure 21, the corresponding text explains</p> <p>10 each steps in details how the calculation is done.</p> <p>11 Q. Okay. So let's look at Figure 22 for a</p> <p>12 second. It seems like the local importance is a pretty</p> <p>13 important point in the calculation, because everything</p> <p>14 kind of flows into it over here on the right of the</p> <p>15 figure. Is that fair?</p> <p>16 MR. PADMANABHAN: Objection; Rule 611.</p> <p>17 A. The local importancy, yeah. The concept is</p> <p>18 global importancy. But, again, the feedback will</p> <p>19 loop -- is involved here, so...</p> <p>20 Q. (BY MR. PLAIL) Right. So there's a feedback</p> <p>21 loop, but -- and all of these boxes at the top kind of</p> <p>22 feed into local importancy, which then feeds into</p> <p>23 combination importance, right?</p> <p>24 MR. PADMANABHAN: Objection; Rule 611.</p> <p>25 A. Oh, okay. Okay, so you were saying local --</p>

<p>Page 109</p> <p>1 I'm not saying local -- I'm saying the -- how the 2 calculation is done here. 3 Q. (BY MR. PLAIL) Okay. So 22 is how the 4 calculation's done? 5 A. Right; but I'm not saying which one is 6 important. That, I'm not -- I'm not making any 7 statement here. For which component is important, I'm 8 not making any statement. 9 Q. Which ones are important? 10 A. No, that -- as I told you, that -- I don't 11 know, and it depends on the empirical study. Only the 12 patent owner can tell. 13 Q. So to determine which one is important, you 14 would do an empirical study? 15 MR. PADMANABHAN: Objection; Rule 611 and 16 613. 17 A. It is beyond the scope of my direction, and -- 18 but I think -- 19 Q. (BY MR. PLAIL) I mean, you said it depends on 20 an empirical study. So to determine which one of these 21 is important, you would do an empirical study? 22 MR. PADMANABHAN: Objection; Rule 611 and 23 613. 24 A. Okay, so finally at the end, the ranking 25 process will probably utilize the local relevancy of</p>	<p>Page 110</p> <p>1 transmitting of the e-mail object from S to R. That's 2 where the ranking process will be -- will utilize the 3 final score. 4 So in that final scoring process, some 5 components may not contribute that much, or may not 6 influence that much. That's possible. 7 And it may vary from person to person. 8 For user, some component may dominate, because you may 9 have a lot of frames for cognate users. And for some, 10 it may not -- certain components may not dominate that 11 much. Other components may be the dominating factor. 12 Q. (BY MR. PLAIL) And so the global importance 13 in Figure 7 that we were discussing earlier is reflected 14 here in Figure 22? 15 MR. PADMANABHAN: Figure -- objection; 16 611. 17 A. Figure 7? 18 Q. (BY MR. PLAIL) I said -- equation 7. 19 So the global importance in equation 7 20 that we were discussing earlier is reflected here in 21 Figure 22? 22 MR. PADMANABHAN: Objection; Rule 611. 23 A. No. Figure 22 shows in which fashion the 24 calculation will be carried out. And also, it shows how 25 the update will be taking place. Because when you get</p>
<p>1 the feedback, user actions will be taken into 2 consideration. Some cases, the update of all those 3 values will be updated periodically and then after 4 30 days or something else. Some cases, the update will 5 be taking place immediately in real time. So that they 6 tried to emphasize here. 7 But it doesn't tell you the equation or 8 how the global importance or local importance will be 9 calculated. That -- that -- this figure doesn't talk 10 about that. 11 Q. (BY MR. PLAIL) Okay. So a person of skill 12 would look to Figure 22 to figure out the flow of the 13 calculations and then would look to the equations in 14 order to determine the precise calculations. Is that 15 fair? 16 MR. PADMANABHAN: Objection; Rule 611. 17 A. But ordinary skill set person would take a 18 look at Figure 22 and then...? 19 Q. (BY MR. PLAIL) And then look at the equations 20 and the specification to determine the precise 21 calculations? 22 A. Yes. But whether he or she will be able to 23 solve it, that, I don't know. I don't think so, but... 24 Q. And you said in order to determine which ones 25 are the most important, you would need to do an</p>	<p>Page 111</p> <p>1 empirical study. Which -- did you do an empirical study 2 in the process of preparing your declaration? 3 MR. PADMANABHAN: Objection; Rule 613 and 4 611. 5 A. I -- I don't think I answered the question in 6 the declaration, but no. 7 Q. (BY MR. PLAIL) Okay. And so you didn't use 8 an empirical study to inform your interpretation of the 9 claims? 10 MR. PADMANABHAN: Objection; Rule 611 and 11 613. 12 A. Say it... 13 Q. (BY MR. PLAIL) You didn't use an empirical 14 study to inform your interpretation of the claims? 15 MR. PADMANABHAN: Objection; Rule 611 and 16 613. 17 A. So I did not study that -- 18 Q. (BY MR. PLAIL) You did not use an empirical 19 study to inform your interpretation of the claims? 20 MR. PADMANABHAN: Objection; Rule 611 and 21 613. 22 A. I -- 23 Q. (BY MR. PLAIL) So right? 24 A. No. Let me explain here. 25 So here, we're talking about the system.</p>
<p>Page 112</p> <p>1 empirical study. Which -- did you do an empirical study 2 in the process of preparing your declaration? 3 MR. PADMANABHAN: Objection; Rule 613 and 4 611. 5 A. I -- I don't think I answered the question in 6 the declaration, but no. 7 Q. (BY MR. PLAIL) Okay. And so you didn't use 8 an empirical study to inform your interpretation of the 9 claims? 10 MR. PADMANABHAN: Objection; Rule 611 and 11 613. 12 A. Say it... 13 Q. (BY MR. PLAIL) You didn't use an empirical 14 study to inform your interpretation of the claims? 15 MR. PADMANABHAN: Objection; Rule 611 and 16 613. 17 A. So I did not study that -- 18 Q. (BY MR. PLAIL) You did not use an empirical 19 study to inform your interpretation of the claims? 20 MR. PADMANABHAN: Objection; Rule 611 and 21 613. 22 A. I -- 23 Q. (BY MR. PLAIL) So right? 24 A. No. Let me explain here. 25 So here, we're talking about the system.</p>	<p>Page 112</p> <p>1 empirical study. Which -- did you do an empirical study 2 in the process of preparing your declaration? 3 MR. PADMANABHAN: Objection; Rule 613 and 4 611. 5 A. I -- I don't think I answered the question in 6 the declaration, but no. 7 Q. (BY MR. PLAIL) Okay. And so you didn't use 8 an empirical study to inform your interpretation of the 9 claims? 10 MR. PADMANABHAN: Objection; Rule 611 and 11 613. 12 A. Say it... 13 Q. (BY MR. PLAIL) You didn't use an empirical 14 study to inform your interpretation of the claims? 15 MR. PADMANABHAN: Objection; Rule 611 and 16 613. 17 A. So I did not study that -- 18 Q. (BY MR. PLAIL) You did not use an empirical 19 study to inform your interpretation of the claims? 20 MR. PADMANABHAN: Objection; Rule 611 and 21 613. 22 A. I -- 23 Q. (BY MR. PLAIL) So right? 24 A. No. Let me explain here. 25 So here, we're talking about the system.</p>

<p style="text-align: right;">Page 113</p> <p>1 We're not talking about any -- in the patent, usually we 2 don't disclose the numbers. Apart from -- when it comes 3 to the empirical study, it means you have to the report 4 the components of the algorithm. So in this case, it 5 works -- this person says it works very well. This 6 person cases it may fail. So in the patent, usually the 7 patent owner doesn't -- in general, doesn't disclose 8 those numbers.</p> <p>9 So I think the patent owner, what he 10 did -- he did reasonable work here, so he doesn't need 11 to mention those empirical study here.</p> <p>12 Q. You didn't use an empirical study? 13 A. No, but I -- 14 Q. That's all I'm asking. You didn't use an 15 empirical study. 16 A. Right. For my case, I don't need an empirical 17 study at all -- 18 Q. Okay. 19 A. -- because I just express my opinion. 20 Q. Okay. And so you did not use an empirical 21 study in the process of forming your opinions? 22 A. Right. 23 Q. Okay. 24 A. And that's the standard practice, I think. 25 Q. Okay. So I think we are --</p>	<p style="text-align: right;">Page 115</p> <p>1 A. Uh-huh. 2 Q. So I'm going to be asking some questions about 3 this limitation. So when I refer to the second 4 relevance measurement module limitation, that's what 5 I'll be referring to, okay? 6 A. Uh-huh. 7 Q. Yes? 8 A. Yes. 9 Q. Okay. Can you turn to column 8, lines -- 10 A. Same patent? 11 Q. Same patent. 23 through 25. 12 A. 23 through 25... 13 (Witness reviewed document.) 14 Q. Do you see how it is discussing mail data 15 there? 16 A. Figure 6, let me check. 17 Q. Sorry, I was asking in the passage of the 18 patent. Do you see how it's discussing the mail data? 19 A. Okay. 20 (Sotto voce conversation.) 21 THE REPORTER: I'm sorry, can you either 22 speak up or read to yourself? 23 THE WITNESS: No, no, no, I'm reading by 24 myself. 25 (Witness reviewed document.)</p>
<p style="text-align: right;">Page 114</p> <p>1 A. Because -- 2 Q. I mean, there's no question pending. 3 MR. PLAIL: I think probably now is a good 4 time for lunch. 5 THE WITNESS: Sure. 6 (Break taken from 12:05 p.m. to 7 12:40 p.m.) 8 Q. (BY MR. PLAIL) Can you turn back to the 9 claim? 10 A. '217 claim? 11 Q. Yep. Page 49. 12 Do you see starting around line 41, the 13 claim starts discussing a second relevance measurement 14 module coupled to the monitoring module and configure 2? 15 A. Line 41, column 47? 16 Q. Yes. 17 A. Uh-huh. 18 Q. Do you see that? 19 A. Yeah. 20 Q. All right. So I'm going to ask some questions 21 about this particular limitation. And so -- just so 22 we're on the same page, the second relevance measurement 23 module coupled to the monitoring module in Figure 2 has 24 two subsections under it. One is identifying and the 25 other is determining, right?</p>	<p style="text-align: right;">Page 116</p> <p>1 A. So you're saying 21 to... 2 Q. 23 to 25 says, "Turning now more specifically 3 to Figure 6, mail data 80 represents properties of each 4 electronic mail" [as read]. 5 (Witness reviewed document.) 6 A. Yeah. 7 Q. And it refers to the current message, as well 8 as both history and future submessages collaborative. 9 Do you see that? 10 A. Uh-huh. 11 Q. Okay. 12 MR. PADMANABHAN: You have to say "yes." 13 A. Yes. 14 Q. (BY MR. PLAIL) Can you go to column 43, 15 lines 30 through 37? 16 MR. PADMANABHAN: Lines 30 to what? 17 MR. PLAIL: 37. 18 A. 30 to 37, 43 column, lines 30 to 37, right? 19 Q. (BY MR. PLAIL) Yes. 20 A. 37, okay. 21 Q. I'm going to read that into the record, but 22 feel free to read on your own. 23 A. Sure. 24 Q. "In regard to how such similarity or 25 identification of the cognate group is determined, one</p>

<p>Page 117</p> <p>1 or more of the following approaches may be used: Role</p> <p>2 or group based, collaborative filtering, fingerprinting,</p> <p>3 cluster models, search-based methods, frequency</p> <p>4 analysis, and importance value correlation. Each of</p> <p>5 these different approaches which may be used singly or</p> <p>6 in any combination will now be described in turn" [as</p> <p>7 read].</p> <p>8 It says that there? Do you see it again</p> <p>9 is referring to collaborative filtering?</p> <p>10 A. Uh-huh.</p> <p>11 Q. So we discussed collaborative filtering</p> <p>12 earlier, right?</p> <p>13 A. Right.</p> <p>14 Q. And so you would agree that collaborative</p> <p>15 filtering in -- in this context relies on mail actions</p> <p>16 and mail data?</p> <p>17 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>18 401 to 403.</p> <p>19 A. So your -- what is the question again?</p> <p>20 Q. (BY MR. PLAIL) Do you see that collaborative</p> <p>21 filtering in this context relates to mail actions and</p> <p>22 mail data?</p> <p>23 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>24 401 to 403.</p> <p>25 A. Where do you find mail data? Is that where</p>	<p>Page 119</p> <p>1 metadata -- present properties of each electronic --</p> <p>2 property means what? Property means metadata results.</p> <p>3 Q. Okay. So then you're saying the metadata and</p> <p>4 the properties are not part of the mail data?</p> <p>5 A. No, the mail data has the content.</p> <p>6 Q. Okay.</p> <p>7 A. And then it has the content of the e-mail</p> <p>8 message, the text. And then you have the -- you have</p> <p>9 the user actions, and that can be a part of the property</p> <p>10 also of the message, whether you reply, whether you --</p> <p>11 Q. Where does it say that the mail data does not</p> <p>12 include the metadata?</p> <p>13 A. It says the mail data presents properties.</p> <p>14 The way the definition mail data 80 presents properties</p> <p>15 of the electronic message, including --</p> <p>16 Q. Okay. So then to go back to my question, the</p> <p>17 mail data 80 is used with collaborative filtering,</p> <p>18 correct?</p> <p>19 MR. PADMANABHAN: Objection; Rule 611.</p> <p>20 A. So you mean the mail data -- the content of</p> <p>21 the mail data is your question?</p> <p>22 Q. (BY MR. PLAIL) I'm -- looking at this portion</p> <p>23 of the patent, it says, "Mail data 80 represents</p> <p>24 properties of each electronic messages, including" -- it</p> <p>25 goes on -- "future submessages collaborative" [as read].</p>
<p>Page 118</p> <p>1 the collaborative filtering will be used?</p> <p>2 Q. (BY MR. PLAIL) In the first passage we read,</p> <p>3 it says, "Mail data 80 represents properties of each</p> <p>4 electronic mail, including, dot, dot, dot, both history</p> <p>5 and future submessages, collaborative" [as read].</p> <p>6 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>7 613.</p> <p>8 A. Can I see the Figure 6?</p> <p>9 Q. (BY MR. PLAIL) Sure.</p> <p>10 (Witness reviewed document.)</p> <p>11 Q. Do you understand that collaborative filtering</p> <p>12 uses mail data 80?</p> <p>13 MR. PADMANABHAN: Objection; Rule 611.</p> <p>14 A. Yes. So it doesn't mean that they used the</p> <p>15 mail data. They used properties of the mail data and</p> <p>16 the message. And properties can be very distinct. It</p> <p>17 can be the feedback of user actions and so on. And then</p> <p>18 they talk about the messages, history of the message,</p> <p>19 and the -- the collaborative messaging results.</p> <p>20 So the properties -- they focus on the</p> <p>21 properties of the message, and not the mail data set.</p> <p>22 And the properties --</p> <p>23 Q. (BY MR. PLAIL) But mail data, you're focusing</p> <p>24 on the content, not the metadata?</p> <p>25 A. No. The way I read it, it says it presents</p>	<p>Page 120</p> <p>1 I'm asking, is the mail data 80 used with</p> <p>2 collaborative filtering?</p> <p>3 MR. PADMANABHAN: Objection; misstate --</p> <p>4 Rule 611.</p> <p>5 A. So, in this case, future submessages</p> <p>6 collaborative means there might be some messages that</p> <p>7 are relevant to the collaborative user, so that would be</p> <p>8 the collaborative messages that they mentioned.</p> <p>9 Q. (BY MR. PLAIL) Okay. So you're saying that</p> <p>10 this is not using mail data 80?</p> <p>11 MR. PADMANABHAN: Objection; 401 to 403,</p> <p>12 Rule 611.</p> <p>13 A. So what is the question? Which one is not</p> <p>14 using --</p> <p>15 Q. (BY MR. PLAIL) I'm asking is collaborative</p> <p>16 filtering using mail data or is it not using mail data?</p> <p>17 It's a yes-or-no question.</p> <p>18 MR. PADMANABHAN: Objection; Rule 611, 401</p> <p>19 to 403.</p> <p>20 A. What is the definition of mail data?</p> <p>21 Q. (BY MR. PLAIL) It's right there [indicating].</p> <p>22 (Witness reviewed document.)</p> <p>23 Q. I mean, if you look at columns 8, 23 through</p> <p>24 25, I don't think Figure 6 defines what mail data is,</p> <p>25 but I originally pointed you to column 8, lines 23</p>

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<p>1 through 25, which says mail data represents, and it goes 2 on to describe it. 3 A. Yeah. 4 MR. PADMANABHAN: Objection; Rule 611 and 5 also Rule 613 and 401, 403. 6 A. Can you read it, this part? What does it say, 7 the last -- 8 Q. (BY MR. PLAIL) You're referring to box 80? 9 A. Yes. 10 Q. On the right side, it says, "Collaborative." 11 And then under that, it says, "History and 12 future submessages." 13 And then under that, it says, "Sender, 14 recipients, date sent, retention date, job code, 15 attachments." 16 A. Attachment. 17 Q. So mail data includes those metadata 18 categories, correct? 19 A. Okay. So think about this. This is a user, 20 and there's another set of collaborative users. And 21 then this user has submessages, and this collaborative 22 user has submessages. And from there, they're saying -- 23 so that -- and then this message has collaborative 24 filtering associated users, their messages has some 25 metadata, right, all these properties, the message</p>	<p>1 401 to 1403. 2 A. It's the same. Sorry, but -- 3 Q. (BY MR. PLAIL) Let's -- let's focus -- so you 4 know how earlier we were talking about the second 5 relevance measurement module? 6 A. Right. 7 Q. And earlier, we were talking about the 8 identifying limitation within that, right? 9 So let's just focus on the identifying 10 limitation. The two portions of the patent we just went 11 over, is that discussing the identifying limitation? 12 A. Which two patent? The -- 13 Q. The two we just went over. So column 8, lines 14 23 through 25, and column 43, 30 through 37. We just 15 went over both of those. Do those refer to the 16 identifying limitation? 17 A. Both of them -- so this is patent '217, right? 18 Q. Yes. 19 A. The address -- yeah, identifying relationship, 20 yeah. 21 Q. So these are relevant to the identifying 22 limitation? 23 MR. PADMANABHAN: Objection -- 24 (Cross talk.) 25 THE REPORTER: Hold on. Let him -- let --</p>
Page 122	Page 124
<p>1 content or the part you just read. So that will be 2 mentioned here. 3 Q. Okay. So mail data 80 is used with 4 collaborative filtering? 5 MR. PADMANABHAN: Objection; Rule 611, 6 613, 401, 403. 7 A. Okay. So I just want to emphasize that 8 mail -- collaborative filtering doesn't rely on the 9 content. It relies on the -- it relies on the user 10 actions or those type of properties. So that -- that 11 type of metadata may be used. So here, the metadata 12 they're mentioning is a little bit broad. 13 Q. (BY MR. PLAIL) Okay. But the metadata can be 14 used with collaborative filtering? 15 MR. PADMANABHAN: Objection; Rule 401 to 16 403, 611 and 613. 17 A. Some part of metadata, yeah. 18 Q. (BY MR. PLAIL) Okay. And so the 19 collaborative filtering referred to in these two 20 portions of the patent, is that an example of the -- 21 A. Sorry, can you say one? Collaborative... 22 Q. The collaborative filtering referred to in 23 these two portions of the patent, is that an example of 24 how the second relevance measurement module works? 25 MR. PADMANABHAN: Objection; Rule 611 and</p>	<p>1 MR. PADMANABHAN: Objection; Rule 611, 2 613, and 401 to 403. 3 A. Okay. What is identifying relationship again? 4 Q. (BY MR. PLAIL) Go to Claim 1. It's the 5 identifying limitation. 6 A. Identified at least one of the -- okay. Yeah, 7 both simultaneously both conditions, right? Again, the 8 electronic content to the user, right? 9 Okay. So 43 and -- under column 43, 10 patent '217, 30 to 37, it talks about collaborative 11 filtering in general, how we can implement. There are 12 various ways you can implement, clustering technique, 13 and other technique. And they describe some approaches 14 very nicely. 15 But we have to make-- they also talk 16 about -- when they talk about the -- the cognate -- the 17 condition is this cognate users condition used to 18 satisfy or collaborative filtering condition, as well as 19 the -- the -- this additional users or second users, 20 they need to be recipient of the same electronic message 21 content, where the -- there's two conditions 22 simultaneously satisfy. 23 Q. Okay. So you're saying -- 24 A. In this patent. 25 Q. You're saying this portion, 43, 30 through 37,</p>

<p style="text-align: right;">Page 125</p> <p>1 doesn't disclose both of those ideas?</p> <p>2 A. Yeah, but, however, there is some place where</p> <p>3 the --</p> <p>4 Q. I'm not -- I'm not -- that's not what I'm</p> <p>5 trying to -- I'm just asking --</p> <p>6 A. You have to discard the collaborative</p> <p>7 filtering, how you can do it.</p> <p>8 Q. Right.</p> <p>9 A. That implementation, there are multiple</p> <p>10 options, and they combine many options.</p> <p>11 And then later, they also showed that when</p> <p>12 you identify the -- the set of users, second users,</p> <p>13 there, they use collaborative filtering or -- in order</p> <p>14 to find the cognate user, as well as that second user</p> <p>15 needs to be the recipient of the same electronic</p> <p>16 message.</p> <p>17 Q. Got it. So later --</p> <p>18 A. The --</p> <p>19 (Cross talk.)</p> <p>20 Q. Let me ask my questions.</p> <p>21 A. All right. There's a --</p> <p>22 (Cross talk.)</p> <p>23 Q. Let me ask my questions.</p> <p>24 A. Sure. Sorry.</p> <p>25 Q. Later in the patent, outside of column 43,</p>	<p style="text-align: right;">Page 127</p> <p>1 A. Sure.</p> <p>2 (Witness reviewed document.)</p> <p>3 A. 50 to --</p> <p>4 Q. 59.</p> <p>5 A. Okay.</p> <p>6 (Witness reviewed document.)</p> <p>7 MR. PADMANABHAN: So are you starting with</p> <p>8 "and yet"?</p> <p>9 MR. PLAIL: Yes.</p> <p>10 MR. PADMANABHAN: And where are you</p> <p>11 ending? With "department"?</p> <p>12 MR. PLAIL: Yes.</p> <p>13 MR. PADMANABHAN: Okay.</p> <p>14 (Witness reviewed document.)</p> <p>15 Q. (BY MR. PLAIL) So, Dr. Khan, my question is:</p> <p>16 Is this an example of identifying?</p> <p>17 A. So here, it talks about the relevancy, how to</p> <p>18 calculate the relevancy, right?</p> <p>19 Q. So it's not an example of identifying?</p> <p>20 A. What is identifying? Identifying is the</p> <p>21 cognate to the second user and -- and then cognate to</p> <p>22 the first user, and then relevant -- and then the</p> <p>23 recipient of the same message, that's identifying?</p> <p>24 Yeah. Okay.</p> <p>25 Q. So this is not an example of identifying?</p>
<p style="text-align: right;">Page 126</p> <p>1 line 30 through 37, they may describe what you're</p> <p>2 referring to. But this portion, 43, lines 30 through</p> <p>3 37, does not disclose the full identifying limitation?</p> <p>4 A. They focus on collaborative filtering on the</p> <p>5 implementation.</p> <p>6 Q. Okay. Is the same true for column 8, lines 23</p> <p>7 through 25?</p> <p>8 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>9 401 to 403.</p> <p>10 A. My understanding is column 8 under -- from</p> <p>11 row 21 to 25 or -- is -- the focus is different. They</p> <p>12 don't talk about collaborative filtering, how does it</p> <p>13 work here, no.</p> <p>14 Q. (BY MR. PLAIL) Okay. So this --</p> <p>15 A. They just talk about collaborative messages or</p> <p>16 something.</p> <p>17 Q. So this portion also does not disclose the</p> <p>18 identifying limitation?</p> <p>19 MR. PADMANABHAN: Objection; Rule 611.</p> <p>20 A. Yes.</p> <p>21 Q. (BY MR. PLAIL) Okay. Let's go to column 12,</p> <p>22 lines 50 through 59.</p> <p>23 A. Line what? 50, column 12?</p> <p>24 Q. Yeah, lines 50 through 59. I guess the</p> <p>25 sentence starts at 48. Can you read that?</p>	<p style="text-align: right;">Page 128</p> <p>1 MR. PADMANABHAN: Objection; Rule 611.</p> <p>2 (Witness reviewed document.)</p> <p>3 A. If you don't mind, can I take time with it?</p> <p>4 MR. PADMANABHAN: Yeah.</p> <p>5 (Witness reviewed document.)</p> <p>6 A. So I think this paragraph talks about the</p> <p>7 content relevancy.</p> <p>8 Q. (BY MR. PLAIL) Right. So this is not an</p> <p>9 example of identifying?</p> <p>10 A. The n user, yeah.</p> <p>11 Q. So this is not an example of identifying?</p> <p>12 A. So that's not the focus here, yeah.</p> <p>13 Q. All right. Can you please go to column 14,</p> <p>14 lines 45 through 55?</p> <p>15 A. Column 14, line 45?</p> <p>16 Q. Yes. So 355.</p> <p>17 MR. PADMANABHAN: When you say that, are</p> <p>18 you starting at "as described" and finishing at "ongoing</p> <p>19 basis"?</p> <p>20 MR. PLAIL: I'm starting as "one</p> <p>21 approach."</p> <p>22 MR. PADMANABHAN: Oh, "one approach,"</p> <p>23 okay.</p> <p>24 MR. PLAIL: And then finishing at -- we'll</p> <p>25 go, I guess, to 53, "form processing."</p>

<p style="text-align: right;">Page 129</p> <p>1 MR. PADMANABHAN: Oh, to "form 2 processing." 3 Q. (BY MR. PLAIL) And I'll have a different 4 question about the rest of that paragraph. 5 A. So what is your question here? 6 Q. Is this an example of identifying? 7 (Witness reviewed document.) 8 A. So this -- your question is this section 9 addressed -- address what? Identifying? 10 Q. Is column 14, lines 45 through 53, an example 11 of identifying? 12 A. Yeah; this is one way you can do it, yes. 13 Q. Okay. And in this example, you can use a tree 14 structure to identify? 15 A. Yes; some sort of role base, yeah. 16 Q. And so using a tree structure would satisfy 17 both parts of the identifying limitation? 18 A. You said tree structure would satisfy? 19 Q. Both parts of the identifying limitation? 20 A. No. It satisfy only the collaborative by 21 cognate user part. So -- but it doesn't satisfy whether 22 the person will receive the same electronic message or 23 not. 24 Q. I see. So column 14, lines 45 through 53, 25 does not disclose the entire identifying limitation?</p>	<p style="text-align: right;">Page 131</p> <p>1 define it in the patent? 2 Q. The identifying limitation we've been 3 discussing. 4 A. Before, right? Oh, okay, now I do recall 5 that. 6 (Witness reviewed document.) 7 A. No, it doesn't consider the -- that -- it 8 doesn't address that issue. 9 Q. So column 14, lines 53 through 58, is not an 10 example of the entire identifying limitation, correct? 11 A. Yeah; identifying cognate users and the same 12 electronic message, right? 13 Q. So column 14, lines 53 through 58, is not an 14 example of the entire identifying limitation, correct? 15 A. So identifying means that, right, in this? 16 Q. In the claim. 17 A. Okay. 18 All right, yeah. 19 Q. So column 14, lines 53 through 58, is not an 20 example of the entire identifying limitation, correct? 21 A. Correct. 22 Q. I'm going to mark this as the next exhibit. 23 THE REPORTER: Is it 8 or... 24 MR. PLAIL: 8. 25 THE REPORTER: Okay.</p>
<p style="text-align: right;">Page 130</p> <p>1 A. Somewhere they mention both. 2 Q. That's not my question. My question is: 3 Column 14, lines 45 through 53, is that an example of 4 the entire identifying limitation? 5 A. It describes how the collaborative filtering 6 of cognate users can be found through the tree 7 structure. 8 Q. But it does not describe the recipient part, 9 does it? 10 A. Right. Yeah, the second condition -- 11 Q. So column 14, lines 45 through 53, is not an 12 example of the entire identifying limitation, correct? 13 A. Correct. 14 Q. Can you look at the next portion of that 15 paragraph? It says, "Further, it is noted," and then 16 through the end. So that would be column 14, lines 53 17 through 58. 18 (Witness reviewed document.) 19 A. Yeah. 20 Q. Is column 14, lines 53 through 58, an example 21 of the entire identifying limitation? 22 A. Say one more time. 23 Q. Is column 14, lines 53 through 58, an example 24 of the entire identifying limitation? 25 A. What is identifying relationship, the one that</p>	<p style="text-align: right;">Page 132</p> <p>1 (Exhibit Number 8 was marked.) 2 Q. (BY MR. PLAIL) Do you recognize Exhibit 8? 3 A. So it's [unintelligible]? 4 THE REPORTER: I'm sorry? 5 A. 1813, right? No. What is this? Exhibit 8? 6 Q. (BY MR. PLAIL) Exhibit 8. 7 A. Okay. 8 Q. Do you recognize Exhibit 8? 9 A. I recognize this. 10 Q. This is one of your old papers, right? 11 A. Yeah. 12 Q. What is the title of the paper? 13 A. "Emergency-driven Assured Information Sharing 14 in Secure Online Social Networks: A Position Paper." 15 Q. And this paper is from roughly 2016? 16 A. Yeah, that, I saw. It was published in some 17 workshop. 18 Q. Blast from the past? 19 A. Hmm? 20 Q. Blast from the past, right? 21 A. [Nods head.] 22 Q. So if you look in the introduction, you say -- 23 you say there that, "Social media has demonstrated 24 exponential growth, making it the most popular activity 25 on the worldwide web" [as read].</p>

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<p>1 A. What did I say? In the introduction?</p> <p>2 Q. In the introduction.</p> <p>3 A. Which section? In the beginning or --</p> <p>4 Q. Yeah, in the first paragraph.</p> <p>5 A. First paragraph?</p> <p>6 Q. Uh-huh.</p> <p>7 (Witness reviewed document.)</p> <p>8 A. Yeah.</p> <p>9 (Sotto voce conversation.)</p> <p>10 A. Uh-huh.</p> <p>11 Q. And then you go on to say, "As early as 2010,</p> <p>12 Twitter has recorded a 1,500 percent increase in the</p> <p>13 number of registered users and over 70,000 applications</p> <p>14 have been developed, according to the company" [as</p> <p>15 read].</p> <p>16 Do you see that?</p> <p>17 A. Yeah.</p> <p>18 Q. Do you agree with that statement?</p> <p>19 A. I don't -- but I -- yeah, I'm one of the</p> <p>20 author, but I'm not -- yeah.</p> <p>21 Q. But you agree with that statement?</p> <p>22 A. Okay. Yeah, I agree.</p> <p>23 Q. So then Twitter had recorded a growth of</p> <p>24 1,500 percent as early as 2010. Is that right?</p> <p>25 A. Twitter has a growth of what?</p>	<p>1 A. So social media was -- has become very popular</p> <p>2 after 2006. And now it's crazy, you have billions of</p> <p>3 users for Facebook. And I think for the X or the</p> <p>4 Twitter, that many, many users, even our President, uses</p> <p>5 Twitter, right? Many countries' president the number</p> <p>6 one person use social media, especially the Twitter.</p> <p>7 So -- but therefore -- in the Twitter</p> <p>8 case -- the Facebook case, it focused primarily on the</p> <p>9 social media. And in case of Twitter, that would be</p> <p>10 streaming impression that are continuously producing,</p> <p>11 and you do trend analysis, those type of things. They,</p> <p>12 underneath, utilize different technology, like a strong</p> <p>13 or a spark streaming framework to handle it.</p> <p>14 Q. (BY MR. PLAIL) All right. So that's one of</p> <p>15 the reasons that Twitter has been successful?</p> <p>16 MR. PADMANABHAN: Objection 601, 602, and</p> <p>17 613.</p> <p>18 A. Okay, so the objective here is different. If</p> <p>19 you are asking me with respect to patent '271, the</p> <p>20 e-mail messaging system. The e-mail messaging system</p> <p>21 deals with the --</p> <p>22 Q. (BY MR. PLAIL) I'm asking you -- I can ask</p> <p>23 you whatever I want.</p> <p>24 A. Okay. So --</p> <p>25 Q. And my question is: You have this paper here</p>
Page 134	Page 136
<p>1 Q. 1,500 percent.</p> <p>2 A. Right. According to this writing, yeah.</p> <p>3 Q. It also says that, "From 500,000 messages per</p> <p>4 quarter in 2007, the company has grown to 4 billion</p> <p>5 messages per quarter in 2010, and many more billions in</p> <p>6 2014" [as read].</p> <p>7 Do you see that?</p> <p>8 A. Uh-huh, yeah.</p> <p>9 Q. Do you agree with that statement?</p> <p>10 A. Okay, yeah, I agree.</p> <p>11 Q. So you agree that Twitter achieved significant</p> <p>12 growth between 2007 and 2014?</p> <p>13 A. Yeah. They had many users, yeah.</p> <p>14 Q. And they grew a lot during that time?</p> <p>15 A. Yeah.</p> <p>16 Q. Why did they grow?</p> <p>17 MR. PADMANABHAN: Objection; lack of</p> <p>18 foundation -- oh, sorry.</p> <p>19 A. Why did they grow?</p> <p>20 Q. (BY MR. PLAIL) Yeah.</p> <p>21 MR. PADMANABHAN: Objection; Rule 613.</p> <p>22 THE WITNESS: I should answer?</p> <p>23 MR. PADMANABHAN: Yeah, you can answer.</p> <p>24 A. That's a very good question.</p> <p>25 MR. PADMANABHAN: And Rule 601 and 603.</p>	<p>1 where you say that Twitter has achieved significant</p> <p>2 growth.</p> <p>3 A. Right.</p> <p>4 Q. Right. What was the source of that growth?</p> <p>5 A. Because --</p> <p>6 MR. PADMANABHAN: Object --</p> <p>7 Hang on.</p> <p>8 Objection; Rule 613 and 601 and 602.</p> <p>9 A. Yeah. Their focus on the sharp messages</p> <p>10 people post. And usually in the past, the Twitter user</p> <p>11 post 140 character messages. Now I guess it increases</p> <p>12 to 280 character or something or more. So -- and it was</p> <p>13 very popular among the younger generation, because they</p> <p>14 want to spread the news or articles, stories in a very</p> <p>15 substantive form. So that's why it was very popular.</p> <p>16 The data was with the very sharp messages.</p> <p>17 Q. (BY MR. PLAIL) Yes.</p> <p>18 A. And social media, all of us -- I guess all of</p> <p>19 us have a social media account. I don't know whether</p> <p>20 you have one or not. Right, Facebook.</p> <p>21 Q. I have social media.</p> <p>22 (Exhibit Number 9 was marked.)</p> <p>23 Q. Exhibit 9.</p> <p>24 A. I don't have X, but I have a social --</p> <p>25 Facebook account.</p>

<p style="text-align: right;">Page 137</p> <p>1 Q. Do you recognize Exhibit 9?</p> <p>2 A. Yeah. This is a very good paper with respect</p> <p>3 to this. Exhibit 9, yeah.</p> <p>4 Q. Can you look at the introduction there?</p> <p>5 A. Uh-huh.</p> <p>6 Q. Sorry. You're an author on this paper, right?</p> <p>7 A. The first one was my student, yeah. He now</p> <p>8 works in HP. He was a very good student.</p> <p>9 Q. So it says here in the first sentence of the</p> <p>10 introduction that Twitter has seen phenomenal growth in</p> <p>11 their user bases.</p> <p>12 A. And that was [unintelligible].</p> <p>13 THE REPORTER: I'm sorry, that was what?</p> <p>14 MR. PADMANABHAN: He's in this</p> <p>15 introduction.</p> <p>16 A. Introduction, okay.</p> <p>17 Yeah.</p> <p>18 Q. (BY MR. PLAIL) So you agree that Twitter has</p> <p>19 seen phenomenal growth in their user base?</p> <p>20 A. [Nods head.]</p> <p>21 Q. Yes?</p> <p>22 A. Yes.</p> <p>23 Q. And you -- there's a citation here, "Java,</p> <p>24 et al, describes this microblogging phenomenon as early</p> <p>25 as 2007, noting that users use the service to talk about</p>	<p style="text-align: right;">Page 139</p> <p>1 Q. One of the reasons Twitter is and was</p> <p>2 successful is because they allow users to talk about</p> <p>3 their daily activity and share information, referring to</p> <p>4 this portion of your paper?</p> <p>5 MR. PADMANABHAN: Objection; Rule 613, 601</p> <p>6 and 602.</p> <p>7 Q. (BY MR. PLAIL) You said "right"?</p> <p>8 A. The user express the daily activities, but</p> <p>9 they want a platform where they can express their</p> <p>10 opinion in a -- not a long text or, say, a few pages.</p> <p>11 They want to write, you know, only with a few</p> <p>12 characters, so 140 characters. Or nowadays, even more,</p> <p>13 280. So that's why Twitter is very popular among</p> <p>14 younger users, as well as the powerful people of the --</p> <p>15 of the government officials and so on.</p> <p>16 Q. Okay.</p> <p>17 A. And it's public, also. Think about this,</p> <p>18 whatever you post, anybody can see it.</p> <p>19 Q. Yeah.</p> <p>20 A. And not like an e-mail messaging system where</p> <p>21 it's private, you can send messages to X, then Y cannot</p> <p>22 see it, right? So that -- in the social media, that</p> <p>23 will not ensure -- Twitter will not ensure that.</p> <p>24 Q. Do you -- what is your understanding of</p> <p>25 Wikipedia?</p>
<p style="text-align: right;">Page 138</p> <p>1 their daily activity and to seek or share information"</p> <p>2 [as read].</p> <p>3 Do you see that?</p> <p>4 A. Yeah.</p> <p>5 Q. Do you agree with that statement?</p> <p>6 (Witness reviewed document.)</p> <p>7 A. Yeah.</p> <p>8 Q. And this kind of goes back to something we</p> <p>9 were talking about earlier. One of the reasons Twitter</p> <p>10 is and was successful is because they allow users to</p> <p>11 talk about their daily activities and share information?</p> <p>12 MR. PADMANABHAN: Rule 613, Rule 601 and</p> <p>13 602.</p> <p>14 A. Sorry, what did you say? You said something</p> <p>15 before.</p> <p>16 Q. (BY MR. PLAIL) This kind of goes back to</p> <p>17 something we were talking about earlier. One of the</p> <p>18 reasons Twitter is and was successful is because they</p> <p>19 allow users to talk about their daily activities and</p> <p>20 share information?</p> <p>21 MR. PADMANABHAN: Objection; Rule 613,</p> <p>22 Rule 601 and 602.</p> <p>23 A. So I objected that or --</p> <p>24 Q. (BY MR. PLAIL) No, I'm asking.</p> <p>25 A. So what is the question? Sorry.</p>	<p style="text-align: right;">Page 140</p> <p>1 A. Yeah. It's -- it's some sort of knowledge</p> <p>2 base where you can put -- say, you can see famous guy's</p> <p>3 article, talks about his life, somebody posted about the</p> <p>4 Bill Clintons, their biography might be there. And so</p> <p>5 it's not based only on the popular people. It goes</p> <p>6 beyond English articles. It can cover other languages.</p> <p>7 It's very popular. And many people utilize that to</p> <p>8 improve or improve the quality of the result for their</p> <p>9 own task.</p> <p>10 Q. Right. And so you understand that Wikipedia</p> <p>11 is a website?</p> <p>12 A. Yeah, but -- a website, but there is more</p> <p>13 mentioned by a certain group.</p> <p>14 Q. I understand.</p> <p>15 A. And then you can write and then edit it, those</p> <p>16 types of things. It's voluntary.</p> <p>17 Q. But it's a website, right?</p> <p>18 A. Yeah; it's a -- a bunch of web pages, but it's</p> <p>19 a knowledge base contained. It's not like -- I create</p> <p>20 an HTML page and I can come up with some fake</p> <p>21 information and so on. Then nobody would verify it,</p> <p>22 right?</p> <p>23 But in this case, in the Wikipedia page,</p> <p>24 there would be some authority they will check sometimes.</p> <p>25 They check it. It's not -- and then you have to put</p>

<p style="text-align: right;">Page 141</p> <p>1 some citation when disclose some information and so on. 2 And this is very useful information for other purposes. 3 Q. Okay. Exhibit 10. 4 (Exhibit Number 10 was marked.) 5 Q. Do you recognize Exhibit 10? 6 A. Now, I recognize it, but I couldn't -- but 7 anyway, yeah, I can recognize. Interesting you are -- 8 talking about my papers is always interesting. 9 Q. So if you look at the middle paragraph in the 10 introduction, it says that -- it basically seems to be 11 saying that one issue with mining or creating data sets 12 out of tweets is kind of a lack of contextual 13 information. Is that fair? 14 MR. PADMANABHAN: Objection; Rule 613. 15 A. Let me read it, because I -- this is long ago. 16 I read this -- 17 Q. (BY MR. PLAIL) Well, here, I'll direct you to 18 a specific sentence. It says, "Another challenge we 19 face is that tweets are often very short and noisy, 20 which makes them very hard to be categorized" [as read], 21 right? 22 (Witness reviewed document.) 23 A. Yeah; that's correct, yeah. It's not easy to 24 parse the tweets, because it's a shortened text and a 25 lot of shorthand is used.</p>	<p style="text-align: right;">Page 143</p> <p>1 words, and collect the entities we believe might be 2 related to the topic" [as read], correct? 3 A. Uh-huh. 4 Q. You have to verbally respond, Dr. Khan. 5 A. Okay. 6 (Witness reviewed document.) 7 A. Yes. So you do -- okay, remove all this 8 stemming -- okay, yeah, that's fine. 9 Q. "And then after that, we do a Wikipedia search 10 based on trend name plus each entity. Then the 11 Wikipedia will return search result list containing 12 hundreds of records. The records at the top of the list 13 are most relevant to our research. And we pull out a 14 fixed number, could be 3, 5, or 7, of record" [as read]. 15 Do you see that? 16 A. Uh-huh. 17 Q. So you take a tweet, right? 18 A. Yes, yes. 19 Q. Remember to verbally respond. 20 A. Sure; yeah, yeah. 21 Q. So in the process described in this paper, you 22 start with a tweet? 23 A. Right, exactly. 24 Q. You remove stop words and you stem the tweet, 25 correct?</p>
<p style="text-align: right;">Page 142</p> <p>1 Q. Okay. And if we go to page -- the next page, 2 142, you go into this in a little more detail. There 3 you say, "One major drawback of the tweets' training set 4 is that the tweets are too short to address the full 5 story of a topic" [as read]. 6 MR. PADMANABHAN: Objection; Rule 613. 7 A. Okay, so -- what are you asking here? 8 Q. (BY MR. PLAIL) Do you agree with that? 9 A. So what -- what should -- what is the topic I 10 need to agree? What is the thing? 11 Q. "One major drawback of the tweets' training 12 set is that the tweets are too short to address the full 13 story of a topic" [as read]. 14 MR. PADMANABHAN: Objection; Rule 613. 15 A. Yeah, yeah. 16 Q. (BY MR. PLAIL) And so if you go on to the 17 next paragraph, you say, "To solve this problem, we 18 introduced the Wikipedia search expansion" [as read]. 19 Do you see that? 20 A. Uh-huh, yeah. 21 Q. Do you see that, yes or no? You have to 22 verbally respond. 23 A. I saw it, yeah -- yes. 24 Q. Okay. "For each tweet, we first do a stemming 25 process to filter out stop words, slang words, unknown</p>	<p style="text-align: right;">Page 144</p> <p>1 A. Correct. 2 Q. Then you use the information of that tweet to 3 run a Wikipedia search, correct? 4 A. Correct. 5 Q. And then you use the relevance results from 6 that Wikipedia search in order to sort the results, 7 correct? 8 MR. PADMANABHAN: Objection; Rule 401, 9 403, 611, and 613. 10 A. So let me read it, if you don't mind. 11 Although my paper, but -- so give me two minutes. 12 (Witness reviewed document.) 13 A. Okay. 14 Q. (BY MR. PLAIL) So you're using the relevance 15 results from Wikipedia's search in order to sort the 16 results? 17 MR. PADMANABHAN: Objection; Rule 613, 18 611, 401 to 403. 19 A. Yes. 20 MR. PLAIL: This is going to be Exhibit -- 21 THE REPORTER: 11. 22 MR. PLAIL: -- 11. 23 (Exhibit Number 11 was marked.) 24 A. It's interesting, my paper. 25 Q. (BY MR. PLAIL) Do you recognize Exhibit 11?</p>

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<p>1 A. Yeah.</p> <p>2 Q. Can you read the abstract of Exhibit 11?</p> <p>3 A. Out loudly or by myself?</p> <p>4 Q. You can do it by yourself. I will read one</p> <p>5 portion into the record.</p> <p>6 (Witness reviewed document.)</p> <p>7 A. Yeah.</p> <p>8 Q. So if we look at the second-to-last sentence,</p> <p>9 it says, "We go one step beyond the previous research by</p> <p>10 mining Twitter messages, assigning weights to them, and</p> <p>11 determining keywords that can be added to the search</p> <p>12 query to act as pointers to the existing search engine</p> <p>13 algorithms, suggesting to a -- the user is looking for</p> <p>14 news" [as read].</p> <p>15 Do you see that?</p> <p>16 A. Let me...</p> <p>17 (Witness reviewed document.)</p> <p>18 Q. Dr. Khan?</p> <p>19 A. Yeah.</p> <p>20 Q. Do you see that?</p> <p>21 A. Yeah, I see it, but what is the question?</p> <p>22 Q. So you're talking about mining Twitter</p> <p>23 messages and then using those messages as keywords for a</p> <p>24 search query. Do you see that?</p> <p>25 A. Mining the Twitter messages and then...?</p>	<p>1 added to the search with the original search term, and</p> <p>2 then go to the search engine so that the search engine</p> <p>3 may give you a better or more precise result.</p> <p>4 Q. I see. So you're using Twitter messages to</p> <p>5 get search terms to use with the search engine?</p> <p>6 A. Yeah. The idea here is we are doing some --</p> <p>7 let's say Twitter or social media captures the more --</p> <p>8 more recent event in a realtime basis.</p> <p>9 So if you remember, there was an</p> <p>10 earthquake happens in Nepal and it was not in the</p> <p>11 mainstream media. It was in the social media, Twitter</p> <p>12 first. And then people know from there. And then all</p> <p>13 this New York Times started to report that event.</p> <p>14 So this type of incident or disaster</p> <p>15 incident or some shooting happens, that Twitter -- or</p> <p>16 social media is very useful. So here, we're not</p> <p>17 improving the search engines result. We just</p> <p>18 utilized the -- in this paper. I'm not talking about</p> <p>19 any other. This paper, we utilized the Twitter as an</p> <p>20 additional source. Twitter will give us some additional</p> <p>21 terms. And using that term, we add it into our original</p> <p>22 search queries. And then it will be submitted to the</p> <p>23 search engine, the search engine will give us a more</p> <p>24 precise...</p> <p>25 Q. I see. So this is a combination of using</p>
Page 146	Page 148
<p>1 Q. Using the messages as keywords for a search</p> <p>2 query. Do you see that?</p> <p>3 A. Uh-huh.</p> <p>4 Q. Okay. So this is an example of combining</p> <p>5 message content with the search query, correct?</p> <p>6 MR. PADMANABHAN: Objection; Rule 613,</p> <p>7 611, 401 to 403.</p> <p>8 A. This is -- okay. So what you're saying this</p> <p>9 is a...</p> <p>10 Q. (BY MR. PLAIL) Example of combining message</p> <p>11 content with a search query.</p> <p>12 MR. PADMANABHAN: Same objections.</p> <p>13 A. Can you give me two or three minutes to read</p> <p>14 this, at least the introduction, quickly?</p> <p>15 Q. (BY MR. PLAIL) I just gave you two or three</p> <p>16 minutes to read the introduction, Dr. Khan.</p> <p>17 A. No, the introduction. That was -- so there's</p> <p>18 a little bit of -- sorry for the trouble.</p> <p>19 (Witness reviewed document.)</p> <p>20 A. So here we are changing the -- the search</p> <p>21 query by adding additional times.</p> <p>22 Q. Based off of Twitter messages?</p> <p>23 A. Right; based on the Twitter message. Because</p> <p>24 Twitter message is sharp, so it gives you additional</p> <p>25 clue after filtering and removal. Then that will be</p>	<p>1 Twitter messages and search engine?</p> <p>2 MR. PADMANABHAN: Objection; Rule 613,</p> <p>3 611, 401 to 403.</p> <p>4 A. Yes. This paper, yeah. That Exhibit 11 talks</p> <p>5 about that.</p> <p>6 So I have more papers to discuss?</p> <p>7 Q. (BY MR. PLAIL) You have a lot of papers.</p> <p>8 A. I should have stopped to write paper.</p> <p>9 Q. Don't worry, I'm not going to give you -- I'm</p> <p>10 going to give you one of your patents.</p> <p>11 A. Yeah, I know this patent. I only have two --</p> <p>12 four patents, so this is one of them, yeah.</p> <p>13 (Exhibit Number 12 was marked.)</p> <p>14 Q. So this is Exhibit 12. Do you recognize</p> <p>15 Exhibit 12?</p> <p>16 A. Yes.</p> <p>17 Q. Exhibit 12 is one of your patents, correct?</p> <p>18 A. Yes.</p> <p>19 Q. Can you go to column 1, lines 35 through 38?</p> <p>20 A. Line 35 through 38.</p> <p>21 MR. PADMANABHAN: So what word are you</p> <p>22 starting with on column 1? "Online"?</p> <p>23 MR. PLAIL: "Online."</p> <p>24 MR. PADMANABHAN: Okay.</p> <p>25 Q. (BY MR. PLAIL) It says there, "Online social</p>

<p style="text-align: right;">Page 149</p> <p>1 networks such as Twitter, Foursquare, and Facebook have 2 emerged only during the last decade and have since 3 become popular tools for public discourse, as well as 4 political and social commentary" [as read]. 5 A. Yes. 6 Q. Do you agree with that? 7 MR. PADMANABHAN: Objection; Rule 613. 8 A. Yes, I agree. 9 Q. (BY MR. PLAIL) So you agree that Twitter has 10 become popular over the last decade? 11 MR. PADMANABHAN: Objection; Rule 613, 12 601, and 602. 13 A. Yes. 14 Q. (BY MR. PLAIL) And this patent's from 2015, 15 correct? 16 A. Yeah, it was issued. 17 Q. And part of the reason they've become popular 18 is because they allow for public discourse, as well as 19 political and social commentary? 20 MR. PADMANABHAN: Rule 601, Rule 611, and 21 Rule 613; objection. 22 THE WITNESS: I should answer? 23 MR. PADMANABHAN: Yeah, yeah, you can 24 answer. 25 A. So what is your question?</p>	<p style="text-align: right;">Page 151</p> <p>1 Q. And so one of the reasons Twitter became 2 popular is because it allowed people to communicate with 3 friends, family, and followers and subscribers around 4 the world? 5 MR. PADMANABHAN: Objection; Rule 613, 6 601, 602. 7 A. But, again, the Twitter message is very short, 8 140 character at that time. And so if you want to -- 9 and this will be publicly available, so anybody can see 10 it when you post it. So that's why it's very popular 11 among the politician, among the celebrities, and among 12 the users that want to be famous. 13 Q. (BY MR. PLAIL) So these are some reasons it 14 became popular. And in addition -- 15 A. But if you have a private message, I don't 16 think this type of -- and if you have a long message 17 from one person to another, then this platform will not 18 work. 19 Q. I see. 20 But an additional reason Twitter became 21 popular is because it allowed people to connect with 22 friends, family, followers, and subscribers around the 23 world? 24 A. Yeah. They have a follow -- 25 MR. PADMANABHAN: Object --</p>
<p style="text-align: right;">Page 150</p> <p>1 Q. (BY MR. PLAIL) Part of the reason Twitter 2 became popular is because it allows for public 3 discourse, as well as political and social commentary? 4 MR. PADMANABHAN: Same objections. 5 A. Yeah, it's -- you can express your opinion in 6 a very -- with a shortened form, so that's why it's 7 popular, yeah. 8 Q. (BY MR. PLAIL) Can you go to column 4, lines 9 27 through 39? 10 A. Column 4, line 27 to 39? 11 Q. Yes. 12 MR. PADMANABHAN: Is this the whole 13 paragraph? 14 MR. PLAIL: We can look at the last 15 sentence. 16 MR. PADMANABHAN: Starting with "any 17 social," is that the sentence? 18 Q. (BY MR. PLAIL) "For example, social 19 networking websites like Twitter, Foursquare, LinkedIn, 20 Facebook, Google Plus, et cetera, enable user 102 to 21 communicate with friends, family, and followers, 22 subscribers around the world, as well as make new 23 connections with unknown people based on similar 24 interests or professions" [as read]. 25 A. So are you asking me yes or no, right? Yes.</p>	<p style="text-align: right;">Page 152</p> <p>1 Just give me one second. 2 Objection; Rule 613, 601, 602. 3 You can answer. Sorry. 4 THE WITNESS: Sorry. 5 A. They -- they have one of the popular concept 6 they introduced in the Twitter, follower -- so the more 7 followers you have, you have a celebrity status. So 8 this type of thing -- this is where the -- the Twitter 9 is the model. But in case of the e-mail messaging 10 system, that's not the case. 11 Q. (BY MR. PLAIL) Another reason Twitter became 12 popular is because it allows you to make new connections 13 with unknown people based on similar interests or 14 professions? 15 MR. PADMANABHAN: Objection; Rule 613, 16 601, 602. 17 A. I think since it is public, anybody can see 18 it, right? And they can join or follow that person, 19 whoever posts the message and likes it. So that way, 20 new -- new connections with unknown people, that link 21 can be established. 22 Q. (BY MR. PLAIL) And that's one of the reasons 23 Twitter became popular? 24 MR. PADMANABHAN: Objection; Rule -- 25 Rule 613, 601, 602.</p>

<p>Page 153</p> <p>1 A. Main -- main thing is if you want to converse</p> <p>2 some -- spread some messages with a very short heading</p> <p>3 or short content, then Twitter is one way to do it. And</p> <p>4 it's public. But if you have private or semiprivate</p> <p>5 messages, then Twitter is not the platform.</p> <p>6 Q. (BY MR. PLAIL) Can you turn back to your</p> <p>7 declaration?</p> <p>8 A. So we're done with my papers?</p> <p>9 Q. For now. I can't let you off the hook that</p> <p>10 easily.</p> <p>11 A. My declaration, right?</p> <p>12 Q. Yeah, your declaration.</p> <p>13 Can you go to page 63?</p> <p>14 A. Uh-huh.</p> <p>15 Q. So I just want to talk about the structure of</p> <p>16 the report, and then we'll go through it in a little</p> <p>17 more detail.</p> <p>18 So you have this Section 4 here, starting</p> <p>19 on page 63, right?</p> <p>20 A. Uh-huh.</p> <p>21 Q. Verbal answers, Dr. Khan.</p> <p>22 A. Yeah, what is the question? Section --</p> <p>23 Q. Section -- there's Section 4, starting here on</p> <p>24 page 63, correct?</p> <p>25 A. Yeah, right.</p> <p>Page 154</p> <p>1 Q. Okay. And you then go -- have a subsection</p> <p>2 (a), right?</p> <p>3 A. Uh-huh.</p> <p>4 Q. Which discusses why you allege the Kircher</p> <p>5 reference does not teach, disclose, or render obvious</p> <p>6 this limitation?</p> <p>7 A. Correct.</p> <p>8 Q. All right. And then if we go to the next</p> <p>9 page -- actually, the page after that, page 65, you have</p> <p>10 a separate section for why you allege the Krug reference</p> <p>11 does not teach, disclose, or render obvious these</p> <p>12 limitations?</p> <p>13 A. Okay.</p> <p>14 Q. Okay. So if we look at paragraphs 66 through</p> <p>15 67, these are discussing your argument for why Kircher,</p> <p>16 on its own, does not discuss the identifying limitation?</p> <p>17 MR. PADMANABHAN: Where are you now?</p> <p>18 MR. PLAIL: 166 through 167 paragraphs.</p> <p>19 A. But you're talking about which reference? The</p> <p>20 paragraph --</p> <p>21 Q. (BY MR. PLAIL) Paragraphs 166 through 167.</p> <p>22 These are your arguments for why Kircher, on its own,</p> <p>23 does not disclose the identifying limitation, correct?</p> <p>24 A. Yes, correct.</p> <p>25 Q. Okay. And then if we go to section (b),</p>	<p>Page 155</p> <p>1 paragraphs 168 through -- it goes on for some length --</p> <p>2 190, these are your arguments for why Krug, on its own,</p> <p>3 does not disclose the identifying limitation?</p> <p>4 A. Yes, that's correct.</p> <p>5 Q. And so your argument for why the combination</p> <p>6 does not disclose the -- sorry, strike that.</p> <p>7 And so your argument for why the</p> <p>8 combination of Kircher and Krug does not disclose the</p> <p>9 identifying limitation is because Kircher does not</p> <p>10 disclose it and Krug does not disclose it?</p> <p>11 A. That's correct. And also, we pointed out if</p> <p>12 you combine these two model, there is some issue there</p> <p>13 you cannot combine it.</p> <p>14 Q. Right.</p> <p>15 Okay. So let's go to -- so that one you</p> <p>16 just referred to, that's down here in a different</p> <p>17 section, correct?</p> <p>18 A. That's correct, yeah. Later, I think.</p> <p>19 Q. Much later.</p> <p>20 A. Section 5, no?</p> <p>21 (Witness reviewed document.)</p> <p>22 Q. I believe that's Section 7.</p> <p>23 MR. PADMANABHAN: Just before you jump in,</p> <p>24 we've been going over an hour. Would you mind if we</p> <p>25 take a little break? I want to run to the restroom.</p> <p>Page 156</p> <p>1 MR. PLAIL: Yes.</p> <p>2 Q. (BY MR. PLAIL) If you can -- if you answer</p> <p>3 the question pending, we can then do the break.</p> <p>4 A. Sure.</p> <p>5 Q. So --</p> <p>6 A. What was the question?</p> <p>7 Q. Let me just...</p> <p>8 A. Do you remember?</p> <p>9 Q. And so Section 7 is where you refer to your</p> <p>10 argument that a person of skill would not be motivated</p> <p>11 to combine Kircher and Krug?</p> <p>12 A. Section 7? Where is Section 7? Which page?</p> <p>13 Do you know?</p> <p>14 Q. 79.</p> <p>15 (Witness reviewed document.)</p> <p>16 A. I'm talking about -- yeah, they tried to say</p> <p>17 when you combine this to what would happen, and</p> <p>18 Section 8 talks about combining Krug with the Kircher</p> <p>19 would be inoperable.</p> <p>20 Q. Okay. So that's a "yes" to my question?</p> <p>21 A. 82 talks about more, so that -- page 82,</p> <p>22 Section 8.</p> <p>23 Q. Okay, I see. You're saying Sections 7 and 8</p> <p>24 together --</p> <p>25 A. Right.</p>
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<p style="text-align: right;">Page 157</p> <p>1 Q. -- is your argument for why a person of 2 skill -- 3 (Cross talk.) 4 Q. -- would not be motivated to combine Kircher 5 and Krug? 6 A. Those two -- yeah, these two would not work 7 to -- to cover -- to replace the patent '217. 8 MR. PLAIL: Okay. Let's take a break. 9 (Break taken from 1:57 p.m. to 2:04 p.m.) 10 Q. (BY MR. PLAIL) This has been previously 11 marked as Exhibit Ex. 1007. Do you recognize this 12 document? 13 A. Yeah; it's Dumais, right? 14 Q. Let's go ahead and look at the cover of 15 Dumais. Do you see that Dumais is assigned to 16 Microsoft? 17 A. Microsoft? 18 Q. Uh-huh. 43 -- it's -- sorry, 73. It says, 19 "Assignee: Microsoft Corporation." 20 A. Where? 73? 21 Q. [Indicating.] 22 A. Oh, okay, yeah. I read one of the authors -- 23 one of the patent inventor's paper in the past, yeah, 24 Susan Dumais. 25 Q. Okay. So you've heard of Susan Dumais?</p>	<p style="text-align: right;">Page 159</p> <p>1 processing data items such as documents, files, e-mail 2 messages, calendar appointments, web pages, subsections 3 within the data items, or across item abstracts, for 4 example" [as read]. 5 Do you see that? 6 A. I see. 7 Q. So do you agree that Dumais can process 8 multiple data types? 9 A. So it can process the web object, HTML pages. 10 It can process images, videos, yeah. 11 Q. And according to paragraph 31, it can also 12 process documents, files, e-mail messages, calendar 13 appointments, correct? 14 A. Okay. So I think that the -- the patent is 15 written in a little bit general language. So the scope, 16 they want to broaden it, so that's why they mention 17 multiple data types. 18 So, in this case -- because if you see 19 later in the patent, that talks about this patent, 20 Dumais, it talks about search engine they will utilize. 21 THE REPORTER: Search engine -- 22 THE WITNESS: Search engine. 23 THE REPORTER: Okay. 24 Q. (BY MR. PLAIL) So you disagree with the 25 statement in Dumais where it says that it can process</p>
<p style="text-align: right;">Page 158</p> <p>1 A. I read some of her paper, yeah, in the past. 2 Q. And this patent is assigned to Microsoft Corp, 3 correct? 4 A. Yeah, 73. Yeah, from the Microsoft, yes. I 5 remember she used to work in Microsoft. Now I don't 6 know. Probably she is still. 7 Q. Let's look at the abstract of Dumais. The 8 first sentence says, "Various components and processes 9 are provided to enable data processing on multiple data 10 types where aspects of the history of the user 11 activity," [as read] and then it goes on from there. 12 Do you see that? 13 A. Uh-huh. 14 Q. Verbal answers, Dr. Khan. 15 A. Yeah, I see. 16 Q. So you agree that Dumais can operate with 17 multiple data types? 18 A. Multiple data types means -- you mean audio, 19 video, images, that type of thing? 20 Q. If you go to paragraph 31 of Dumais. 21 A. Uh-huh. 22 Q. It says in the first sentence of paragraph 31, 23 "The system and methods described herein support the 24 plurality of data applications." 25 It goes on to say, "This includes</p>	<p style="text-align: right;">Page 160</p> <p>1 data items such as documents, files, and e-mail 2 messages? 3 A. No, I'm not saying -- but I'm saying since 4 they utilized the search engine -- so search engine is 5 well-equipped or well-trained. It works very well from 6 the -- the HTML pages. It works very well for the 7 documents and so on. But when it comes to the e-mail 8 messages, it will be associated with the sender and the 9 recipient. So this will play some role in the ranking 10 process, right? So that part not the main focus of this 11 patent. 12 Q. You agree that Dumais can process data items 13 such as documents, files, and e-mail messages, correct? 14 MR. PADMANABHAN: Objection -- oh, sorry. 15 Objection; asked and answered -- 403, 601. 16 Q. (BY MR. PLAIL) Dr. Khan, does it say "e-mail 17 messages" there in paragraph 31? 18 A. Yes, I agree. 19 Q. And it says that it can process e-mail 20 messages in paragraph 31, correct? 21 A. Correct, yeah. 22 Q. And so do you disagree with the statement in 23 Dumais that it can process e-mail messages? 24 A. Because if you read the whole -- if you see 25 the whole patent, if you read it, the way it was framed,</p>

<p style="text-align: right;">Page 161</p> <p>1 they mostly focused on the -- the back end. They</p> <p>2 utilize the search engine. You can see here search</p> <p>3 component where they rely on it, and the search</p> <p>4 component will give you some results back, then they</p> <p>5 will reorder it and present to the users.</p> <p>6 Q. So you disagree -- you're saying that Dumais</p> <p>7 cannot process e-mail messages?</p> <p>8 A. I'm saying their ranking is entirely</p> <p>9 different.</p> <p>10 Q. I am asking, can Dumais process e-mail</p> <p>11 messages?</p> <p>12 A. I -- I don't know. They may be able to do it.</p> <p>13 They may not be able to do it.</p> <p>14 Q. Okay. So you disagree with paragraph 31 of</p> <p>15 Dumais?</p> <p>16 A. In a general case, I agree with that.</p> <p>17 Q. In the specific case of Dumais, do you agree</p> <p>18 with paragraph 31 where it says it can process e-mail</p> <p>19 messages?</p> <p>20 MR. PADMANABHAN: Objection; 4- -- 611,</p> <p>21 403.</p> <p>22 A. Because my concern is there's search engine is</p> <p>23 involved in the back-end for the Dumais. So search</p> <p>24 engine are already utilizing the public data and so on</p> <p>25 to build the index and so on.</p>	<p style="text-align: right;">Page 163</p> <p>1 Q. And they also have Outlook?</p> <p>2 A. Yeah; Outlook, yeah.</p> <p>3 Q. And they also have Microsoft Exchange?</p> <p>4 A. Yeah, Microsoft Exchange --</p> <p>5 Q. And those are e-mail systems?</p> <p>6 A. Right, yeah.</p> <p>7 Q. And those are very popular systems?</p> <p>8 A. Yeah. But at the time, people use other</p> <p>9 e-mail systems, but yeah. Because Microsoft doesn't</p> <p>10 give you a free version. You have to pay.</p> <p>11 Q. Yeah.</p> <p>12 Okay. So looking at Figure 1, Figure 1 is</p> <p>13 a diagram showing the Dumais system?</p> <p>14 A. Uh-huh -- oh, next page, right?</p> <p>15 Q. Yes.</p> <p>16 A. Okay, yeah.</p> <p>17 Q. Do you see that there's a monitor component</p> <p>18 110?</p> <p>19 A. Right.</p> <p>20 Q. That monitor component tracks the user's</p> <p>21 interaction with the data items. Is that right?</p> <p>22 (Witness reviewed document.)</p> <p>23 A. Okay, yeah.</p> <p>24 Q. And so if we go to paragraph 22 of Dumais.</p> <p>25 A. 22 of Dumais. Yeah.</p>
<p style="text-align: right;">Page 162</p> <p>1 Q. (BY MR. PLAIL) I'm not asking what usually</p> <p>2 happens, Dr. Khan. I'm asking whether Dumais can</p> <p>3 process e-mail messages, which it says it can do in</p> <p>4 paragraph 31.</p> <p>5 A. Yeah, the writing said yes.</p> <p>6 Q. And so -- but you're -- you're disagreeing</p> <p>7 that it's capable of doing it?</p> <p>8 A. Yeah, I disagree with the -- eventually the</p> <p>9 end results may not be good, or it -- what the</p> <p>10 original -- because it doesn't take into consideration</p> <p>11 sender concepts, recipient concepts, and all this</p> <p>12 importancy. So the result may not be that high quality.</p> <p>13 Q. Okay. But you agree that an e-mail message</p> <p>14 would have a sender and a receiver?</p> <p>15 A. Yeah.</p> <p>16 Q. Can you look at Figure 1 of Dumais --</p> <p>17 actually, let's go back to the cover real quick. I just</p> <p>18 want to ask some questions about Microsoft real quick.</p> <p>19 In 2005, was Microsoft a major player in</p> <p>20 e-mail?</p> <p>21 A. In 2005, Microsoft was a major player in the</p> <p>22 e-mail business? I don't know.</p> <p>23 Q. You don't know?</p> <p>24 A. No. But I know they have a browsing system</p> <p>25 and they have a large search engine.</p>	<p style="text-align: right;">Page 164</p> <p>1 Q. It says referring to Figure 1. And then it</p> <p>2 says that that's a System 100 that illustrates the data</p> <p>3 processing architecture. Do you see that?</p> <p>4 A. Yeah.</p> <p>5 Q. It says there that, "A monitor component 110</p> <p>6 observes data and actions over time with one or more</p> <p>7 databases 120 that store one or more data items 130" [as</p> <p>8 read].</p> <p>9 Do you see that?</p> <p>10 A. Which one? Monitoring component?</p> <p>11 Q. Monitoring component 110.</p> <p>12 A. Yeah.</p> <p>13 Q. If you go down, it says, "For instance, this</p> <p>14 can include observing when files are opened, closed,</p> <p>15 edited, added to, deleted, read, or written to, cut,</p> <p>16 pasted, last edited, forwarded, replied to, sent to,</p> <p>17 last viewed, the amount of time viewed, time interacted</p> <p>18 with over the time horizon" [as read], and it goes on</p> <p>19 from there.</p> <p>20 Do you see that?</p> <p>21 A. Uh-huh.</p> <p>22 MR. PADMANABHAN: You have to say "yes" or</p> <p>23 "no."</p> <p>24 A. Yes, I see it.</p> <p>25 Q. (BY MR. PLAIL) So you agree, then -- strike</p>

<p style="text-align: right;">Page 165</p> <p>1 that.</p> <p>2 The monitoring component 110 observes</p> <p>3 actions such as when the files are opened, closed,</p> <p>4 edited, replied to, sent to, for example?</p> <p>5 A. Right. But this case, the file is a -- the --</p> <p>6 you're not -- Microsoft Word document that you can think</p> <p>7 about.</p> <p>8 Q. Right.</p> <p>9 A. And it can be HTML pages.</p> <p>10 Q. Right. And --</p> <p>11 A. And it can be -- and this file -- this HTML</p> <p>12 pages are the documents are not attached to the -- no</p> <p>13 concept is -- the sender is not there. And then no</p> <p>14 concept for the recipient may not be explicitly</p> <p>15 mentioned here. And then also --</p> <p>16 Q. Let me stop you right there. It says there</p> <p>17 reply to or sent to?</p> <p>18 A. Okay, yeah. It says reply to or sent to,</p> <p>19 okay.</p> <p>20 Q. So it can track when an e-mail is replied to</p> <p>21 or sent to, correct?</p> <p>22 A. Yes.</p> <p>23 MR. PADMANABHAN: Objection; 611.</p> <p>24 Q. (BY MR. PLAIL) So you said earlier that</p> <p>25 there's no concept of a recipient in Dumais. Is that</p>	<p style="text-align: right;">Page 167</p> <p>1 say something vague or wrong.</p> <p>2 (Witness reviewed document.)</p> <p>3 Q. To put it another way, you're testifying that</p> <p>4 Dumais wouldn't create a high-quality output?</p> <p>5 MR. PADMANABHAN: Objection; Rule 611.</p> <p>6 A. I don't want to answer that.</p> <p>7 Q. (BY MR. PLAIL) But you have to answer that.</p> <p>8 A. Oh.</p> <p>9 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>10 613.</p> <p>11 Q. (BY MR. PLAIL) Dr. Khan, your not wanting to</p> <p>12 answer something is not legitimate. If I ask a</p> <p>13 question, you have to answer it to the best of your</p> <p>14 ability.</p> <p>15 A. Yeah. So you are saying -- what is the</p> <p>16 question?</p> <p>17 Q. You're testifying that Dumais would not create</p> <p>18 a high-quality output?</p> <p>19 MR. PADMANABHAN: Objection; Rule 611.</p> <p>20 A. No; I said Dumais would produce very -- it is</p> <p>21 possible that it may work very well for their setting.</p> <p>22 Their setting is from the search engine, they would pull</p> <p>23 out the objects and then customize it and present to the</p> <p>24 users in a certain way that will fulfill the user</p> <p>25 requirements, because it's more -- they do creative</p>
<p style="text-align: right;">Page 166</p> <p>1 your testimony?</p> <p>2 A. No concept of the send, because an e-mail is</p> <p>3 with the sender and recipient, right? There's two</p> <p>4 concepts are important. But here, in this case, the</p> <p>5 object case, general object case, we focus mostly on</p> <p>6 the -- we can think about this might be an n user or the</p> <p>7 recipient. So sender is not important here. If you</p> <p>8 think about -- if you are looking for some HTML pages.</p> <p>9 Q. But Dumais can also use e-mail?</p> <p>10 A. They mention it briefly, but in a very high</p> <p>11 level -- in a few place they mention it, that's it. But</p> <p>12 when it comes to the algorithm, I'm not sure whether</p> <p>13 that talks about -- the algorithm takes into</p> <p>14 consideration those sender importancy and the -- the</p> <p>15 recipient factors taken into consideration, the answer</p> <p>16 is no.</p> <p>17 Q. Okay. So your testimony is that the algorithm</p> <p>18 in the '217 patent requires -- is required to take into</p> <p>19 account sender importancy and recipient factors?</p> <p>20 MR. PADMANABHAN: Objection; 611.</p> <p>21 A. Let me -- okay, let me read it from my</p> <p>22 declaration.</p> <p>23 Q. (BY MR. PLAIL) I was just quoting your</p> <p>24 previous statement.</p> <p>25 A. I want to say it precisely. I don't want to</p>	<p style="text-align: right;">Page 168</p> <p>1 writing, and then basically with the help of</p> <p>2 collaborative filtering, they add additional times</p> <p>3 there, and then those revised query would be sent to the</p> <p>4 search engine, and search engine would give you the</p> <p>5 results back. And then that results, maybe you can</p> <p>6 customize it or personalize it and present to the users.</p> <p>7 So in that case, for that type of context,</p> <p>8 it may work very well. But when the search -- you're</p> <p>9 looking for search objects for the Dumais patent.</p> <p>10 Q. (BY MR. PLAIL) And so did you evaluate the</p> <p>11 quality of the Dumais algorithm when you evaluated it</p> <p>12 against the '217 patent claims?</p> <p>13 MR. PADMANABHAN: Objection; to some</p> <p>14 extent, Rule 613, and then 611.</p> <p>15 A. All that means some numbers or just --</p> <p>16 Q. (BY MR. PLAIL) Analyze, consider, review?</p> <p>17 A. So if you ask me in terms of the -- because as</p> <p>18 a researcher, we always -- when you write the paper, you</p> <p>19 can come up with a theory, but you have to back it up</p> <p>20 with some numbers. So you do some empirical study, and</p> <p>21 then you show those results and so on.</p> <p>22 But in patent application, that is not the</p> <p>23 case. That's very standard procedure. So -- but the</p> <p>24 way this patent, '217, the ranking algorithm is very</p> <p>25 impressive. And then it is very tall, and it considers</p>

<p>Page 169</p> <p>1 the sender importancy. It considers the local -- the 2 local importancy, global importancy. And then based on 3 that -- and the cognate importancy. And based on that, 4 they come up with a score. 5 And I think for e-mail messaging system, 6 this patent '217 would work very well in the time frame. 7 And an n user should be happy without getting the e-mail 8 messages with that system. But if you consider the 9 other system where you just rely on the search engine 10 and search engine gives you the results, and then you 11 just -- based on the user preference, you just change 12 the order. That's possible. 13 It may -- then you can say it may 14 considers the one factor only, that some sort of 15 collaborating effect might be there. But the other 16 importancy will not be there, my understanding. So in 17 that case, patent '217 will outperform the other ones at 18 that point. 19 Q. And so you were evaluating the relative 20 quality of the algorithms between the '217 patent and 21 the prior art when you were evaluating the claims? 22 MR. PADMANABHAN: Objection; Rule 611. 23 A. Sorry, can you say...? 24 Q. (BY MR. PLAIL) You were evaluating the 25 relative quality between the algorithms for the '217</p>	<p>Page 171</p> <p>1 Microsoft -- for patent '217. And it's not public. 2 They will not give me the system to evaluate it, right? 3 It's impossible. So no. 4 Q. So you're saying it's impossible to evaluate 5 the system without looking at the source code to -- to 6 figure out exactly how it's done? 7 A. Source code making the idea that the way the 8 patent is written that they describe the equations and 9 they explain it and these are the important components. 10 So based on that, I'm giving my opinion. And the -- the 11 patent '217 are, again, focusing on four -- four 12 different components for the ranking process. So 13 that -- some of this -- some of this components may be 14 presented in one or two patents, but others I have sent. 15 Q. Okay. Can we go back to Claim 1 real quick? 16 A. Sure. 17 Q. In Claim 1, can you tell me which limitation 18 requires a high-quality algorithm? 19 MR. PADMANABHAN: Objection; beyond -- 20 Rule 613 and 611. 21 A. Which limitation? 22 Q. (BY MR. PLAIL) Requires a high-quality 23 algorithm. 24 MR. PADMANABHAN: Objection; Rule 611 and 25 613.</p>
<p>Page 170</p> <p>1 patent and the algorithms for the prior art when you 2 were forming the analysis of the claims? 3 A. Correct. 4 MR. PADMANABHAN: Objection; Rule 611. 5 A. What -- 6 Q. (BY MR. PLAIL) And -- 7 A. What? 8 Q. And when you were going through that 9 evaluation -- 10 A. Evaluation or just reading those and the 11 patent or -- 12 Q. I mean, I would -- 13 A. Evaluation has -- in the computer science, 14 evaluation means empirical result, sometimes people 15 interpret. 16 Q. Uh-huh. 17 A. So you -- you are not meaning that way, right? 18 Q. Well, I guess my question is: Did you -- did 19 you go -- strike that. 20 Did you create an empirical result -- 21 A. No. 22 Q. -- from your study? 23 A. No. 24 Q. No? Okay. 25 A. It's not -- it's -- it's a full system for</p>	<p>Page 172</p> <p>1 THE WITNESS: I should answer? 2 MR. PADMANABHAN: Yeah. 3 Q. (BY MR. PLAIL) You must answer. 4 A. Okay. So, first, relevancy means there are -- 5 so your -- which claim or which limitation? Which 6 claim? 7 Q. Within Claim 1, can you point to limitations 8 that require a high-quality algorithm? 9 A. Okay. Yes, so, first of all, first means 10 relevancy takes into consideration the user actions, 11 right? User actions, right, on the -- 12 Q. So you're saying that -- 13 A. No, no. And then second measure of relevancy 14 that talks about four different -- one of the four -- 15 one or some are satisfied, so these are the important 16 components that will contribute the high-quality result. 17 Q. Okay. So you're saying the second measure of 18 relevancy, the four attributes under the second measure 19 of relevancy, are where the high-quality algorithm is 20 required? 21 MR. PADMANABHAN: Objection; misstates -- 22 Rule 611. 23 A. Second -- because second relevancy talks about 24 the -- the two conditions for the -- for the identifying 25 the second set of users or the -- that user needs to be</p>

<p>Page 173</p> <p>1 cognate to the first user and then needs to be the 2 recipient of the same electronic message, right? So 3 that's one.</p> <p>4 And then we talk about the local -- we 5 talk about the relevancy means there will be based on 6 the local relevancy, global -- I'm sorry, local 7 importancy, global importancy, content relevancy, and 8 then -- and then collaborative relevancy, and then 9 combine it.</p> <p>10 Q. (BY MR. PLAIL) Okay. So the claim -- just to 11 recap what you just said, the claim requires a 12 high-quality algorithm in order to identify a cognate 13 user, correct?</p> <p>14 MR. PADMANABHAN: Objection; Rule 611.</p> <p>15 A. No.</p> <p>16 Q. (BY MR. PLAIL) No?</p> <p>17 A. What did you say?</p> <p>18 Q. The claim requires a high-quality algorithm in 19 order to identify the cognate user?</p> <p>20 MR. PADMANABHAN: Objection; Rule 611.</p> <p>21 A. No. I said the claims come up with a very 22 efficient scoring mechanism, and that efficient scoring 23 mechanism is based on a number of algorithms or 24 approaches, the first relevance -- I'm sorry, the -- the 25 local relevancy, global relevancy, then content and</p>	<p>Page 175</p> <p>1 A. There is no specific --</p> <p>2 Q. Limitation in Claim 1 that requires a 3 high-quality algorithm?</p> <p>4 MR. PADMANABHAN: I'm just going to object 5 as Rule 611 and 401 and 403.</p> <p>6 A. I tried to say that the second measure of 7 relevancy is important here. And first measure of 8 relevance, we just take the user actions. And then 9 second relevancy has a bunch of components, right?</p> <p>10 Q. (BY MR. PLAIL) So the second measure of 11 relevancy, does that require a high-quality algorithm?</p> <p>12 MR. PADMANABHAN: Objection; Rule 611.</p> <p>13 A. No. The second measure of relevancy itself is 14 a -- produce high-quality scoring, so that is why that's 15 impressive.</p> <p>16 Q. (BY MR. PLAIL) So the second measure of 17 relevancy implicitly requires a high-quality output?</p> <p>18 A. No. It produces --</p> <p>19 MR. PADMANABHAN: Objection -- sorry. 20 Objection; 611 and 401 to 403.</p> <p>21 A. It produces high-quality result. The scoring 22 mechanism is -- the algorithm come up with a scoring 23 mechanism, and that is very satisfactory as compared to 24 other processes, as well.</p> <p>25 Q. (BY MR. PLAIL) How do you determine whether a</p>
<p>Page 174</p> <p>1 calibrating. And if you ask me which one is the most 2 important, as I told you, that needs further study.</p> <p>3 Q. (BY MR. PLAIL) I'm not asking which is more 4 important. I'm asking which claim limitations require a 5 high-quality algorithm?</p> <p>6 MR. PADMANABHAN: Objection; Rule 611 and 7 613 --</p> <p>8 A. Which --</p> <p>9 MR. PADMANABHAN: -- and 401 and 403.</p> <p>10 A. Which ones requires high-quality algorithm, 11 right?</p> <p>12 Q. (BY MR. PLAIL) Yes.</p> <p>13 A. That, I cannot answer. I don't know.</p> <p>14 Q. You don't know which claim limitations require 15 a high-quality algorithm?</p> <p>16 A. Because of the combination of this would work 17 together --</p> <p>18 Q. Okay.</p> <p>19 A. -- and produce the better quality result.</p> <p>20 Q. So there's no specific limitation in Claim 1 21 that requires a high-quality algorithm?</p> <p>22 A. There is -- sorry, what?</p> <p>23 Q. So your testimony is that there is no specific 24 limitation in Claim 1 that requires a high-quality 25 algorithm?</p>	<p>Page 176</p> <p>1 specific scoring is satisfactory?</p> <p>2 A. Because it is used -- it takes into 3 consideration the various factors, not only that one 4 factor, let's say, calibrated for time, like Dumais. 5 And then the Krug focuses on the collaborative -- 6 equivalent calibrated configuring.</p> <p>7 But there's one important difference I 8 should clarify. The same -- when you do the 9 collaborative filtering, the recipient, whatever the 10 recipient will choose, identify these are the cognate 11 users, that cognate users need to be the recipient of 12 the same electronic message that the original -- or the 13 first user receives it, right?</p> <p>14 Q. And so that's what makes it a high quality?</p> <p>15 A. Right. It's -- it's very statistic. So that 16 way, in general, in the informational area, you can get 17 everything -- you can tell everything to the user. That 18 way you give a lot of junk, right? So that will hurt 19 the system performance. You may get 100 percent recall, 20 but the position will be very low, because you're 21 getting a lot of junk.</p> <p>22 But here, the -- the way that I can 23 process work because we're trying to give the more 24 precise -- in the collaborative filtering, we're 25 choosing the most important users with respect to given</p>

<p style="text-align: right;">Page 177</p> <p>1 user. And then that user's --</p> <p>2 Q. Let me -- let me short-cut this a little bit.</p> <p>3 Dr. Khan, are you saying that Dumais does</p> <p>4 not have a high-quality algorithm?</p> <p>5 A. No, I'm not saying that -- Dumais is a very</p> <p>6 good algorithm, and it will work for their setting very</p> <p>7 well. That is more a personalization and more identify</p> <p>8 the objects and so on. In general, object setting, you</p> <p>9 do very good.</p> <p>10 Q. Okay. But you can't identify specific set of</p> <p>11 limitations in Claim 1 that requires a high-quality</p> <p>12 algorithm?</p> <p>13 MR. PADMANABHAN: Objection; Rule 611, 401</p> <p>14 to 403.</p> <p>15 A. I'm saying that --</p> <p>16 MR. PADMANABHAN: And sorry -- yeah, I got</p> <p>17 it all.</p> <p>18 Go ahead, sir.</p> <p>19 A. So second measure of relevancy, I think you --</p> <p>20 the way it comes up with all this scoring mechanism,</p> <p>21 that is very powerful and that is the best at the time</p> <p>22 as compared to other patents.</p> <p>23 Q. (BY MR. PLAIL) Okay. So you're saying the</p> <p>24 second measure of relevancy requires a high-quality</p> <p>25 algorithm?</p>	<p style="text-align: right;">Page 179</p> <p>1 with a really bad measure of relevance?</p> <p>2 MR. PADMANABHAN: Objection; 601 -- sorry,</p> <p>3 611, 401 to 403, and 701 to 704.</p> <p>4 A. First of all, then they have to -- okay, so if</p> <p>5 that's the case that they can implement -- it's not easy</p> <p>6 to implement, first of all, with an ordinary skill set.</p> <p>7 And even if they implement this full-fledged system, it</p> <p>8 requires a lot of time.</p> <p>9 Once they build it, then they may need</p> <p>10 to -- one thing they can do, they can run it multiple</p> <p>11 times and play with the parameters and do some</p> <p>12 modalities, and then come up with the weights and so on.</p> <p>13 Change the weight. Because there's a lot weights and</p> <p>14 parameters involved here, so --</p> <p>15 Q. (BY MR. PLAIL) And the weights are not</p> <p>16 disclosed in the patent?</p> <p>17 A. Right. But they're mentioned. But usually</p> <p>18 they don't disclose it. Everybody will start the</p> <p>19 company, the business.</p> <p>20 Okay, I want to say one thing -- no, I</p> <p>21 shouldn't say.</p> <p>22 Q. Okay. So going back to Dumais, can you go to</p> <p>23 paragraph 19?</p> <p>24 A. Yeah.</p> <p>25 Q. Here it's discussing in the second sentence,</p>
<p style="text-align: right;">Page 178</p> <p>1 MR. PADMANABHAN: Objection; mis- --</p> <p>2 Rule 611, 401 to 403.</p> <p>3 A. I'm not saying high quality, but I'm saying it</p> <p>4 comes up with a scoring mechanism that is the -- that is</p> <p>5 actually fulfills whatever the user wants to get.</p> <p>6 Q. (BY MR. PLAIL) So -- I see.</p> <p>7 So you're looking at this from a result?</p> <p>8 A. Perspective, yeah.</p> <p>9 Q. Yeah.</p> <p>10 So what about the input perspective? What</p> <p>11 inputs do we need to create a high-quality result?</p> <p>12 MR. PADMANABHAN: Objection; Rule 611, 401</p> <p>13 to 403.</p> <p>14 A. In the messages, and then in the mechanism,</p> <p>15 you mean?</p> <p>16 Q. (BY MR. PLAIL) Yes.</p> <p>17 A. Yeah, user actions you'll capture. In this</p> <p>18 case, user action -- you will capture a lot of user</p> <p>19 activities, right? And then we will take into</p> <p>20 consideration in the -- the sender importancy and global</p> <p>21 importancy. Then we'll take into consideration those --</p> <p>22 the cognate users thing and then the content relevancy.</p> <p>23 Okay, one important --</p> <p>24 Q. So -- so what happens if a person of skill</p> <p>25 implements every limitation of the claim and they end up</p>	<p style="text-align: right;">Page 180</p> <p>1 "For example, the activity or interaction can be</p> <p>2 monitored and subsequently tagged to a data item, e.g.,</p> <p>3 activity of file interaction design assigned a weight</p> <p>4 and applied to a column in a database and later employed</p> <p>5 for searching, indexing, cataloging, ranking, or viewing</p> <p>6 of various data items residing in that place" [as read].</p> <p>7 Do you see that?</p> <p>8 (Witness reviewed document.)</p> <p>9 A. So here the -- this -- Dumais heavily relies</p> <p>10 on the metadata. You are -- well, let's say they want</p> <p>11 to do with the HTML pages. So you want to -- you are</p> <p>12 looking for -- so you wanted to go to, let's say,</p> <p>13 Hungary, and you are saying -- let's say you are looking</p> <p>14 for a flight for Hungary to go from here to Budapest.</p> <p>15 So then the system knows from your historical data that</p> <p>16 the -- the tag is you -- you do a lot of -- in the past,</p> <p>17 you do a lot of interaction with the travel pages,</p> <p>18 travel HTML pages. So then that -- this travel keywords</p> <p>19 will be added with your origin of search term.</p> <p>20 And then this search term, plus the</p> <p>21 original search term, plus augment -- additional terms</p> <p>22 that the -- that the system provides, so that will be --</p> <p>23 that will go to the search engine, and search engine,</p> <p>24 instead of searching only on the Hungary flight, they</p> <p>25 will search Hungary flight plus the travel. And it</p>

<p>Page 181</p> <p>1 gives you more -- hopefully more relevant pages search 2 engine.</p> <p>3 And then based on your interest, it will 4 customize it and sort the results and present it to you. 5 That's the main idea for the Dumais. The rewriting, and 6 then the reranking the results.</p> <p>7 THE REPORTER: I'm sorry, the what? 8 THE WITNESS: Reranking, reranking.</p> <p>9 Q. (BY MR. PLAIL) So the actions of the users 10 are tracked and appended to each data item? 11 MR. PADMANABHAN: Objection; Rule 611.</p> <p>12 A. Action -- okay, action -- 13 Q. (BY MR. PLAIL) Each user -- so the actions of 14 the users are tracked and appended to each data item? 15 A. Not each data item. It will be appended to 16 the user profile. Because in order to -- every time you 17 log in, it will be -- 18 Q. So I'm just going to paragraph 19. It says, 19 "The activity and interaction can be monitored and 20 tagged to a data item" [as read]. 21 A. Activity and interaction can be monitored... 22 (Witness reviewed document.) 23 A. It can be -- yeah, it can be tagged to a 24 particular item, and at the same time, it will keep 25 track information that this -- this data item is</p> <p>Page 182</p> <p>1 associated with that particular user. It's not a 2 generic way to go, no. 3 Q. (BY MR. PLAIL) Okay. So the actions of the 4 users are tracked and appended to each data item? 5 A. Right. 6 Q. And since one of the data items is e-mail, it 7 will also track actions performed by the users on each 8 e-mail? 9 MR. PADMANABHAN: Objection; Rule 611.</p> <p>10 A. Where is it? Second -- next sentence or -- 11 Q. (BY MR. PLAIL) I'm asking the question. 12 A. Oh. So go ahead. What is the question? 13 Q. Since one data type of Dumais is e-mail, it 14 would also track actions performed by the users on each 15 e-mail? 16 MR. PADMANABHAN: Objection; Rule 611.</p> <p>17 A. Okay. So first of all, in case of Dumais, if 18 you want to keep track of for each user and you want to 19 keep track of the user activities, then I suspect you 20 will end up with a huge amount of metadata that may 21 not -- that may be a problem. So either you may need to 22 remove it, some of it, and keep track the most important 23 one. Those things will happen. 24 Q. (BY MR. PLAIL) My question was: Since one 25 data type of Dumais is e-mail, it would also track</p>	<p>Page 183</p> <p>1 actions performed by the users on each e-mail? 2 MR. PADMANABHAN: Objection; Rule 611 and 3 613. 4 A. So that's your question, not from here, right? 5 Q. (BY MR. PLAIL) In Dumais, one of the data 6 types is e-mail, right? 7 A. Right, yeah; but they mention, yes. 8 Q. And Dumais tracks actions performed by the 9 users on the data types, right? 10 MR. PADMANABHAN: Objection; Rule 611 and 11 613. 12 (Witness reviewed document.) 13 A. Yeah, but -- okay. So -- but that's why I 14 added -- from the beginning, I tried to emphasize that 15 their objective is not at the -- at the e-mail level. 16 Their objective is more at the HTML page or documents at 17 that level. And then is a -- usually the documents are 18 the -- 19 Q. (BY MR. PLAIL) So is your testimony that the 20 claim of the '217 patent cannot be used on documents? 21 MR. PADMANABHAN: Objection; misstates -- 22 A. No, I didn't say that. 23 MR. PADMANABHAN: Objection; Rule 611. 24 A. As long as you have a sender and a recipient, 25 yeah.</p> <p>Page 184</p> <p>1 Q. (BY MR. PLAIL) And the document has a sender 2 and a receiver? 3 MR. PADMANABHAN: Objection; misstates 4 the -- sorry, Rule 611. 5 A. The document has -- yeah, if you create that 6 document, you might be one -- but as long as it's a 7 communication system, personal communication system, 8 then it should be okay. 9 Q. (BY MR. PLAIL) So you testified that the 10 objective of Dumais was relating to HTML pages or 11 documents. Why does that matter if the claims of the 12 '217 patent can be used for documents? 13 MR. PADMANABHAN: Objection; 611 and 4 -- 14 403. 15 A. So you're saying I'm -- I'm saying -- what is 16 the question? You are saying -- 17 Q. (BY MR. PLAIL) You -- earlier you testified 18 that the emphasis of Dumais is not on the e-mail level. 19 Their objective is of the HTML page or documents. 20 A. Right. 21 Q. But the '217 patent can be used for documents, 22 right? 23 MR. PADMANABHAN: Objection; Rule 611. 24 A. But the -- as long as there's a sender and 25 recipient, yes.</p>
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<div>Page 185</div> <div>1 Q. (BY MR. PLAIL) And how do you know if a 2 document has a sender and a recipient? 3 MR. PADMANABHAN: Objection; Rule 6- -- 4 A. Think about e-mail messages has attachment, 5 right? 6 Q. (BY MR. PLAIL) So the only time a document 7 can be sorted with '217 is when it's an attachment? 8 MR. PADMANABHAN: Objection; Rule 611. 9 A. That -- that one possibility. And then if you 10 have -- because '217 also considers some messages, 11 right? 12 Q. (BY MR. PLAIL) Do you ever send e-mails to 13 people? 14 A. Yeah. 15 Q. Do you have documents on your computer? 16 A. Sometimes. Sometimes I don't -- sometimes -- 17 Q. Or is every document on your computer an 18 e-mail attachment? 19 A. No; every -- every e-mail doesn't have an 20 attachment, right? 21 Q. Yeah. And so not all documents are 22 interperson communications, right? 23 A. All -- not necessarily. 24 Q. So you agree that documents are not 25 necessarily interperson communications?</div>	<div>Page 186</div> <div>1 MR. PADMANABHAN: Objection; Rule 611 and 2 401 to 403. 3 A. Right. 4 Q. (BY MR. PLAIL) Let's go to paragraph 52 of 5 Dumais. It says that, "Models can be derived for 6 individuals or groups of individuals at 570, such as via 7 collaborative filtering techniques that develop profiles 8 by analysis of similarities among individuals or groups 9 of individuals" [as read]. 10 Do you see that? 11 A. Okay. So -- okay, let me see -- can I see 12 570? 13 (Witness reviewed document.) 14 A. Okay, yeah. 15 Q. So you agree -- so Dumais can generate models 16 for either a single person or a group of people, right? 17 MR. PADMANABHAN: Objection -- 18 A. So what is the model here? The model is -- 19 Q. (BY MR. PLAIL) If you look at 43. 20 A. 43, the defined model? 21 Q. The user -- there's, for example, the user 22 model. 23 (Witness reviewed document.) 24 A. Okay. 25 Q. So you -- so Dumais can generate a model for</div>
<div>Page 187</div> <div>1 either a single person or a group of people, right? 2 A. Okay, yeah. 3 Q. And the models are created using collaborative 4 filtering techniques? 5 A. Right, yeah. 6 Q. And those collaborative filtering techniques 7 are based on analysis of similarities among individuals 8 or groups of individuals? 9 A. Okay, yeah. But -- 10 Q. Including -- 11 A. Okay. 12 Q. -- similarity computations based on content 13 and/or usage of items? 14 A. Okay. 15 Q. Yes? 16 A. Yeah, they wrote it that way, yes. 17 Q. So Dumais can derive a model that describes a 18 group of similar people based on their usage of items? 19 MR. PADMANABHAN: Objection; Rule 611. 20 A. Yes. Now you want I should define from patent 21 '217, or no? 22 Q. (BY MR. PLAIL) I don't think there's anything 23 to differentiate, so let's go to paragraph -- 24 MR. PADMANABHAN: Let him finish his 25 answer. If he needs --</div>	<div>Page 188</div> <div>1 MR. PLAIL: He doesn't have -- no question 2 was pending. 3 And that's a speaking objection. Please 4 stop. 5 MR. PADMANABHAN: You can't stop him from 6 finishing his record. 7 If you need to say something, you can -- 8 MR. PLAIL: Yes, I can. 9 MR. PADMANABHAN: No, can't. 10 MR. PLAIL: I can. 11 MR. PADMANABHAN: Absolutely you cannot. 12 MR. PLAIL: There was no question pending. 13 (Cross talk.) 14 THE REPORTER: Guys, guys, one at a time. 15 MR. PADMANABHAN: He was going to -- 16 MR. PLAIL: There was no question pending. 17 (Cross talk.) 18 MR. PLAIL: Let's go off the record. 19 THE REPORTER: Is it okay to go off the 20 record? 21 MR. PADMANABHAN: Yes. 22 (Off the record 2:48 p.m. to 3:02 p.m.) 23 Q. (BY MR. PLAIL) Let's go to paragraph 1 of 24 Dumais. 25 A. Dumais, right?</div>

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<p>1 Q. Uh-huh.</p> <p>2 A. Paragraph 1?</p> <p>3 Q. Paragraph 1, yeah.</p> <p>4 A. Okay.</p> <p>5 Q. So it's discussing -- in paragraph 1, it says,</p> <p>6 "In one specific example, an e-mail inbox can be</p> <p>7 searched for previously received e-mails based on a</p> <p>8 keyword that links a search tool to respective e-mails</p> <p>9 that are associated with the term, where the term is</p> <p>10 linked to the actual contents of sorted e-mails --</p> <p>11 stored e-mails" [as read].</p> <p>12 Do you see that?</p> <p>13 A. Yeah. Okay, so let me read.</p> <p>14 Q. Okay.</p> <p>15 (Witness reviewed document.)</p> <p>16 A. Okay.</p> <p>17 Q. So here, Dumais is discussing ways to sort</p> <p>18 junk e-mail out of more relevant e-mails. Is that</p> <p>19 right?</p> <p>20 MR. PADMANABHAN: Objection; Rule 611.</p> <p>21 A. So what are you saying?</p> <p>22 Q. (BY MR. PLAIL) Here, Dumais is discussing</p> <p>23 ways of sorting more relevant e-mails out of junk</p> <p>24 e-mails. Is that right?</p> <p>25 A. No. Junk -- here, we're looking for the junk,</p>	<p>1 Q. Right. So with --</p> <p>2 A. Dumais would not be able to get -- give you</p> <p>3 the e-mail messages.</p> <p>4 Q. You testified without a query, you cannot do</p> <p>5 anything?</p> <p>6 A. With Dumais.</p> <p>7 Q. Can you look back at Claim 1 of the '217</p> <p>8 patent?</p> <p>9 A. Yeah.</p> <p>10 Q. Can you please show me which limitations</p> <p>11 indicate that a search query cannot be used with</p> <p>12 Claim 1?</p> <p>13 MR. PADMANABHAN: Objection; Rule 611 and</p> <p>14 613.</p> <p>15 A. So your question is -- can you show me</p> <p>16 limitations where search query is not used?</p> <p>17 Q. (BY MR. PLAIL) Can you show me which</p> <p>18 limitations indicate that a search query cannot be used</p> <p>19 with the relevant system in the '217 patent?</p> <p>20 MR. PADMANABHAN: Objection; Rule 611.</p> <p>21 A. All the claims or just Claim 1?</p> <p>22 Q. (BY MR. PLAIL) Let's just focus on Claim 1</p> <p>23 for right now.</p> <p>24 (Witness reviewed document.)</p> <p>25 MR. PADMANABHAN: Objection; Rule 613.</p>
Page 190	Page 192
<p>1 let's say, in this example. So we just want to retrieve</p> <p>2 the e-mail messages that are associated with the junk,</p> <p>3 that's it. So the query needs to be there. Without</p> <p>4 query -- let's say you are getting e-mail messages</p> <p>5 where -- and you want to see all the e-mail messages.</p> <p>6 So this system will not work in that</p> <p>7 setting. Because you have to submit the query, then you</p> <p>8 will get the relevant -- relevant messages and so on.</p> <p>9 So query's an important part for Dumais. Without query,</p> <p>10 you cannot do anything.</p> <p>11 Q. Okay. So, in Dumais, you have a query for the</p> <p>12 term "John," right? And that retrieves e-mails that</p> <p>13 include the word "John"?</p> <p>14 A. Yes.</p> <p>15 Q. Verbal answer.</p> <p>16 A. That -- that includes John, yeah.</p> <p>17 Q. And then those e-mails are ranked according to</p> <p>18 the algorithm in Dumais?</p> <p>19 A. Yeah, based on the Dumais -- the -- that</p> <p>20 particular user customization -- based on the</p> <p>21 customization. That way the e-mail will be present in a</p> <p>22 certain order.</p> <p>23 Q. Okay. You said --</p> <p>24 A. But I tried to emphasize that if there is no</p> <p>25 query, then Dumais would not work.</p>	<p>1 A. I see that Claim 3 talks about -- which is a</p> <p>2 dependent claim -- talks about the search model where</p> <p>3 the search is gray [phonetic].</p> <p>4 Q. (BY MR. PLAIL) So you're saying the claim can</p> <p>5 be used to search -- strike.</p> <p>6 So you're saying the claim can be used to</p> <p>7 sort the results of a search query?</p> <p>8 A. No. I said that -- I said Claim 1 doesn't use</p> <p>9 the search.</p> <p>10 Q. So Claim 1 cannot use a search?</p> <p>11 A. I don't say it cannot use. I'm saying the</p> <p>12 language they use, there's no search keyword.</p> <p>13 Q. Okay. So Claim 1 can use a search?</p> <p>14 A. Claim 1 -- Claim 1 can work without search,</p> <p>15 with the search, both.</p> <p>16 Q. Okay.</p> <p>17 A. That's why they do not explicitly mention</p> <p>18 here.</p> <p>19 Q. All right. So that Dumais uses a search is</p> <p>20 irrelevant?</p> <p>21 A. For Dumais, yes, search query is required to</p> <p>22 function. There's one of the --</p> <p>23 Q. And for Claim 1, a search query can be used?</p> <p>24 A. For Claim 1, without search, you can work</p> <p>25 also. All the claims will be valid without search.</p>

<p>Page 193</p> <p>1 Q. But for Claim 1, you can also use a search?</p> <p>2 A. Yes.</p> <p>3 Q. Can you go to column 2, line 17, of the '217</p> <p>4 patent?</p> <p>5 A. Line 2? Column 2 or line --</p> <p>6 Q. I'm sorry, column 2, line 17.</p> <p>7 A. Column 2, line 17?</p> <p>8 Q. Yes. It says, "Figure 1A shows a traditional</p> <p>9 prior art e-mail system" [as read].</p> <p>10 A. Right.</p> <p>11 Q. Do you see that?</p> <p>12 A. [Nods head.]</p> <p>13 Q. So the '217 patent admits that e-mail systems</p> <p>14 were known in the prior art?</p> <p>15 A. Where is Figure 1? Okay. Yeah. Yes -- yeah.</p> <p>16 Q. Can you go to line -- can you go to your</p> <p>17 declaration?</p> <p>18 A. Yeah.</p> <p>19 Q. Go to 128.</p> <p>20 A. 120...?</p> <p>21 Q. -28. It says there that, "Another difference</p> <p>22 between Dumais and the '217 patent is in the way the</p> <p>23 groups are formed. In Dumais, the group is not</p> <p>24 predefined, but formed based on similarity measures,</p> <p>25 such as correlation coefficients, vector-based</p>	<p>Page 195</p> <p>1 Q. Okay.</p> <p>2 A. So that is one of the distinction we tried to</p> <p>3 make here.</p> <p>4 And there is -- if you see the patent</p> <p>5 '217, that is very nice the way they describe it. So in</p> <p>6 the column 45 and at the end, they have a -- from 45 row</p> <p>7 to 65, they have a metrics. And they calculate -- from</p> <p>8 there, they calculate the correlation in column 46 from</p> <p>9 row 10 to 15.</p> <p>10 So there, you can see User A's -- if I</p> <p>11 want to choose top two user cognate user for User A and</p> <p>12 top two cognate user for User B, what does it say in the</p> <p>13 correlation metrics? It says User A, that the most</p> <p>14 related one will be User D and User B. And for User B,</p> <p>15 the mostly cognate user will be -- will be User D and</p> <p>16 User C, because we consider only two cognate users.</p> <p>17 So that's the -- you can see here they're</p> <p>18 not symmetric in patent '217.</p> <p>19 Q. So you're saying, then, that in the '217</p> <p>20 patent claims, when you're identifying the --</p> <p>21 A. Cognate. Cognate users.</p> <p>22 Q. -- you're identifying a cognate User A and a</p> <p>23 cognate User B?</p> <p>24 A. For each individual instance, I determine --</p> <p>25 with the first user, I determine the cognate users and</p>
<p>Page 194</p> <p>1 similarity calculations, and statistical Bayesian</p> <p>2 methods" [as read].</p> <p>3 Do you see that?</p> <p>4 A. [Nods head.]</p> <p>5 Q. Verbal answer.</p> <p>6 A. Yes, I saw it.</p> <p>7 Q. Okay. What do you mean "in Dumais, the group</p> <p>8 is not predefined but formed based on similarity</p> <p>9 measures"?</p> <p>10 A. So -- okay, so in Krug, the -- you can define</p> <p>11 the group explicitly. Say --</p> <p>12 Q. We're talking about Dumais.</p> <p>13 A. Right. But in Dumais, you can form the --</p> <p>14 this groups based on the correlation coefficient, vector</p> <p>15 similarity calculation, and then some Bayesian method</p> <p>16 and so on. So this is a standard procedure to form the</p> <p>17 group or apply the calibrated figure.</p> <p>18 But the important part that's missing here</p> <p>19 is, in the patent '217, you -- you -- for each user's</p> <p>20 collaborative -- cognate user group will be different or</p> <p>21 distinct. So let's say there are two users, User A and</p> <p>22 User B, both belong to the same group, according to this</p> <p>23 correlation analysis and so on. But when you calculate</p> <p>24 that cognate user for User A, that will be -- that will</p> <p>25 be maybe entirely different from User B's cognate group.</p>	<p>Page 196</p> <p>1 that is a very strong user to user.</p> <p>2 But when you consider the Dumais and the</p> <p>3 patent Krug, even, they consider some sort of</p> <p>4 correlation analysis. And then they form a group. And</p> <p>5 in this group, everybody will be a part of -- correlated</p> <p>6 or will be cognate users. They don't use cognate user.</p> <p>7 I should not use, but that way they use the</p> <p>8 collaborative filtering.</p> <p>9 Q. And so are you saying that when you're</p> <p>10 identifying a cognate user in the '217 patent, you can't</p> <p>11 identify a group of people that you are cognate to?</p> <p>12 MR. PADMANABHAN: Objection; Rule 611.</p> <p>13 A. In number of -- in number of users, I can</p> <p>14 identify. This end usually few.</p> <p>15 Q. (BY MR. PLAIL) And so this is similar to how</p> <p>16 a group can be defined using similarity measures in</p> <p>17 Dumais?</p> <p>18 MR. PADMANABHAN: Objection.</p> <p>19 A. Usually -- okay, so the group is usually</p> <p>20 whoever belongs to the group. If I say user from --</p> <p>21 based on the grouping, if I find the cognate user, all</p> <p>22 of them will be the part of User A's cognate group,</p> <p>23 User B's cognate group. So, in that case, this will not</p> <p>24 be distinct. It will be symmetrical, because User A and</p> <p>25 User B belong to the same group, right?</p>

<p>Page 197</p> <p>1 But that's a general -- in the Dumais and 2 the group patent, that talks about -- that talk about 3 that way. 4 But in case of patent '217, the user level 5 for each -- for each distinct user, they want to find 6 the cognate users. And they utilize correlation 7 metrics. They show very nicely. They show there for 8 User A, cognate user group will be -- in this case, will 9 be entirely -- will be -- will be different from the 10 User D's -- User B's cognate group. 11 Q. (BY MR. PLAIL) I see. So you're -- 12 A. There might be some overlap, but not 13 necessarily they will be same. 14 Q. You're saying the correlation coefficients 15 here in columns 45 and 46 are how '217 patent goes 16 around determining the cognate -- 17 A. User for each individual user, yeah. Cognate 18 user set for each individual user. 19 Q. Got it. 20 A. That's why -- 21 Q. Let's go on to 137. 22 A. So I -- I really -- that's why I actually give 23 you strength to come up with a better ranking, because 24 that way they figure out a lot of -- selectively choose 25 the cognate users.</p> <p>Page 198</p> <p>1 Q. What do you mean by "selectively choose the 2 cognate users"? 3 A. Because you're doing -- for each -- each 4 users, I'm doing precisely most relevant cognate users, 5 like most relevant user set. 6 Q. But that can be a group of users? 7 A. Yeah. But this group is not, like, 10, 20 8 people. It will be two or three users. 9 Q. And what is the maximum number of people that 10 can be a group of cognate users? 11 A. It is an e-mail messaging system, so I assume 12 that this case it may not be a -- it may be a moderate 13 number. I don't know that part. 14 Q. But so you're not saying the claim requires a 15 certain amount -- you're not saying the claim requires a 16 certain lower limit on the number of cognate people in a 17 group? 18 MR. PADMANABHAN: Objection; 611. 19 A. The -- the patent -- okay, so the -- the claim 20 said -- yeah, we have to find the cognate users and 21 each -- for each users, the -- this cognate group will 22 be distinct or will be not -- will not be exactly the 23 same, because the multiple -- because the multiple 24 users, those are -- may belong to a particular group. 25 Q. (BY MR. PLAIL) So if there's 10 people who</p>	<p>Page 199</p> <p>1 are cognate, that's okay? 2 A. That's possible, but the -- the group may be 3 100 people from a group. 4 Q. What about 1,000? 5 A. What about the 1,000 people will form the 6 group? 7 Q. Yeah. 8 A. Yeah, but if you have millions of users, then 9 that case, thousand makes sense. But if you have a 10 personal communication system for organization system, 11 you may only have 100, 200 users, right, e-mail users. 12 So in that case, the cognate group will be number of -- 13 for each distinct user, cognate user set will be 14 smaller, my interpretation. 15 Q. How small does a group need to be, to be a 16 cognate group? 17 A. That study request -- that is not disclosed 18 here. 19 Q. Okay. So you're saying the claim doesn't have 20 any specific limits on the size of a cognate group? 21 A. No, I'm not saying that. I'm saying it 22 depends on the -- the problems, organization, those type 23 of setting also. 24 Q. So the claim -- 25 A. The claim they're trying to solve.</p> <p>Page 200</p> <p>1 Q. So this is kind -- 2 A. And you cannot assume that the number of user 3 will be -- the number of user will be obvious, it will 4 be larger than the number of groups, number of users, 5 distinct users. 6 Q. Okay. It's -- this is a yes-or-no question, 7 Dr. Khan. 8 A. And then -- 9 Q. And so -- 10 A. Because it depends on the scenario. It's 11 not -- I cannot answer yes, and then -- 12 Q. In the scenario claims of the '217 patent, how 13 many people can be in a cognate group? 14 MR. PADMANABHAN: Objection; 611. 15 A. The group number of -- in the group, number 16 user will be larger than the n cognate -- n. 17 Q. (BY MR. PLAIL) N? 18 A. Uh-huh. And this n depends. 19 Q. All right. So a person of skill would need to 20 do an empirical study to determine how large a cognate 21 group is? 22 MR. PADMANABHAN: Objection; Rule -- Rule 23 611 and 613. 24 A. No. They need to do more experiment -- 25 extensive experiment and play with these numbers and do</p>
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<p style="text-align: right;">Page 201</p> <p>1 the -- try to understand all of this statistical methods 2 and then find it the right -- it's not trivial. 3 Q. (BY MR. PLAIL) So it's not trivial to 4 determine how large a cognate group is? 5 MR. PADMANABHAN: Objection; Rule 611. 6 A. How large is the cognate group? 7 MR. PADMANABHAN: And Rule 613. 8 A. So what is the question? How large? It is 9 not? 10 Q. (BY MR. PLAIL) You said they need to do more 11 extensive experiment and play with the numbers and do 12 the -- try to understand all the statistical -- and then 13 find in the -- it's not trivial. I'm asking to confirm 14 it's not trivial to determine how large a cognate group 15 is? 16 MR. PADMANABHAN: Objection; Rule 611 and 17 613. 18 A. I'm saying it depends on the problem setting, 19 first of all. And then -- and then it also depends on 20 the data set, because it's sensitive to the -- this is 21 the parameters you have to play with that. 22 Q. (BY MR. PLAIL) So if we go to Claim 1, can 23 you point me at which claim limitation indicates the 24 parameters that a POSA would need to look at in order to 25 determine the size of the cognate group?</p>	<p style="text-align: right;">Page 203</p> <p>1 answered -- Rule 611. 2 A. No. 3 Q. (BY MR. PLAIL) Can we go to paragraph 137 of 4 your report? Starting at the hyphen, "i.e., the 5 desirability of identifying a second user that received 6 the same piece of content as the first user." 7 Do you see that section? 8 A. Uh-huh, yeah. 9 Q. What do you mean by "desirability"? 10 A. So in patents -- in this patent '217, we talk 11 about identifying one of the limitations, right? And so 12 there, I don't see anything about for the second user 13 that received the same piece of content as the first 14 user. 15 That type -- there is no discussion about 16 how to do -- satisfy this condition. The condition is 17 need to satisfy the collaborative filtering condition; 18 that means the same electronic messages. And at the 19 same time, there needs to be -- they need to receive the 20 same electronic message and the cognate to the users. 21 Cognate to the users in some group, to 22 some extent, calibrating can fulfill it, but there's no 23 guarantee that this identifying users -- or the second 24 users would be the -- would be the recipient of the same 25 electronic message content.</p>
<p style="text-align: right;">Page 202</p> <p>1 MR. PADMANABHAN: Objection; Rule 611 and 2 401 to 403. 3 (Witness reviewed document.) 4 A. No, Claim 1 doesn't say what is the size of 5 the cognate users. It doesn't say. 6 Q. (BY MR. PLAIL) So there's no specific 7 requirement in Claim 1 as to the size of the cognate 8 users? 9 A. Correct. But in the writing and in the 10 specification it was -- yeah, it was clear they 11 demonstrated how they calculated all of this. 12 Q. But it's not required by the claim? 13 A. Claim 1 doesn't say that, yeah. 14 Q. So it's not required by the Claim 1? 15 A. No. Claim 1 doesn't say that explicitly. 16 That is -- 17 Q. Dr. Khan, you are aware that you provided 18 testimony on the meaning of Claim 1? 19 A. Right. 20 Q. So when I'm asking does Claim 1 require a 21 specific number of people in the cognate group, I need 22 more than "it doesn't say it explicitly." 23 Does Claim 1 require a specific number of 24 people in the cognate group? 25 MR. PADMANABHAN: Objection; asked and</p>	<p style="text-align: right;">Page 204</p> <p>1 Q. So you're saying that Dumais needs to express 2 a desirability to identify a second user? 3 (Witness reviewed document.) 4 A. I'm saying Dumais -- as we -- as you pointed 5 out, Dumais talks about collaborative filtering, right, 6 to create the profile and so on. So -- and in this 7 '217, we talk about cognate users for this -- in order 8 to identify the second user, the second user needs to be 9 cognate to the first user. And at the same time, they 10 need to receive the same electronic message content. So 11 these two conditions simultaneously need to satisfy. 12 And calibrate and filter only the 13 condition, not the two conditions together. So that's 14 the identifying the -- that way -- because we want same 15 content as the first user, and then the first -- these 16 two users are cognate to each other, right? The 17 first -- second user is cognate to the first user, 18 right? So that -- we need to satisfy -- these two are 19 not satisfied by the collaborative filtering. 20 Q. (BY MR. PLAIL) Is it your understanding that 21 a reference needs to disclose the desirability of 22 something in order to disclose the invention? 23 MR. PADMANABHAN: Objection; Rule 611. 24 A. Sorry, what did you say? Desirability? 25 Q. (BY MR. PLAIL) You used the word</p>

<p style="text-align: right;">Page 205</p> <p>1 "desirability" here.</p> <p>2 A. Right, yeah.</p> <p>3 Q. Is it your understanding that the prior art</p> <p>4 needs to disclose the desirability of a claim element</p> <p>5 and not just disclose it?</p> <p>6 A. So I'm trying to emphasize that this is one of</p> <p>7 the important condition, that two -- two constants needs</p> <p>8 to satisfy simultaneously. That is absent in Dumais and</p> <p>9 as well as in the Krug patent.</p> <p>10 Q. That's nonresponsive to my question.</p> <p>11 A. Okay.</p> <p>12 Q. Is it your understanding that the prior art</p> <p>13 needs to disclose the desirability of a claim element?</p> <p>14 A. What claim element? The --</p> <p>15 Q. Of -- is it your understanding the prior art</p> <p>16 needs to disclose the desirability of a claim element?</p> <p>17 A. Okay, let me phrase it... Can you rephrase</p> <p>18 it, the question?</p> <p>19 Q. You used the word "desirability."</p> <p>20 A. Right, yeah.</p> <p>21 Q. You say Dumais doesn't disclose the</p> <p>22 desirability.</p> <p>23 A. Of identifying the second user.</p> <p>24 Q. Is it your opinion that the prior art, Dumais,</p> <p>25 needs to disclose the desirability of identifying?</p>	<p style="text-align: right;">Page 207</p> <p>1 But the important part is two condition</p> <p>2 need to satisfy simultaneously.</p> <p>3 Q. Okay. So you're saying that the '217 patent</p> <p>4 Claim 1 requires that --</p> <p>5 A. The second user --</p> <p>6 Q. Hold on, let me finish my question.</p> <p>7 A. Sorry.</p> <p>8 Q. You're saying that the '217 patent Claim 1</p> <p>9 requires two conditions that need to be satisfied?</p> <p>10 A. Simultaneous.</p> <p>11 Q. One is that the cognate set is asymmetric and</p> <p>12 the other is that they are a recipient?</p> <p>13 MR. PADMANABHAN: Objection; Rule 611.</p> <p>14 A. They need to be cognate.</p> <p>15 Q. (BY MR. PLAIL) Okay.</p> <p>16 A. The first -- second is they need to be cognate</p> <p>17 to the first user. And then they need to -- the second</p> <p>18 user need to receive the same electronic message or</p> <p>19 content.</p> <p>20 Q. So the '217 patent is more restrictive because</p> <p>21 it requires both of those things?</p> <p>22 A. Right.</p> <p>23 Q. And the collaborative filtering only goes to</p> <p>24 the cognate part of it?</p> <p>25 A. Right.</p>
<p style="text-align: right;">Page 206</p> <p>1 A. Yes.</p> <p>2 Q. Let's go to 143. If you look at the third</p> <p>3 sentence of 143, it says, "This is because cognate users</p> <p>4 in the '217 patent are more restrictive than generic</p> <p>5 collaborative filtering" [as read].</p> <p>6 Do you see that?</p> <p>7 A. Yeah.</p> <p>8 Q. What do you mean by "more restrictive"?</p> <p>9 A. I'm going to answer...</p> <p>10 (Witness reviewed document.)</p> <p>11 A. Okay. So if you see the patent '217, they</p> <p>12 have multiple claims, and every claim requires the</p> <p>13 system identify a second cognate user that is a</p> <p>14 recipient of the piece of electronic content. And at</p> <p>15 the same time, that is -- that is also the cognate to</p> <p>16 the first user, right? So two condition needs to</p> <p>17 satisfy simultaneously. And -- and so that's why the</p> <p>18 patent '217 is more restrictive. That's what I tried to</p> <p>19 say here.</p> <p>20 Q. Okay. So it's more restrictive because it</p> <p>21 requires a --</p> <p>22 A. Two condition need to satisfy. Cognate set,</p> <p>23 and then inside the cognate set, it has to be asymmetric</p> <p>24 as I told you before, the end number of users you have</p> <p>25 to select. But that's not here important.</p>	<p style="text-align: right;">Page 208</p> <p>1 Q. All right. So collaborative filtering is --</p> <p>2 shows that they're cognate, but not that they're both</p> <p>3 recipients. Is that right?</p> <p>4 A. Right. They're not -- there's no condition to</p> <p>5 receive the same electronic message.</p> <p>6 Q. And what do you mean, then, when you said that</p> <p>7 the claim required the cognate users to additionally be</p> <p>8 asymmetric?</p> <p>9 MR. PADMANABHAN: Objection; Rule 611.</p> <p>10 A. Okay. So that -- as I told you, let's say I</p> <p>11 want to find User A's cognate group and User B's cognate</p> <p>12 group, right? So I said User A may have -- B and C</p> <p>13 might be in the cognate group of User A, and User B's</p> <p>14 cognate group may be C and D, which is different.</p> <p>15 Q. (BY MR. PLAIL) Okay. And that's required</p> <p>16 under Claim 1?</p> <p>17 MR. PADMANABHAN: Objection; Rule 611.</p> <p>18 A. No.</p> <p>19 Q. (BY MR. PLAIL) Okay. It's not required under</p> <p>20 Claim 1?</p> <p>21 MR. PADMANABHAN: Rule 611.</p> <p>22 A. It doesn't say very explicitly there, but</p> <p>23 somewhere in the specification, it was mentioned.</p> <p>24 Q. (BY MR. PLAIL) Is it required under Claim 1?</p> <p>25 MR. PADMANABHAN: Rule 611 and Rule 403.</p>

<p style="text-align: right;">Page 209</p> <p>1 You've asked -- you've already treaded this ground. 2 MR. PLAIL: Speaking objection. I'm going 3 to note for the record that, again, counsel is coaching 4 the witness. 5 (Witness reviewed document.) 6 A. No; it doesn't say in Claim 1, no. In 7 Claim 1, no. But you want I should take a look in other 8 claims? 9 Q. (BY MR. PLAIL) Claim 1, the asymmetric is not 10 required? That's all that matters here. 11 A. However -- yeah, but in that case, it needs to 12 satisfy two condition in Claim 1. That is very clearly 13 said, cognate and same message. 14 Q. And neither of those conditions is the 15 asymmetric cognate group? 16 A. No, here we don't talk about the cognate 17 group, how -- what will be -- yeah, that symmetrical and 18 asymmetric, we're not talking about that here. 19 Q. Okay. 20 A. But I want to make sure that the two 21 conditions are met. That is clearly said in Claim 1. 22 Q. I'm going to hand you what has already been 23 marked as Exhibit 1007. I'm also going to go ahead and 24 hand you what has already been marked as Exhibit 1008. 25 Do you recognize Exhibit 1007?</p>	<p style="text-align: right;">Page 211</p> <p>1 Q. (BY MR. PLAIL) That says "from"? 2 A. Okay. I saw it, yeah. 3 Q. And you understand that these are e-mails that 4 were sent from a sender? 5 A. That's correct. 6 Q. If we go to column 52 of Kircher. 7 MR. PADMANABHAN: Paragraph? 8 MR. PLAIL: Yeah, sorry, paragraph. 9 Q. (BY MR. PLAIL) Here, it's describing part of 10 that figure. It says, "In column 48, the numerical, 11 value corresponds to an expected user action in regard 12 to the e-mail message, while the numbering column in 47 13 indicates the ranking of the e-mail" [as read]. 14 A. Yeah. 15 Q. So Kircher calculates two different types of 16 rankings; one is the numerical value corresponding to 17 the expected user action and the second is the ranking 18 of the e-mail? 19 (Witness reviewed document.) 20 A. Okay. I -- I think the 48 is a user action, 21 right? User -- some categorization or something. Just 22 give me one minute. 23 (Witness reviewed document.) 24 A. "It has four categories. The recipient is 25 expected to read, reply, or save the e-mail, expected to</p>
<p style="text-align: right;">Page 210</p> <p>1 A. Yes. 2 Q. It's the Kircher prior art reference, correct? 3 A. Uh-huh, yes. 4 Q. Do you recognize Exhibit 1008? 5 A. Yeah; Krug, right? 6 Q. Yes. It's the Krug prior art reference, 7 correct? 8 A. Uh-huh. 9 Q. Correct? 10 A. Yes, correct. 11 Q. Can you turn to Figure 3B of Kircher? What is 12 shown in Figure 3B? 13 A. So some e-mail messages and the sender lists 14 and then the ranking, those type of things, right? It's 15 a ranking score. 16 Q. And the ranking score is 47, correct? 17 A. The -- I think so, yeah. 18 Q. And this is an e-mail inbox? 19 A. Yeah; for a particular user's e-mail inbox, 20 yes. 21 Q. And it's sorted according to the ranking 22 score? 23 A. Yes, that's correct. 24 Q. And there's a column there, "from," right? 25 MR. PADMANABHAN: Column what?</p>	<p style="text-align: right;">Page 212</p> <p>1 read and receive the e-mail. The recipient is expected 2 to only save the e-mail. Recipient is expected to 3 delete the e-mail without reading it" [as read]. 4 Q. And which paragraph of your declaration are 5 you reading from? 6 A. 1 of 6. 7 Q. And so column 48 relates to that action 8 category that you're referring to? 9 A. I have to double-check. Yeah; probably, yeah. 10 And the -- the ranking score comes with the 47, yeah. 11 Q. And so there's a separate ranking score 47? 12 A. No, for -- okay. 13 (Witness reviewed document.) 14 A. Okay. So, yeah, user action, basically, 48. 15 Q. Right. And there's a separate ranking score 16 47? 17 A. 47 is a two-ranking score. 18 Q. Okay. And so those are two different ranking 19 scores -- strike that. 20 Those are two different values that 21 Kircher calculates to determine the relevance of an 22 e-mail? 23 A. Correct. 24 Q. And do you agree that Kircher is an e-mail 25 system?</p>

<p style="text-align: right;">Page 213</p> <p>1 A. Correct.</p> <p>2 Q. Can you go to paragraph 2?</p> <p>3 A. But it focuses on one particular user inbox,</p> <p>4 though.</p> <p>5 Q. Can you go to paragraph 2 of Kircher?</p> <p>6 A. Kircher? Kircher, paragraph 2, okay.</p> <p>7 Q. Do you see here in paragraph 2 it describes</p> <p>8 how electronic message system traffic has increased</p> <p>9 dramatically in the past 20 years?</p> <p>10 A. You're asking me to -- yes or no, right?</p> <p>11 Q. Yes.</p> <p>12 A. Yes.</p> <p>13 Q. Do you agree with that?</p> <p>14 A. Yeah, I agree with that. Past idea means from</p> <p>15 that time, right?</p> <p>16 Q. 2003.</p> <p>17 A. Yeah.</p> <p>18 Q. If you go down to the last two sentences of</p> <p>19 that same paragraph, Kircher says, "It is not uncommon</p> <p>20 for individuals in a busy work environment to receive</p> <p>21 hundreds of e-mail messages each day" [as read].</p> <p>22 Do you agree with that?</p> <p>23 A. I agree.</p> <p>24 Q. "Unfortunately, many of these messages are</p> <p>25 spam, unsolicited messages from strangers, or relatively</p>	<p style="text-align: right;">Page 215</p> <p>1 this patent '217.</p> <p>2 Q. So Kircher and the '217 patent are in the same</p> <p>3 field?</p> <p>4 A. Yes.</p> <p>5 Q. And they address the same types of problems?</p> <p>6 A. I will -- okay, so Kircher focuses on one</p> <p>7 particular user's, the recipient inbox, how to manage</p> <p>8 it, how to order it.</p> <p>9 And patent '217 talks about for an</p> <p>10 organization, you have many users NS how to deal with</p> <p>11 those users, the sender importancy, then the local</p> <p>12 relevancy, global importancy, those type of things.</p> <p>13 That's the content relevancy.</p> <p>14 And Kircher never talks about the</p> <p>15 collaborative filtering at all here.</p> <p>16 Q. And just to go back to my question, they are</p> <p>17 attempting to address the same types of problems,</p> <p>18 correct?</p> <p>19 A. Yes. Similar problem, yeah.</p> <p>20 Q. Can you go to paragraph 40?</p> <p>21 A. Kircher, right?</p> <p>22 Q. Yes. It says, "As those of ordinary skill</p> <p>23 will recognize, the term 'fuzzy logic' refers to a</p> <p>24 mathematical technique for dealing with imprecise data</p> <p>25 and problems having multiple acceptable solutions" [as</p>
<p style="text-align: right;">Page 214</p> <p>1 low priority and of little interest to the recipient"</p> <p>2 [as read].</p> <p>3 Do you agree with that?</p> <p>4 A. Yes.</p> <p>5 Q. If you go to paragraph 10, Kircher is</p> <p>6 describing a method for processing electronic messages</p> <p>7 to rank messages based on the probable importance to the</p> <p>8 recipient. Do you see that?</p> <p>9 A. Yeah, I see it.</p> <p>10 Q. So Kircher is attempting to solve the problem</p> <p>11 of having too much unsolicited e-mail messages by</p> <p>12 ranking the messages according to the probable</p> <p>13 importance?</p> <p>14 A. Yeah, for a particular inbox folder, yes.</p> <p>15 Q. Okay. What is the field of endeavor for the</p> <p>16 '217 patent?</p> <p>17 A. Sorry, what is your question?</p> <p>18 Q. What is the field of endeavor for the '217</p> <p>19 patent?</p> <p>20 A. What is endeavor?</p> <p>21 Q. What is the field of the '217 patent?</p> <p>22 A. Oh, the field. So it talks about electronic</p> <p>23 messaging system, personal communication, right, message</p> <p>24 sent from the sender to the users. So probably both of</p> <p>25 them address the similar problem, right, Kircher and</p>	<p style="text-align: right;">Page 216</p> <p>1 read].</p> <p>2 Do you agree with that?</p> <p>3 A. So their case, they got the score, and then</p> <p>4 from there, they want to determine what actions user</p> <p>5 will take among these four actions. And then they</p> <p>6 will -- using fuzzy logic, they will come up with</p> <p>7 this -- basically, it's decertification. That way they</p> <p>8 will say that either the user will do this action,</p> <p>9 Action 1, Action 2, Action 3, Action 4. So that will be</p> <p>10 shown to the user.</p> <p>11 So, in this case -- so what is your</p> <p>12 question? Your question is --</p> <p>13 Q. It says that, "Those of ordinary skill in the</p> <p>14 art will recognize the term 'fuzzy logic' refers to a</p> <p>15 mathematical technique for imprecise data and problems</p> <p>16 having multiple acceptable solutions" [as read].</p> <p>17 Do you agree with that statement?</p> <p>18 A. Yeah; I'm fine with that, yeah.</p> <p>19 Q. What is fuzzy logic?</p> <p>20 A. You know, the logic, usually binary logic 01,</p> <p>21 right?</p> <p>22 Q. Yes.</p> <p>23 A. That's called -- what is it called? Binary</p> <p>24 logic. But fuzzy logic is where the definition is not</p> <p>25 straightforward, so you can -- it's imprecise.</p>

<p>Page 217</p> <p>1 So, in this case, what they're doing in 2 patent -- this Kircher patent, they utilize the content 3 relevancy, they utilize the sender importancy, and then 4 they also utilize the personal importancy. And for each 5 of this, they have a rule, and those rules are defined 6 on, let's say, from the e-mail message contents 100 bad 7 words. They have a bad word distribution list in there. 8 So then they -- they will give some score. That way 9 they come up with a score for -- based on the content, 10 based on the sender importancy, based on the personal 11 information. 12 And then they combine using fuzzy logic. 13 Then they combined together using the fuzzy logic. And 14 then this will be the unified score. And based on that, 15 they will give the recommendation. 16 And then they also determine -- user will 17 give the feedback after that. If the feedback agrees 18 with the -- with the -- feedback agrees with the 19 prediction, then they will be basically happy and then 20 they will not update that much, the fuzzy logic. 21 THE REPORTER: I'm sorry, then they will 22 not...? 23 A. They will not update the fuzzy -- fuzzy logic 24 has a bunch of rules. And then those rules has a 25 weight. So weight will not be updated because you are</p> <p>Page 218</p> <p>1 happy with that. 2 But if there is a -- the feedback they're 3 giving is -- is -- and the prediction is entirely 4 different from your feedback, so then we need to update 5 the weight. That's the main idea of this patent. 6 Q. (BY MR. PLAIL) So going back to my question, 7 what is fuzzy logic? Not what's the main idea of this 8 patent. What is fuzzy logic? 9 A. Fuzzy logic talks about impreciseness. So you 10 want to know an example or something? So let's say you 11 are going to apply for a credit card, right? And credit 12 card company will check your score. And the score is, 13 let's say, 750. Your score is -- the card company has a 14 binary rule. If your credit score is above 750, your 15 credit score is good, you should get a credit card. If 16 below 750, your credit card will be declined. So that's 17 the binary way the -- binary logic of -- binary system, 18 that's the way the system works. 19 But in fuzzy logic -- because this is very 20 rigid. So if your score is 750 or 749 or 740, you will 21 not get the credit card, right? But if somebody has a 22 score 300, still not get the credit card. But you 23 should be considered with a certain angle -- with a 24 certain variation. 25 So fuzzy logic will come up with a -- in</p>	<p>Page 219</p> <p>1 this case, some sort of fuzziness will be taken into 2 consideration if you are in this border area. So then 3 they will give you some answer by saying that your score 4 is 749, you are -- you should get the credit card with a 5 49 percent, probably, and 51 percent probably should not 6 get it. Something like this. 7 Q. So fuzzy logic is -- 8 A. Fuzzy logic has been widely used, and it was 9 developed Dr. Lotfi Zadeh. 10 THE REPORTER: I'm sorry, it was what? 11 A. Some guy professor, he died. 12 THE REPORTER: I'm sorry, I didn't... -- 13 I'm sorry, I -- 14 A. Some guy, some professor from UC Berkeley 15 developed this. Zadeh, Z-A-D-E-H. 16 Q. (BY MR. PLAIL) And so fuzzy logic is used to 17 analyze larger complex data sets, then? 18 A. I don't want to say that way, but if you have 19 a very good rule, fuzzy logic will work very well. If 20 you have a good rule, if you can catch it. 21 But the problem is in real life, when you 22 have a very large organization or medium organization 23 and you have many, many users and -- and if you cannot 24 come up with a very good rule, fuzzy logic may not -- I 25 mean, it may not do very well.</p> <p>Page 220</p> <p>1 Q. So does fuzzy logic -- strike that. 2 Is fuzzy logic used to analyze large 3 complex data sets? 4 A. Large complex data sets, right? 5 Q. [Nods head.] 6 A. So if you -- if your -- if your data set has a 7 very clear-cut separation, say from the credit card 8 history type of whether you should get a credit card or 9 not, then in that case, it basically -- your data is not 10 very noisy. It's very clean and medium -- then it will 11 work reasonably well, because you can come up with very 12 good rules. 13 But if you cannot come up with very good 14 rules -- because these rules can be handcrafted, and 15 then the weight will be learned. So this fuzzy logic 16 case, this will work when you can come up with very good 17 rules. But if you cannot come up with very good rules 18 or comprehensive rules, then it may not work. That's 19 what I'm saying. 20 Q. You were discussing earlier how the -- in the 21 Kircher patent, it uses fuzzy logic to combine a number 22 of measures. If you look at Figure 11 of the Kircher 23 patent, is that what you were referring to? 24 A. No. I'm referring to Figure 7, Figure 8. 25 Because here, you see the weight will be adjusted. So</p>
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<p style="text-align: right;">Page 221</p> <p>1 how this -- how we come up with this weight. So this is 2 a part of the fuzzy. 3 Q. Okay. If you go to Figure 11 for one second, 4 though. 5 A. Sure. 6 Q. You will see at the top it says, "Set fuzzy 7 measure importance factors." 8 A. Uh-huh. 9 Q. Is that referring to fuzzy logic? 10 A. Yeah; it's also part of the fuzzy logic. 11 Q. Okay. And it looks at various factors within 12 the fuzzy logic, including the sender, the 13 personalization, and the content? 14 A. Right. Right, yeah. 15 Q. And so you agree that the fuzzy logic here is 16 being used to analyze multiple variables? 17 A. Yeah, multiple options, sender importance, 18 observation, and content, yes. 19 Q. And Figure 11 is describing the calculation of 20 the ranking number, right? 21 A. Uh-huh, right. 22 Q. So Kircher is describing using fuzzy logic to 23 calculate a numeric value corresponding to the 24 importance of the e-mail message? 25 A. Right.</p>	<p style="text-align: right;">Page 223</p> <p>1 A. Generally setting, yes. 2 Q. But not in the setting of the claim? 3 A. This -- so the way the claim language is 4 written, you can send from a sender to a user, yeah. 5 Q. So it cannot be a web page? 6 A. Web page? From a sender to a user. No. 7 Q. Can it be a blog post? 8 A. Yeah. 9 Q. Why can it be a blog post? 10 A. It can be a blog post? Let's say the blogger 11 used something in the blogger system your responsive 12 feedback, then the system can be used. But what I'm 13 saying -- 14 Q. What is responsive feedback? 15 A. No responsive feedback? If there's no 16 feedback -- 17 Q. I'm saying -- I'm asking -- you said the -- 18 let's say -- 19 I'm going to read from the record. Let's 20 say your blogger used something in the blogger system, 21 your responsive feedback? 22 A. Your response? 23 Q. You mentioned responsive feedback in the 24 blogger system. What is responsive feedback? 25 A. Okay, so you can think about a Reddit, you</p>
<p style="text-align: right;">Page 222</p> <p>1 Q. And it uses a number of variables to do that, 2 including the importance of the sender, the importance 3 of the content, and the degree of personalization? 4 A. Correct, yeah. 5 Q. Okay. 6 THE WITNESS: So can we take a break 7 sometime? 8 MR. PLAIL: Sure. We can take a break 9 now. 10 (Break taken from 3:57 p.m. to 4:05 p.m.) 11 Q. (BY MR. PLAIL) Can you go back to Claim 1 for 12 a second? Do you see at the very top of Claim 1, it's 13 describing, "A computer-implemented system for 14 determining a relevance score of a piece of electronic 15 content" -- 16 A. Uh-huh. 17 Q. -- "sent from a sender to a user" [as read]. 18 What is a piece of electronic content? 19 A. It can be an e-mail message. 20 Q. What else can it be? 21 A. If an e-mail message has an attachment, it can 22 be in electronic content. 23 Q. Can it be a document? 24 A. Yeah. 25 Q. Can it be a web page?</p>	<p style="text-align: right;">Page 224</p> <p>1 post a lot of comment. You describe your travel 2 experience, and then somebody will give you feedback on 3 that, come up with a response, they reply to a message. 4 So that type of thing I meant, the response. 5 Q. I see. So -- 6 A. In that case, you can say -- you have a 7 sender, you have a receiver -- repplier. 8 Q. And what about a document? 9 MR. PADMANABHAN: So what's the question? 10 MR. PLAIL: I'm going to say speaking 11 objection. 12 MR. PADMANABHAN: I just don't understand 13 the question. 14 MR. PLAIL: You don't have to understand. 15 A. What is the document here? What do you mean 16 by "document"? 17 Q. (BY MR. PLAIL) Can a document be a piece of 18 electronic content? 19 MR. PADMANABHAN: Objection; 611 and 403. 20 A. Document can be electronic content? If a 21 document is a part of the e-mail attachment, yes, and 22 that type of system, this patent '217 would work very 23 well. 24 Q. (BY MR. PLAIL) But only if it's an e-mail 25 attachment?</p>

<p style="text-align: right;">Page 225</p> <p>1 A. Right, e-mail attachment.</p> <p>2 Q. So a PDF that is not an attachment would not</p> <p>3 be a piece of electronic content?</p> <p>4 A. The document can be -- you can think of the</p> <p>5 doc file. You can think about text file, PDF file,</p> <p>6 right, all sorts of file. And then if you include those</p> <p>7 filing in your e-mail attachment, then it's a part of</p> <p>8 the e-mail system. And then that can be taken -- then</p> <p>9 the system can take it -- will work very well with those</p> <p>10 cases.</p> <p>11 Q. Can you turn to Krug? Will you turn to</p> <p>12 paragraph 2 of Krug?</p> <p>13 A. What is the paragraph?</p> <p>14 Q. 2 of Krug. That's Kircher -- oh, wait, no,</p> <p>15 that is Krug. Yeah, Sorry.</p> <p>16 A. Yeah.</p> <p>17 (Witness reviewed document.)</p> <p>18 A. Yeah, so -- go ahead, what is your question?</p> <p>19 Q. It says at the top, "The amount of information</p> <p>20 available on the internet is constantly increasing" [as</p> <p>21 read].</p> <p>22 Do you see that?</p> <p>23 A. Uh-huh.</p> <p>24 Q. Do you agree with that statement?</p> <p>25 A. Yes, sir.</p>	<p style="text-align: right;">Page 227</p> <p>1 A. Right.</p> <p>2 Q. Do you agree that Krug is using a full text</p> <p>3 search engine here?</p> <p>4 A. Yeah; they use multiple search engine in the</p> <p>5 equation they mention.</p> <p>6 Q. Specifically in here, it's discussing a full</p> <p>7 text search engine, correct?</p> <p>8 A. Yeah; multiple search engine, yes; full text,</p> <p>9 yeah. Krug, yeah.</p> <p>10 Q. And it's discussing running text searches on</p> <p>11 available electronic documents. Do you see that?</p> <p>12 A. Okay. Yeah, define objects and documents,</p> <p>13 yeah.</p> <p>14 Q. So it's discussing running text searches on</p> <p>15 available electronic documents, right?</p> <p>16 A. Right.</p> <p>17 Q. So you would -- you understand that Krug is a</p> <p>18 content management system?</p> <p>19 A. I would say it's more an extension of the</p> <p>20 search engine.</p> <p>21 Q. That searches and manages content?</p> <p>22 A. Yeah; for customize for each user, they want</p> <p>23 to present the result in a better ranked way or a better</p> <p>24 way.</p> <p>25 Q. Can you go to paragraph 9?</p>
<p style="text-align: right;">Page 226</p> <p>1 Q. At the bottom of the paragraph, it says, "All</p> <p>2 too often, the simple similarity measure results in the</p> <p>3 user being presented with a large number of useless</p> <p>4 documents in the content of which the search term appear</p> <p>5 more or less randomly, but the topic of which does not</p> <p>6 match the user expectations" [as read].</p> <p>7 Do you see that?</p> <p>8 A. Let me read it.</p> <p>9 (Witness reviewed document.)</p> <p>10 A. Yeah, okay.</p> <p>11 Q. Do you agree with that statement?</p> <p>12 A. Yeah, I agree.</p> <p>13 Q. So one of the problems that Krug is attempting</p> <p>14 to solve is that a large number of useless documents</p> <p>15 appear within a search result that don't match the</p> <p>16 user's expectations?</p> <p>17 A. Yeah; from that writing, yes.</p> <p>18 Q. If you look at the second sentence of</p> <p>19 paragraph 2, it says, "In general, the search for</p> <p>20 specific content is carried out using a search engine,</p> <p>21 using a full text method that analyzes the text of the</p> <p>22 available electronic documents by evaluating the</p> <p>23 position, format, and number of search terms in the</p> <p>24 document, and rates the document in terms of the</p> <p>25 relevance to the search query" [as read].</p>	<p style="text-align: right;">Page 228</p> <p>1 A. Uh-huh.</p> <p>2 Q. It says in the second sentence, "For example,</p> <p>3 it may be possible that by pressing a button, the user</p> <p>4 will be sent further information about the object or the</p> <p>5 article described, or that the seller of the article</p> <p>6 will contact the user" [as read].</p> <p>7 Do you see that?</p> <p>8 A. Uh-huh.</p> <p>9 Q. It goes on to say, "Furthermore, an action</p> <p>10 performed in relation to an object can send a message</p> <p>11 indicating that the user wishes to purchase such an</p> <p>12 article described by the object" [as read].</p> <p>13 A. Right.</p> <p>14 Q. Krug is discussing sending a message there?</p> <p>15 A. Yes, so they're -- if user likes less of</p> <p>16 certain objects and then Krug -- Krug system will send a</p> <p>17 message to the -- to the appropriate owner of the object</p> <p>18 owner by saying that there's some interest.</p> <p>19 Q. "Specifically an action performed in relation</p> <p>20 to the object can send a message" [as read].</p> <p>21 Do you see that?</p> <p>22 A. So you are saying this is -- user will give a</p> <p>23 feedback on the -- or user will give some action or give</p> <p>24 some rating on the object. And then based on this</p> <p>25 rating, let's say the system launches that the user is</p>

<p style="text-align: right;">Page 229</p> <p>1 liking certain things, and then that information will be 2 sent to the owner, right? That's what you're saying? 3 Q. That's -- I'm asking, does an action performed 4 in relation to the object cause the system of Krug to 5 send a message? 6 A. Action? 7 (Witness reviewed document.) 8 A. Yeah. 9 Q. And that message is sent by the system? 10 A. Yeah, it can be -- say, it can -- yes, it will 11 be sent to -- the system will send that message to 12 the -- to the owner by saying that there's some 13 interest. 14 Let's say there's an online system where 15 the articles will be sold, right? So, first, you need 16 to in that system as an owner of some articles. So then 17 you will publish your articles and then people will 18 comment and do the search. And then if the -- if 19 there's interest from a particular user, then that 20 information will be sent to the owner through that 21 system. So at the back end, they have some mechanism to 22 send that information to them, the owner. 23 Q. Okay. Can you go to Figure 6B? 24 A. Figure...? 25 Q. 6B.</p>	<p style="text-align: right;">Page 231</p> <p>1 Q. Intrinsic value. 2 A. Okay. Intrinsic -- two you said. Intrinsic 3 and the other one? Intrinsic value and? 4 Q. My question was: Krug is providing a value 5 for the intrinsic value of each object? 6 A. Who is providing? Sorry. 7 Q. Krug. 8 A. Krug. So this intrinsic value will be 9 provided by the user. The user will give some rating 10 and then how much time spent. Based on that, they will 11 come up with this intrinsic value. So, basically, it's 12 a feedback. 13 User feedback will be taken into 14 consideration. And based on that, they come up with a 15 intrinsic value that you are saying. That is a function 16 of the time spent and the rating. 17 Q. Okay. 18 A. And from there, they calculate the absolute 19 intensity -- intensity values across many users. 20 Q. Okay. And so Box 12 is describing the usage 21 intensity and intrinsic value for an object, but Box 14 22 is describing it for the user, right? 23 A. Uh-huh, yeah. 24 Q. Can we go to Krug 106? 25 A. 106, uh-huh, the equation?</p>
<p style="text-align: right;">Page 230</p> <p>1 A. 6-0. 2 Q. 6B. 3 A. In this one [indicating], right? 4 Q. Yes. 5 A. 6B, okay. The last one. 6 Q. Do you see Box 12 on 6B? 7 A. Yes. 8 Q. Do you see that it describes usage 9 intensity/intrinsic value? 10 A. Yes, I see user plus -- I think absolute 11 intensity also, right? Absolute intensity might be a 12 different place, yeah. 13 Q. And so that Box 12 is listing a number of 14 objects within the system of the -- 15 A. Yeah; those -- those are web pages in this 16 case, yes. 17 Q. Okay. And these web pages have HTML content? 18 A. Correct. 19 Q. And here, Krug is providing a value for the 20 usage intensity for each of the objects? 21 A. Uh-huh. 22 Q. And also providing a value for the intrinsic 23 value of each object? 24 A. What is the first one you said? The second 25 one is intrinsic. What is the first one?</p>	<p style="text-align: right;">Page 232</p> <p>1 Q. Yeah. So this equation in 106 is used to 2 calculate the comparison value for each object for each 3 user in the system, correct? 4 A. Each object for each user, yeah, for at a 5 certain -- after a certain interaction of talking to 6 each other, yeah. After a certain number of iterations, 7 yeah. 8 Q. What do you mean by "certain number of 9 iterations"? 10 A. Because you consider the feedback from the 11 user, right? So there is -- in the equation -- okay, 12 here, they don't put the time. But if you see the 13 M said [phonetic] system interaction means M times user 14 will have an interaction with the system and group 15 feedback after that. They're estimating the relevancy 16 score. 17 Q. I see. 18 A. And if you see in the previous equations, they 19 talk about this time -- I mean, the interaction will be 20 considered also. In 73, 70, various places you'll find 21 it. 22 THE REPORTER: I'm sorry, in the 70...? 23 THE WITNESS: Sorry. 24 A. So you will find it in 71 and -- yeah, 69 -- 25 starts with the 69.</p>

<p>Page 233</p> <p>1 Q. (BY MR. FLAIL) Okay. So going back to 106, 2 though, let's focus on this formula. 3 A. Sure. 4 Q. So this formula includes a number of different 5 variables, right? 6 A. Uh-huh. 7 Q. So you would say this is a multi-variant 8 formula? 9 A. I -- I said it considers multiple functions, 10 multiple values together. And I think they do the 11 weighted one -- 12 Q. Okay. 13 A. -- to combine this -- because the computer -- 14 similarity between the user profile and the object 15 profile. That is the middle -- the distance, DUSJ, the 16 second last in the profile versus object similarity. So 17 that's a distance. And then -- so -- 18 Q. And distance is one of the variables in the 19 equation? 20 A. Yeah. And then they plug in multiple 21 intrinsic value, absolute intrinsic value, then they 22 consider also the group and combine all of this together 23 based on the weight -- 24 Q. Okay. 25 A. -- and come up with the one score.</p> <p>Page 234</p> <p>1 Q. All right. And so this is a 2 multiple-variable equation to determine a singular 3 score? 4 A. Yeah, multiple factors are here, yeah. It 5 focuses on the object, yeah. And the one important 6 point you have to remember here, they utilize the -- the 7 GRM(k). And GRM(k) is the priority of an object. That 8 will come from the multiple search engine. And each 9 search engine will give you some ranking of the object, 10 plus the weight. 11 So this, too, will be combined together. 12 If you extend search engine, you will get 10 scores, 13 plus each has its weight. So you will combine them and 14 come up with a one score and plug in here. So there 15 is -- this approach heavily relies on the search engine, 16 also. 17 Q. So one of the variables involves search 18 engines? 19 A. Right; but doesn't probably -- yeah, okay. 20 Q. So variable HAK is the action equivalence of 21 the object, right? 22 A. [Nods head.] 23 Q. And the action equivalence of the object is 24 based on the user actions, right? 25 A. Yes. You can think of it as popular items,</p>	<p>Page 235</p> <p>1 yeah. 2 Q. And that's based off of the actions of the 3 user and the actions of the group of the users, right? 4 A. Does it say here? 5 Q. Go to paragraph 100 -- sorry, if you go to -- 6 A. The next one? 7 (Witness reviewed document.) 8 A. Yeah, highest user intensity. 9 Q. So it takes into account the actions of the 10 user and the actions of a group of users, right? 11 A. It says -- yeah, the reference group -- I 12 assume the reference group can be a singular or 13 community also, right? Yeah. 14 Q. So if you go to 110, actually, it says there 15 that it can take into account the aggregate usage 16 intensity for objects of any group in the collective 17 action of -- 18 A. 110? 19 Q. Yes. 20 A. Okay, yeah. 21 Q. And so this is describing how Krug accounts 22 for collaborative user actions when calculating the 23 comparison value? 24 A. There's another formula, if you see a WMCK, 25 the intrinsic value of -- of any group -- user group for</p> <p>Page 236</p> <p>1 the object. 2 Q. I wasn't asking about the intrinsic value. I 3 was asking about the comparison value. This section of 4 Krug is describing -- 5 (Cross talk.) 6 Q. This section of Krug is describing how Krug 7 accounts for the collaborative user actions when 8 calculating the comparison values. 9 A. This comparison value will be equivalent to 10 the collaborative filtering. Is that what you're 11 saying -- asking? 12 Q. No, not equivalent. 13 A. Then what are you asking? 14 Q. Part of it. 15 A. Okay. So this equation, GRM(k), considers 16 WMCK, which is the group intrinsic value, and also 17 action equivalency. So this may contribute -- yeah, may 18 contribute, cover some of the -- 19 Q. So -- 20 A. -- collaborative filtering values, yeah. 21 Q. Okay. So Krug accounts for the collaborative 22 filtering values? 23 A. Yeah. But their collaborative filtering is 24 slightly different, because they go by the -- each 25 group, they come up with one unified score.</p>
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<p style="text-align: right;">Page 237</p> <p>1 So let's say I have 100 groups, and each</p> <p>2 group will have a -- let's say Group 1 has 10 users</p> <p>3 belong to this group. So all of the users will have the</p> <p>4 same collaborative filtering score. But in case of</p> <p>5 patent '217, for each users will have a different,</p> <p>6 different cognate user, so, therefore, their score will</p> <p>7 be different.</p> <p>8 Q. Does the claim require the score for the</p> <p>9 different collaborative users to be different?</p> <p>10 A. So claim -- so Claim 1, as we discussed, no.</p> <p>11 It's not explicit.</p> <p>12 Q. Is it required?</p> <p>13 A. Claim 1 language doesn't say explicitly, so it</p> <p>14 doesn't require.</p> <p>15 Q. Can you go to Figure 2?</p> <p>16 A. Okay, another important point I want to add.</p> <p>17 The --</p> <p>18 Q. There's no question pending, Dr. Khan.</p> <p>19 A. I cannot add?</p> <p>20 Q. There's no question pending.</p> <p>21 A. Okay.</p> <p>22 Q. Please go to Figure 2.</p> <p>23 A. Figure...?</p> <p>24 Q. 2.</p> <p>25 A. Yeah.</p>	<p style="text-align: right;">Page 239</p> <p>1 (Witness reviewed document.)</p> <p>2 A. Okay. So -- so you -- Euclidean distance is</p> <p>3 widely used when you have a vector representation. So</p> <p>4 you have a user profile presented as a vector, and then</p> <p>5 the object profile will also be presented as a vector.</p> <p>6 So then the idea here is in a</p> <p>7 multi-dimensional space, this user object and the -- I'm</p> <p>8 sorry, user profile and the object profile should be</p> <p>9 close together, if they're very similar. So ideal</p> <p>10 distance should be zero. That's not the case. There</p> <p>11 should be larger distance is better, that try to say.</p> <p>12 And then they try to say that you can use the weighted</p> <p>13 one, then you can use the co-sign similarity, also</p> <p>14 vector.</p> <p>15 Q. So --</p> <p>16 A. So these are some measurements similarity</p> <p>17 calculations you can utilize.</p> <p>18 Q. So a person of skill in the art would</p> <p>19 understand there's other similarity measures that can be</p> <p>20 used other than just the Euclidean distance?</p> <p>21 A. Yeah; from the writing, yes.</p> <p>22 Q. Can you go to paragraph 31 of Krug?</p> <p>23 A. 31?</p> <p>24 Q. Yeah. Here, the system of Krug is describing</p> <p>25 how he can identify a group of people where, for</p>
<p style="text-align: right;">Page 238</p> <p>1 Q. Figure 2 shows the user profile. Is that</p> <p>2 correct?</p> <p>3 A. Yes.</p> <p>4 Q. And the user profile includes static values?</p> <p>5 A. Uh-huh.</p> <p>6 Q. And the static values are provided by the user</p> <p>7 during registration, correct?</p> <p>8 A. Correct.</p> <p>9 Q. And the static values are also used within the</p> <p>10 overall calculation for the comparison value?</p> <p>11 A. The static -- what did you say?</p> <p>12 Q. The static values are also used as part of the</p> <p>13 overall calculation for the comparison value?</p> <p>14 A. Okay.</p> <p>15 Q. Can you go to paragraph 22 of Krug?</p> <p>16 A. Paragraph 22.</p> <p>17 Q. I believe you were discussing this earlier</p> <p>18 about the Euclidean distance --</p> <p>19 A. Okay.</p> <p>20 Q. -- between the vector of the object profile</p> <p>21 and the user profile.</p> <p>22 A. Uh-huh.</p> <p>23 Q. If you look at the bottom of paragraph 22, it</p> <p>24 says that other types of measurements can also be used,</p> <p>25 correct?</p>	<p style="text-align: right;">Page 240</p> <p>1 example, all users have access to a specific object. Do</p> <p>2 you see that?</p> <p>3 A. Right, yeah.</p> <p>4 Q. And so we would agree that all of the users in</p> <p>5 this group who have access to a specific object have</p> <p>6 access to the same object?</p> <p>7 A. Say -- can you say it one more time? All</p> <p>8 users...?</p> <p>9 Q. So Krug -- I'm going to break it down.</p> <p>10 So Krug can identify a group based on</p> <p>11 users who have access to a specific object.</p> <p>12 A. Right. So that will be one group, let's say.</p> <p>13 Q. Yeah. And that group --</p> <p>14 A. Same object, yeah.</p> <p>15 Q. That group has access to the same object?</p> <p>16 A. Right.</p> <p>17 Q. Okay. And the system can run searches based</p> <p>18 on that group, correct?</p> <p>19 A. So you're saying we have a number of users</p> <p>20 that will form a group because they access the same</p> <p>21 object?</p> <p>22 Q. Yes.</p> <p>23 A. Okay. And then? Then you're saying --</p> <p>24 Q. That the system can use that group to run</p> <p>25 searches? The system can use that search -- the system</p>

<p>Page 241</p> <p>1 can use that group to determine a comparison value?</p> <p>2 A. But the problem is in the -- that -- the value</p> <p>3 we are calculating, what is it called?</p> <p>4 Q. Comparison value.</p> <p>5 A. Yeah, comparison value. So that is --</p> <p>6 considers each individual user's rating also, right?</p> <p>7 Because it's a user's intensity. Then -- then -- then</p> <p>8 group intensity. Then they consider the profile,</p> <p>9 profile difference. Then the search engine resolves.</p> <p>10 So the various factors will play a role in this case.</p> <p>11 Q. And one of those factors could be this group?</p> <p>12 A. Yeah, but it doesn't give you a guarantee that</p> <p>13 the group will be the -- will receive the -- these two</p> <p>14 group -- there's a possibility that -- that might be</p> <p>15 another group also, that search same object.</p> <p>16 Q. I'm asking about this group. This group can</p> <p>17 be used as part of the calculation of the comparison</p> <p>18 value?</p> <p>19 A. So you're saying the group is formed based on</p> <p>20 the same search, right? Or the -- what is the group</p> <p>21 based on? Based on what?</p> <p>22 Q. Having access to the same piece of content.</p> <p>23 A. Okay. Same piece of content.</p> <p>24 Q. Krug can then calculate a comparison value</p> <p>25 based on that group?</p>	<p>Page 243</p> <p>1 A. Right.</p> <p>2 Q. If we go to paragraph 32 --</p> <p>3 A. 32.</p> <p>4 Q. -- it says there, "Advantageously, user groups</p> <p>5 can be used to determine the action equivalence" [as</p> <p>6 read].</p> <p>7 Do you see that?</p> <p>8 A. [Nods head.]</p> <p>9 Q. So you agree that user groups can be used to</p> <p>10 determine the action equivalence?</p> <p>11 A. So what is your question?</p> <p>12 Q. Can user groups be used to determine the</p> <p>13 action equivalence?</p> <p>14 A. Yeah.</p> <p>15 Q. And the action equivalence is used to</p> <p>16 determine the comparison value?</p> <p>17 A. But action equivalence is a -- one of the part</p> <p>18 of the --</p> <p>19 Q. I didn't say action equivalence alone was used</p> <p>20 to determine the comparison value. Action equivalence</p> <p>21 is one part of determining the comparison value,</p> <p>22 correct?</p> <p>23 A. Correct.</p> <p>24 Q. So user groups can be one part of determining</p> <p>25 the comparison value, correct?</p>
<p>Page 242</p> <p>1 A. But where is your cognate user?</p> <p>2 Q. I'm not asking about the cognate user. I'm</p> <p>3 asking whether Krug can calculate a comparison value</p> <p>4 based on that group?</p> <p>5 A. Because the formula requires some grouping.</p> <p>6 Based on the grouping, you have to use the -- come up</p> <p>7 with the value, right? Some group -- group intrinsic</p> <p>8 value.</p> <p>9 Q. Are you referring to the '217 patent?</p> <p>10 A. No. In the TRM, the equation -- where is the</p> <p>11 equation?</p> <p>12 (Witness reviewed document.)</p> <p>13 A. Yeah, this one, 106. They have -- so I --</p> <p>14 this will come from the search engine, as I told you,</p> <p>15 GRm(k). And then GRm(k) will come from the search</p> <p>16 engine. Then I mentioned that -- then you have to</p> <p>17 consider the intrinsic value within the user group for</p> <p>18 the object for the -- so that -- and then --</p> <p>19 Q. (BY MR. PLAIL) So the system of Krug can</p> <p>20 calculate a comparison value using the group?</p> <p>21 MR. PADMANABHAN: Objection; Rule 611.</p> <p>22 A. Groups can calculate the GRm(k) for a group,</p> <p>23 that's what you're saying?</p> <p>24 Q. (BY MR. PLAIL) Okay. HA is the action</p> <p>25 equivalence.</p>	<p>Page 244</p> <p>1 A. User group can be one part of that, oh, okay,</p> <p>2 yeah.</p> <p>3 Q. And user groups can be defined, for example,</p> <p>4 based on having access to the same document?</p> <p>5 A. So user group can -- okay, so you are</p> <p>6 saying -- no, I'm not saying yes or no yet. So...</p> <p>7 Q. You're not answering?</p> <p>8 A. No, I'm going to answer. So you are saying</p> <p>9 user --</p> <p>10 Q. Groups can be defined, for example --</p> <p>11 A. Accessing the same object, so, therefore, this</p> <p>12 will be same group.</p> <p>13 Q. I didn't say "therefore." I asked a question.</p> <p>14 User groups can be defined, for example,</p> <p>15 based on having access to the same document?</p> <p>16 A. Yes, same object. Okay, that -- and then?</p> <p>17 Q. No "and then."</p> <p>18 A. But you said -- you tried to ask me --</p> <p>19 Q. No, I -- that was my whole question.</p> <p>20 A. Oh, okay. But my response was, it doesn't</p> <p>21 satisfy the additional condition, right, for the patent</p> <p>22 '217.</p> <p>23 Q. I wasn't talking about the '217.</p> <p>24 A. Okay. That's fine.</p> <p>25 MR. PLAIL: All right. I think we should</p>

<p style="text-align: right;">Page 245</p> <p>1 take a brief break.</p> <p>2 THE WITNESS: Sure.</p> <p>3 (Break taken from 4:42 p.m. to 4:54 p.m.)</p> <p>4 Q. (BY MR. PLAIL) Can you go back to Claim 1?</p> <p>5 A. Which one?</p> <p>6 Q. Of the '217 patent. I just want to make sure</p> <p>7 we're aligned on one piece, which is, in the identifying</p> <p>8 limitation, identifying at least one other of a</p> <p>9 plurality of users that is a recipient of the piece of</p> <p>10 the electronic content and that is cognate to the user,</p> <p>11 the claim allows for a group of cognate users to be</p> <p>12 identified, correct?</p> <p>13 A. Which claim allows?</p> <p>14 Q. Claim 1.</p> <p>15 A. At least one of the other...</p> <p>16 (Witness reviewed document.)</p> <p>17 A. So it identifies a number of users that will</p> <p>18 be -- that will be the recipient of the same piece of</p> <p>19 electronic content, and that is cognate to the -- that</p> <p>20 user to set conditions simultaneously.</p> <p>21 Q. But that identification can be of a group of</p> <p>22 people?</p> <p>23 MR. PADMANABHAN: Objection; Rule 611.</p> <p>24 A. It can be -- as I said, for each -- for each</p> <p>25 user, there will be a group. For each first user, there</p>	<p style="text-align: right;">Page 247</p> <p>1 A. Not necessarily one. It can be two, three.</p> <p>2 It depends on the end.</p> <p>3 Q. So when you said earlier that they mention</p> <p>4 each distinct user, there will be a cognate user, they</p> <p>5 explain that each user will have a distinct cognate</p> <p>6 user, what do you mean by that?</p> <p>7 MR. PADMANABHAN: Objection; Rule 611.</p> <p>8 A. I think -- okay, so the -- for each distinct</p> <p>9 user, I will have a set of N number of cognate users.</p> <p>10 Q. (BY MR. PLAIL) I see. So N number. So going</p> <p>11 back to my original question, User A can be cognate to</p> <p>12 the group of users B, C, and D, correct?</p> <p>13 MR. PADMANABHAN: Objection; Rule 611.</p> <p>14 A. User A can be a cognate to...?</p> <p>15 Q. (BY MR. PLAIL) The group of users B, C,</p> <p>16 and D.</p> <p>17 A. Group of Users B -- no, it can be -- maybe --</p> <p>18 let's say there might be a group where A, B, C, D, E, F,</p> <p>19 all of them are there. But when you say cognate user</p> <p>20 for A, then it might be -- and I'm looking for only two</p> <p>21 users, let's say, from that. So it will be only, as I</p> <p>22 said, B and C. And for B, it might be C and D.</p> <p>23 Q. So --</p> <p>24 A. Because the similarity is different. They try</p> <p>25 to emphasize in column 46 that --</p>
<p style="text-align: right;">Page 246</p> <p>1 will be a group with respect to patent '217.</p> <p>2 Q. (BY MR. PLAIL) So User A can be cognate to</p> <p>3 user -- strike that.</p> <p>4 User A can be cognate to the group of</p> <p>5 Users B, C, and D, for example?</p> <p>6 A. No.</p> <p>7 Q. No?</p> <p>8 A. No.</p> <p>9 Q. Why not?</p> <p>10 A. Because the way it's described in the</p> <p>11 specification section, they mention that for each</p> <p>12 distinct user, there will be a cognate users. And then</p> <p>13 column 46 and 45, they explain it by an example how, for</p> <p>14 each user, you will have a distinct cognate user set.</p> <p>15 Q. So for the cognate user limitation in the</p> <p>16 claim, we can only have cognate user -- for the cognate</p> <p>17 user limitation in the claim, we can only have User A as</p> <p>18 cognate to User B?</p> <p>19 MR. PADMANABHAN: Objection; Rule 11 --</p> <p>20 Rule 611.</p> <p>21 A. For User A -- say one more time, please.</p> <p>22 Q. (BY MR. PLAIL) For the cognate user</p> <p>23 limitation in the claim, we can only have the User A is</p> <p>24 cognate to User B?</p> <p>25 MR. PADMANABHAN: Objection; Rule 611.</p>	<p style="text-align: right;">Page 248</p> <p>1 Q. In column 46?</p> <p>2 A. Correlation, yeah.</p> <p>3 Q. The correlation in column 46 is a requirement</p> <p>4 for the identifying limitation of the claim?</p> <p>5 MR. PADMANABHAN: Objection; Rule 611.</p> <p>6 A. That's one way you determine the cognate</p> <p>7 users.</p> <p>8 Q. (BY MR. PLAIL) Is it a limitation for the</p> <p>9 identifying limitation of the claim?</p> <p>10 MR. PADMANABHAN: Objection; Rule 611.</p> <p>11 A. So what is your question in this case?</p> <p>12 Q. (BY MR. PLAIL) So I'm asking whether User A</p> <p>13 can be cognate to a group of users and you're saying no?</p> <p>14 MR. PADMANABHAN: Objection; Rule 611.</p> <p>15 MR. PLAIL: I'm going to note that counsel</p> <p>16 for Sterling is giving nonverbal cues to the witness.</p> <p>17 MR. PADMANABHAN: No. He's been saying it</p> <p>18 to -- like, he's said three times --</p> <p>19 MR. PLAIL: Speaking objection.</p> <p>20 MR. PADMANABHAN: I'm not giving a</p> <p>21 speaking objection, because you've asked this question a</p> <p>22 million times.</p> <p>23 MR. PLAIL: And he's now admitting that</p> <p>24 he's giving a speaking objection.</p> <p>25 MR. PADMANABHAN: And you -- you kept --</p>

<p>Page 249</p> <p>1 you keep asking the same question.</p> <p>2 MR. PLAIL: He's now arguing on the record</p> <p>3 in front of the witness.</p> <p>4 A. So I'm saying the --</p> <p>5 MR. PADMANABHAN: This is outrageous.</p> <p>6 MR. PLAIL: And is now giving an</p> <p>7 additional speaking objection.</p> <p>8 Can we go off the record?</p> <p>9 (Off the record 5:00 p.m. to 5:01 p.m.)</p> <p>10 Q. (BY MR. PLAIL) So I'm asking for User A, can</p> <p>11 they be cognate to a group of other users?</p> <p>12 MR. PADMANABHAN: Objection; Rule 611.</p> <p>13 A. No. In this patent '217, I'm not going to say</p> <p>14 group of other users. A number of other users.</p> <p>15 Q. (BY MR. PLAIL) If you go to column 33 of the</p> <p>16 '217 patent, line 60 -- sorry, line 60 through 62, I</p> <p>17 suppose we can start at the top of that paragraph. "Now</p> <p>18 turning to a description regarding computing cognate</p> <p>19 importance" [as read].</p> <p>20 Do you see that?</p> <p>21 A. Right.</p> <p>22 Q. It says that, "An electronic mail system may</p> <p>23 store for each user a set of N other users considered to</p> <p>24 be most similar to the user. This is the user's cognate</p> <p>25 group" [as read].</p>	<p>Page 251</p> <p>1 cannot be cognate to a group of users?</p> <p>2 MR. PADMANABHAN: Objection; Rule 611.</p> <p>3 (Witness reviewed document.)</p> <p>4 MR. PADMANABHAN: I'm just going to go see</p> <p>5 if she'll give you 20 more minutes.</p> <p>6 MR. PLAIL: Okay. Thank you.</p> <p>7 (Mr. Padmanabhan left the room.)</p> <p>8 MR. PADMANABHAN: She's got to go home.</p> <p>9 MR. PLAIL: Got it.</p> <p>10 For the record, we did not discuss while</p> <p>11 opposing counsel was outside the room.</p> <p>12 A. Yes.</p> <p>13 Q. (BY MR. PLAIL) I'm going to ask this question</p> <p>14 one more time, and I'm short on time, so I'm going to</p> <p>15 move to something else, but I'd appreciate an answer.</p> <p>16 Is there a limitation in the claim that to</p> <p>17 you indicates that User A cannot be cognate to a group</p> <p>18 of users?</p> <p>19 MR. PADMANABHAN: Objection; Rule 611.</p> <p>20 A. So in the patent '217, column 47, under</p> <p>21 Claim 1, they said cognate to the users. They did not</p> <p>22 use the word "cognate group" or "group of users."</p> <p>23 Q. (BY MR. PLAIL) So because the claim doesn't</p> <p>24 specifically use the word "group of users," you're</p> <p>25 saying --</p>
<p>Page 250</p> <p>1 A. Right.</p> <p>2 Q. So the user concerned can be cognate to a</p> <p>3 group of other users?</p> <p>4 A. Right. So that will focus on -- let's say</p> <p>5 this cognate group will be smaller in -- for that user,</p> <p>6 smaller in size with respect to the -- you have a -- the</p> <p>7 bunch of users joined based on, let's say, certain</p> <p>8 characteristics, let's say all women, then they form a</p> <p>9 group. That's not the cognate group we are talking</p> <p>10 about here.</p> <p>11 And this cognate group, it goes with user.</p> <p>12 For each user, there will be a cognate group, where we</p> <p>13 will have a few users that are very relevant to this</p> <p>14 user.</p> <p>15 Q. So under Claim 1, the user can be cognate to a</p> <p>16 group of users?</p> <p>17 MR. PADMANABHAN: Objection; Rule 611.</p> <p>18 A. Under claim -- under claim...?</p> <p>19 Q. (BY MR. PLAIL) 1, the user can be cognate to</p> <p>20 a group of users?</p> <p>21 MR. PADMANABHAN: Objection; Rule 611.</p> <p>22 A. We're -- you said to a group of users, right?</p> <p>23 Q. (BY MR. PLAIL) Yes.</p> <p>24 A. That, I don't agree.</p> <p>25 Q. Okay. So why -- what in the claim says they</p>	<p>Page 252</p> <p>1 A. No.</p> <p>2 Q. -- that User A cannot be cognate to a group of</p> <p>3 users?</p> <p>4 MR. PADMANABHAN: Objection; Rule 611.</p> <p>5 A. No. The way the specification also discuss,</p> <p>6 that shows that for each users, there will be a set of</p> <p>7 cognate users.</p> <p>8 Q. (BY MR. PLAIL) A set, as in a group?</p> <p>9 A. But this group usually smaller in size -- or</p> <p>10 the set size is smaller. That set, a number of --</p> <p>11 number of users will be very small.</p> <p>12 Q. What is an acceptable set size for the claim?</p> <p>13 MR. PADMANABHAN: Objection; Rule 611.</p> <p>14 A. That -- that, I cannot -- I don't know.</p> <p>15 Q. (BY MR. PLAIL) Okay. So you don't have an</p> <p>16 answer for what is an acceptable set size?</p> <p>17 MR. PADMANABHAN: Objection; Rule 611.</p> <p>18 A. Because the empirical experiment is --</p> <p>19 empirical experiment is required to say that number.</p> <p>20 Q. (BY MR. PLAIL) So I'm going to ask you --</p> <p>21 A. In general --</p> <p>22 Q. I'm going to --</p> <p>23 (Cross talk.)</p> <p>24 Q. I'm sorry, I'm really short on time.</p> <p>25 A. But let me --</p>

Page 253	Page 255
1 Q. No. I mean, I -- look, I'm being kicked out	1 CHANGES AND SIGNATURE
2 of here in five minutes --	2 WITNESS NAME: DR. LATIFUR KHAN
3 A. Oh, sorry.	3 DATE: NOVEMBER 13, 2025
4 Q. -- and I need to ask some additional	4 PAGE LINE CHANGE REASON
5 questions.	5 _____
6 A. Sure.	6 _____
7 Q. You provide -- do you understand what	7 _____
8 secondary considerations are?	8 _____
9 A. You mean the dependent claim?	9 _____
10 Q. No. You do not provide any opinions relating	10 _____
11 to what are called objective indicia of nonobviousness.	11 _____
12 Is that correct? I'm asking about the opinions in your	12 _____
13 declaration.	13 _____
14 A. In the --	14 _____
15 MR. PADMANABHAN: I can stipulate that for	15 _____
16 you.	16 _____
17 MR. PLAIL: Okay. You will stipulate?	17 _____
18 MR. PADMANABHAN: It's not in his report.	18 _____
19 Yeah, it's not in his report.	19 _____
20 MR. PLAIL: Okay.	20 _____
21 Q. (BY MR. PLAIL) Okay. I'm confirming that you	21 _____
22 have not reviewed any source code for the Twitter	22 _____
23 product?	23 _____
24 A. Twitter?	24 _____
25 Q. Yeah.	25 _____
Page 254	Page 256
1 A. What is the Twitter -- Twitter is here?	1 I, DR. LATIFUR KHAN, have read the foregoing
2 Q. I'm asking, have you ever reviewed any source	2 deposition and hereby affix my signature that same is
3 code for Twitter?	3 true and correct, except as noted above.
4 A. No.	4 _____
5 Q. And you've not made any opinions based off of	5 DR. LATIFUR KHAN
6 any review of any source code for Meta either?	6 _____
7 A. No.	7 _____
8 MR. PLAIL: All right. I'm going to note	8 _____
9 for the record that we have to end this deposition early	9 THE STATE OF _____)
10 because the building is closing. We will reach out to	10 COUNTY OF _____)
11 opposing counsel about logistics later.	11 _____
12 THE REPORTER: Off the record?	12 Before me, _____, on
13 MR. PLAIL: Yeah.	13 this day personally appeared DR. LATIFUR KHAN, known to
14 (Proceedings concluded at 5:09 p.m.)	14 me (or proved to me under oath or through
15 _____	15 _____) (description of identity
16 _____	16 card or other document)) to be the person whose name is
17 _____	17 subscribed to the foregoing instrument and acknowledged
18 _____	18 to me that they executed the same for the purposes and
19 _____	19 consideration therein expressed.
20 _____	20 Given under my hand and seal of office this
21 _____	21 _____ day of _____, 2025.
22 _____	22 _____
23 _____	23 _____
24 _____	24 NOTARY PUBLIC IN AND FOR
25 _____	25 THE STATE OF _____
	COMMISSION EXPIRES:

<p>1 STATE OF TEXAS) 2 COUNTY OF DALLAS) 3 I, LISA F. DEMOE, a Certified Shorthand Reporter in 4 and for the State of Texas, hereby certify that, 5 pursuant to the agreement hereinbefore set forth, there 6 came before me on the 17th day of November, 2025, at 7 9:08 a.m., at the office of Regus, located at 1220 River 8 Bend Drive, Suite 250, in the City of Dallas, State of 9 Texas, the following named person, to-wit: DR. LATIFUR 10 KHAN, who was by me duly cautioned and sworn to testify 11 to the truth, the whole truth, and nothing but the truth 12 of his knowledge touching and concerning the matters in 13 controversy in this cause; and that he was thereupon 14 carefully examined upon his oath and his examination 15 reduced to writing under my supervision; that the 16 deposition is a true record of the testimony given by 17 the witness, same to be sworn and subscribed by said 18 witness before any Notary Public, pursuant to the 19 agreement of the parties; and that the amount of time 20 used by each party at the deposition is as follows: 21 Mr. Ethan Plail - 6 hours, 35 minutes, 22 Mr. Devan Padmanabhan - 0 hours, 0 minutes; 23 I further certify that I am neither attorney nor 24 counsel for, nor related to or employed by, any of the 25 parties to the action in which this deposition is taken,</p>	<p>Page 257</p>
<p>1 and further, that I am not a relative or employee of any 2 attorney or counsel employed by the parties hereto, or 3 financially interested in the action. 4 I further certify that before the completion of the 5 deposition, <u> X </u> the Deponent, and/or <u> </u> the 6 Plaintiff/Defendant, <u> X </u> did <u> </u> did not request 7 to review the transcript. 8 In witness whereof, I have hereunto set my hand and 9 affixed my seal this 17th day of November, 2025. 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p> <p> _____ LISA F. DEMOE, CSR, RPR Texas CSR No. 6533 Expiration Date: 01/31/27</p>	<p>Page 258</p>

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