

Exhibit D

1 UNITED STATES DISTRICT COURT
2 NORTHERN DISTRICT OF CALIFORNIA
3 SAN JOSE DIVISION

4 -----x

5 APPLE INC., a California
6 corporation,

7 Plaintiff,

8 vs.

9 Case No.
10 11-CV-01846-LHK

11 SAMSUNG ELECTRONICS CO., LTD, a
12 Korean business entity; SAMSUNG
13 ELECTRONICS AMERICA, INC., a New
14 York corporation; SAMSUNG
15 TELECOMMUNICATIONS AMERICA, LLC,
16 a Delaware limited liability
17 company,

18 Defendants.

19 -----x

20 HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY
21 VIDEOTAPED DEPOSITION OF JOHN HAUSER, a
22 witness called by the Defendants, taken
23 pursuant to the applicable provisions of the
24 Federal Rules of Civil Procedure, before James
25 A. Scally, RMR, CRR, a Notary Public in and
for the Commonwealth of Massachusetts, at the
offices of WilmerHale, 60 State Street,
Boston, Massachusetts, on Friday, April 27,
2012, commencing at 9:31 a.m.
TSG Job # 48803

1 So normally when you hear these surveys on 16:47:09
2 television, they say, you know, 55 percent for candidate A, 16:47:13
3 45 percent for candidate B, and then they give a plus or 16:47:22
4 minus. Okay. That plus or minus is actually two times the 16:47:27
5 standard deviation -- roughly two times the standard error. 16:47:30
6 So that's that sort of the precision with which I'm -- I'm 16:47:34
7 estimating this parameter. In the case of the political 16:47:37
8 candidate, it's, you know, the votes they're going to get 16:47:42
9 or the people favoring them or whatever. In my estimates, 16:47:45
10 it's the estimate of a particular partworth. 16:47:50
11 Now, just, again, for the record, kind of mixing a 16:47:55
12 little bit of philosophy here between frequentist and 16:48:01
13 Bayesian statistics, in terms of the Bayesian, it's the 16:48:06
14 posterior Bayesian confidence interval; they've got fancy 16:48:10
15 words, but it's usually best to think of it as the 16:48:15
16 confidence interval. So for every one of the parameters in 16:48:17
17 my population, I can give you both the estimate and in 16:48:21
18 Exhibit -- I thought it was here. 16:48:28
19 MR. ILLOVSKY: Are you looking for 16:49:17
20 12, K in your report? 16:49:18
21 THE WITNESS: Yeah. I can't find 12. 16:49:20
22 MR. ILLOVSKY: Use that. 16:49:21
23 THE WITNESS: Okay. 16:49:22
24 A. Exhibit 12, which is K, you can see the standard 16:49:23
25 error of the market level mean. 16:49:27

1 So to interpret this, they say table K1. We have 16:49:30
2 the first feature, which is "Reliable Touch, Auto-Switch (1 16:49:38
3 to 2 Fingers, Rubberband, Tap and Re-center the Zoom," the 16:49:42
4 average market level mean is 64.5, and we also have medians 16:49:45
5 in there, and I'll explain the difference in a moment, and 16:49:51
6 the standard error is 2.1. So you can see it's, you know, 16:49:54
7 that's pretty good precision. 16:49:58

8 Q. Does this mean that the willingness to pay for any 16:50:00
9 given individual is measured with high precision? 16:50:05

10 A. Oh, no. Absolutely not. 16:50:10

11 Q. Okay. 16:50:13

12 A. You know, and I actually give an example of 16:50:25
13 flipping coins to try and motivate this concept. You can 16:50:27
14 have high precision at the population level, but not high 16:50:31
15 precision at the level of each and every individual. 16:50:36

16 Q. Okay. Let's go to page 48 of Exhibit 1. Okay. 16:50:41
17 So do you see -- do you see table 3A in your report? 16:51:00

18 A. Yes, I do. 16:51:05

19 Q. And then if you flip the page, you'll see table 16:51:06
20 3B? 16:51:08

21 A. Yes, I do. 16:51:09

22 Q. Okay. So these are the -- here's the -- the means 16:51:10
23 and the standard deviations; right? 16:51:15

24 A. No. Let's be clear what we have here. Okay. 16:51:17
25 There is an estimate of the mean and the market 16:51:21

1 heterogeneity, which is the distribution, standard 16:51:24

2 distribution, of these partworths across the population. 16:51:27

3 Q. This is the population of the respondents, or is 16:51:32

4 this the population of -- of the 10,000? 16:51:36

5 A. I -- I have -- I mean I think you're confusing 16:51:45

6 draw as from a posterior distribution with the population. 16:51:49

7 Q. What are you -- okay. So the pop -- what do you 16:51:56

8 mean by the population? 16:51:58

9 A. Okay. So I have four hundred and -- this is 16:51:59

10 smartphones -- 455 respondents. 16:52:02

11 Q. Uh-huh. 16:52:05

12 A. Okay. And what I'm doing is I'm estimating for 16:52:06

13 the target population, now, the mean level of the partworth 16:52:12

14 and how much it varies. So think of it as you may have a 16:52:18

15 different partworth than I do, and Dr. Sukumar may have yet 16:52:24

16 another partworth, and Eugene may have a different 16:52:28

17 partworth, et cetera. I can't -- I can't actually -- I can 16:52:30

18 get an estimate of each one of those partworths, but -- but 16:52:34

19 not with a lot of high precision. But I can estimate how 16:52:37

20 these vary across the population. And I can do that with 16:52:40

21 high precision. 16:52:44

22 So it's kind of like saying if I drive in the 16:52:47

23 Southeast Expressway, it's going to take me 20 minutes plus 16:52:52

24 or minus 10 minutes. I can get a pretty good estimate that 16:52:55

25 on average it takes me 20 minutes, of course that's 16:52:58

1 A. Yes. You shouldn't -- you should not use ACBC if 17:04:03

2 you have less than five attributes. That's what it means. 17:04:05

3 Q. It doesn't -- it doesn't -- it doesn't recommend 17:04:11

4 using -- so the way you read this is not a recommendation 17:04:14

5 that you use ACBC when you have more than five attributes; 17:04:17

6 you don't read it that way? 17:04:21

7 A. Did you read the technical manual? 17:04:22

8 Q. I did not. Did you? 17:04:24

9 A. Yes, I did. 17:04:25

10 Q. And what does it say? 17:04:26

11 A. Okay. I'm quite happy to explain ACBC to you. 17:04:27

12 Q. No, that's not -- that's not the question. You 17:04:31

13 know, I've been patient today with -- with the responses 17:04:33

14 that are really nonresponsive to a lot of the questions. 17:04:38

15 But we're running out of time, and I am just asking you is 17:04:41

16 your interpretation of a printout from Sawtooth's website 17:04:49

17 where it says "When to Use ACBC" and it indicates "Five or 17:04:53

18 more attributes," it is -- it's your understanding that 17:04:57

19 ACBC should not be used when you have fewer than five 17:05:05

20 attributes; is that your understanding? 17:05:09

21 MR. ILLOVSKY: Wait. So hold on. 17:05:11

22 I've got to object to the preface. The 17:05:12

23 answers have been perfectly responsive when 17:05:14

24 the questions have been comprehensible, 17:05:16

25 which has not been a large percentage of 17:05:18

1 the time. So object to the preface, object 17:05:20

2 to the question. 17:05:23

3 Go ahead. 17:05:26

4 A. Can you ask -- re-ask the question? 17:05:28

5 Q. Let's move on. Look at the -- look at the last 17:05:39

6 paragraph on page 1 of what's been marked as Exhibit 20. 17:05:41

7 It says, "In addition to the standard partworth utilities 17:05:45

8 that are useful for segmentation and market simulation, we 17:05:49

9 captured the specific 'must-have' and 'unacceptable' rules 17:05:51

10 that respondents expressed during the screening process." 17:05:55

11 You're familiar with that term "must-have"; right? 17:06:00

12 A. Well, if you had read the technical manual, you'll 17:06:03

13 see that they're pretty widely quoting many of my papers. 17:06:05

14 So, yes, I am definitely familiar with this. 17:06:12

15 Q. Okay. 17:06:14

16 A. And I'd like to also point out that we did these 17:06:14

17 tests on our data. And what these refer to is 17:06:17

18 lexicography. And they're -- in many cases consumers are 17:06:20

19 lexicographic when there are a lot of features or when the 17:06:25

20 choice task is speeded up or other things. And we did do 17:06:29

21 lexicography tests in our data, which are entirely doable 17:06:32

22 with all the information we gave you. 17:06:37

23 And I can tell you that out of seven features 17:06:39

24 times roughly, you know, 800 respondents, it's like 5600 17:06:44

25 possible tasks, exactly one was lexicographic, and it was 17:06:53

1 lexicographic on price. So we did do the test as to 17:06:59
2 whether or not we should have must-have features in there, 17:07:02
3 which can be done after the fact, and it fully essentially 17:07:05
4 confirms that there is no lexicography; because there's no 17:07:10
5 lexicography, we don't need ACBC. 17:07:13
6 Now, of course, I only did this after I had the 17:07:16
7 data. So I made a judgment up front, again, from my 17:07:20
8 experience, from also the qualitative interviews, that we 17:07:23
9 probably did not need to worry about lexicography in this 17:07:26
10 particular study. And that turned out to be correct. So 17:07:31
11 to have one out of like 5600, that can almost even be by 17:07:35
12 chance. 17:07:39
13 Q. Why didn't you -- why didn't you mention in your 17:07:40
14 report that you tested for must-have features? 17:07:43
15 A. Oh, I -- I only did this test after I read Dr. 17:07:47
16 Sukumar's results, because I didn't -- I mean we did not 17:07:51
17 have any indications that there should be any lexicography. 17:07:55
18 Also, you know, I know Sawtooth says "five or more" here, 17:07:59
19 but you're really -- it's going to be very rare that you 17:08:03
20 have lexicography for as little as five attributes. It's 17:08:07
21 going to be upwards of 20 or so before you start having it. 17:08:10
22 I did not expect it. But given that he raised it, Dr. 17:08:13
23 Sukumar raised it, and given that I could test it with the 17:08:17
24 data that you had been given, I tested it. 17:08:21
25 Q. Part of your opinion is -- is the value placed on 17:08:28

1 the '915, the '161, and the '381 patents combined. Are you 17:08:32
2 able to break out the individual value of those patents? 17:08:39
3 A. Okay. Let me just add that you've been given all 17:08:42
4 the code that we ran for the lexicographic tests. 17:08:44
5 So can you -- can you re-ask that question? 17:08:49
6 Q. Part of your opinion is the value placed on the 17:08:52
7 '915, the '161, and the '381 patents combined. Are you 17:08:55
8 able to break out the individual value of those patents to 17:09:01
9 Samsung consumers? 17:09:04
10 A. Okay. So -- 17:09:05
11 MR. ILLOVSKY: Objection to form. 17:09:05
12 A. Take a look at the report again. 17:09:07
13 MR. GALVIN: I withdraw the question. 17:09:23
14 Let's take a break, please. 17:09:45
15 THE VIDEOGRAPHER: Going off the 17:09:46
16 record. The time is 5:09. 17:09:47
17 (Recess.) 17:09:49
18 (Exhibit 21, DVD labeled "Hauser 17:20:54
19 Survey Data Files," marked.) 17:20:58
20 THE VIDEOGRAPHER: We're back on the 17:20:59
21 record. The time is 5:20. 17:21:00
22 BY MR. GALVIN: 17:21:11
23 Q. Dr. Hauser, for each of your respondents, how many 17:21:12
24 records are there? 17:21:15
25 A. I am not sure I understand the -- 17:21:21

1 at the willingness to pay estimates at some point? On an 17:30:13

2 individual level, did you examine all -- 17:30:22

3 A. I, in fact, not only didn't I do it, but I -- I 17:30:25

4 gave the example with the head -- with the coin-flipping 17:30:28

5 example, and, again, at least nine places in the report, it 17:30:30

6 was in two of the footnotes, I'm very explicit as to why 17:30:35

7 that would -- that is not what one should do, and that that 17:30:38

8 would be a naive thing to do. I've got enough experience 17:30:42

9 with hierarchical Bayes to know these issues are in there. 17:30:46

10 And, you know, when I read Dr. Sukumar's results, 17:30:50

11 and he's getting numbers like he modified the code, and he 17:30:52

12 got numbers that are absurd. And you should look at those 17:30:55

13 and say, well, gee, they are absurd. So why are they 17:30:59

14 absurd? Well, because the code was modified. 17:31:03

15 Q. Well, did you get results that were absurd? 17:31:05

16 A. No. I did the calculations correctly. 17:31:07

17 Q. But you didn't look on an individual level at 17:31:09

18 the -- at the calculations, did you? 17:31:12

19 MR. ILLOVSKY: Objection to form. 17:31:16

20 A. You know, I -- I wrote a set of procedures; I 17:31:17

21 wrote the set of procedures that are correct. We're now 17:31:20

22 talking about 10,000 draws for 800 consumers times -- four 17:31:23

23 times -- times 28 partworths. So what is that? Millions, 17:31:31

24 billions? No, I didn't look at a billion different 17:31:35

25 numbers. I looked at the appropriate output of 17:31:38

1 calculations based on whatever it is, a billion different 17:31:40
2 numbers. 17:31:43

3 Q. Did you look at the median of those calculations? 17:31:44

4 A. I looked at -- I did the median appropriately. 17:31:48

5 Q. So what was the -- what was the median? 17:31:51

6 A. The median, as described, it's -- we can look it
7 up, you know. 17:31:58

8 Q. Do you remember? 17:31:59

9 A. Is it a memory test? 17:32:00

10 Q. No. It's -- I'm asking you if you remember or
11 not. 17:32:04

12 A. Do I remember the exact number? 17:32:05

13 Q. Uh-huh. 17:32:06

14 A. The exact number's in my report. We can look it
15 up. 17:32:10

16 Q. Okay. Let's go -- let's go there. 17:32:10

17 A. (Pause.) Well, it's basically footnote 72, 73,
18 and you'll note that in 72 it says, "For each of these
19 samples, I computed a median willingness to pay for the
20 market. I then computed an overall market level
21 willingness to pay by taking the median of the 10,000
22 sample medians," okay? And then I cautioned, "As explained
23 in the earlier coin-flipping examples, reporting a
24 willingness to pay for an individual respondent would not
25 be sufficiently precise; however, the overall market level 17:33:50

1 willingness to pay is sufficiently precise." So I 17:33:54
2 definitely cautioned that. 17:33:58
3 Now, in -- in paragraph 73, doing those median 17:34:00
4 calculations, so doing the medians within the sampler, 17:34:04
5 okay, so in the -- getting the posterior distribution of 17:34:08
6 the medians, I then, having gotten that posterior 17:34:11
7 distribution of the medians, we can now say something like 17:34:17
8 the willingness to pay estimates at a base price of 199, 17:34:20
9 customers would be willing to pay \$40 more for a smartphone 17:34:25
10 that has the functionality associated with patent '915. 17:34:28
11 And then it goes on from there. 17:34:32
12 And you'll note that how this, then, is used is up 17:34:35
13 in paragraph 104, and it says, "The median willing -- 17:34:39
14 consumer willingness to pay calculation leads price premium 17:34:44
15 estimates that are similar to what I estimate using the 17:34:48
16 market simulation." So I'm using it for a convergent 17:34:51
17 check. 17:34:54
18 Q. So if we look at -- if we look at any one 17:34:57
19 respondent's draws, that doesn't really -- that doesn't 17:35:11
20 really tell us their willingness to pay for -- for any of 17:35:17
21 the features? 17:35:20
22 A. Again, let's go back to the coin-flipping example. 17:35:23
23 If I end up with two heads, my estimate, you know, for that 17:35:26
24 particular respondent, you know, in fact, my maximum 17:35:31
25 likelihood estimate is 100 percent. You know, so I'm not 17:35:35

1 going to be very precise. 17:35:38

2 Q. Okay. 17:35:40

3 A. So in -- when I look at any individual, I have 48 17:35:41

4 constraints, plus I have a number of monotonicity 17:35:47

5 constraints, and I think if we count up the number of 17:35:53

6 features, it's something like 7 times 3. Not completely, 17:35:55

7 because there's -- not everything's monotone. So, you 17:36:00

8 know, I basically have, what, maybe 60 constraints for 20, 17:36:04

9 21 features. I can't expect that to be precise. However, 17:36:10

10 when I get up to 20,000 constraints, which is what I have 17:36:13

11 for the population, I can expect that to be fairly precise. 17:36:18

12 So, no, you should not look at it at the 17:36:23

13 individual level, and as in the documents that you don't 17:36:26

14 like to refer to, you say, well, some of these appear to be 17:36:29

15 negative, again, just doing the arithmetic calculation, 17:36:32

16 almost none of those are sufficiently precise to -- to say 17:36:36

17 they're negative. 17:36:40

18 What we can say is that for roughly -- and also 17:36:42

19 they're conflated. We can look at it the other way around 17:36:45

20 and say that for 94 percent of the people, they have 17:36:49

21 positive partworths for one of the patents. But I don't 17:36:52

22 want to conflate it either way. 17:36:55

23 The key thing is none of those are significant -- 17:36:59

24 I think one of those are significant out of all those 17:37:02

25 tests. And there are people who -- who don't value. I 17:37:04