

Exhibit T

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

4 APPLE INC., a California Case No.
5 corporation,
6
7 Plaintiff,
8
9 v.
10
11 SAMSUNG ELECTRONICS CO.,
12 LTD., a Korean business
13 entity; SAMSUNG ELECTRONICS
14 AMERICA, INC., a New York
15 corporation; SAMSUNG
16 TELECOMMUNICATIONS AMERICA,
17 LLC, a Delaware limited
18 liability company,
19 Defendants.

20 C O N F I D E N T I A L
21 A T T O R N E Y S ' E Y E S O N L Y
22 O U T S I D E C O U N S E L

23 VIDEOTAPED DEPOSITION
24 BENJAMIN B. BEDERSON, Ph.D.
25 Washington, D.C.
Saturday, September 17, 2011
9:30 a.m.

Job No. 41965

Reporter: Linda S. Kinkade, RDR, CRR, RMR, CSR
Videographer: Conway Barker

1
2
3
4
5 The following is the videotaped deposition
6 of BENJAMIN B. BEDERSON, Ph.D. held at the offices
7 of:
8
9

10 Morrison & Foerster
11 2000 Pennsylvania Avenue, N.W.
12 Washington, DC 20005
13
14
15

16 Taken pursuant to applicable Rules of Civil
17 Procedure, before Linda S. Kinkade, Registered
18 Diplomate Reporter, Certified Realtime Reporter,
19 Registered Professional Reporter, Registered Merit
20 Reporter, Certified Shorthand Reporter (CA), and
21 Notary Public, in and for the District of Columbia.
22
23
24
25

1 APPEARANCES:

2
3 On Behalf of Plaintiff APPLE INC., a
4 California corporation:

5 MICHAEL A. JACOBS, ESQUIRE
6 DEOK KEUN AHN, ESQUIRE
7 Morrison & Foerster
8 425 Market Street
9 San Francisco, California 94105
10
11
12
13

14 On Behalf of Defendant SAMSUNG ELECTRONICS
15 CO.:

16 ERIC HUANG, ESQUIRE
17 AARON KAUFMAN, ESQUIRE
18 Quinn Emanuel Urquhart & Sullivan
19 51 Madison Avenue
20 22nd Floor
21 New York, New York 10010
22
23
24
25

1 BY MR. JACOBS:

2 Q. And is it the very same code that
3 executes that functionality in the following two
4 conditions: Condition 1, the cursor highlight
5 bar is between email header images in the list;
6 condition 2, the email header is in the white
7 display space underneath the last -- below the
8 last of the email headers in the list?

9 MR. HUANG: Objection to the form of
10 the question.

11 THE WITNESS: You used the word email
12 header where I think you meant highlight cursor.

13 BY MR. JACOBS:

14 Q. I think I did, yes. So let me ask it
15 again. Maybe now that I have stated it orally I
16 can do it more clearly.

17 There are two possibilities for the email
18 highlight cursor to be out of alignment with
19 email headers. One possibility is it's in
20 between email headers; the other possibility is
21 it's after the last of the email headers.
22 Correct?

23 A. Yes.

24 Q. Is it the exact same code that causes
25 the email header to snap into alignment with the

1 email cursor bar in either of those two cases?

2 MR. HUANG: Same objection.

3 THE WITNESS: So there is only one
4 code sequence of flow that performs snapping,
5 and that same sequence is used wherever the
6 email list is positioned vertically, including
7 when the bottom-most email header is above the
8 bottom of the screen.

9 BY MR. JACOBS:

10 Q. And the -- it is possible that, when
11 the user lifts -- in the case of the depiction
12 on page 6 of your declaration -- when the user
13 lifts his finger, that the blue cursor bar and
14 email header image are in alignment, correct?

15 MR. HUANG: Objection to the form.

16 THE WITNESS: So at the time the user
17 lifts off, it's possible that one of the email
18 headers is already completely aligned underneath
19 the highlight cursor -- highlight cursor.

20 BY MR. JACOBS:

21 Q. That's my question.

22 A. Yes, that's possible.

23 Q. So I think you did this before, but if
24 you could just again point us to the code that
25 tests whether that condition has been met.

1 Do you see that?

2 A. Yes, I do.

3 Q. What's the reference to depending on
4 the degree of the over-pan?

5 MR. HUANG: Objection, form.

6 THE WITNESS: If in the example that's
7 described here with these images, for a concrete
8 example, if the user has dragged -- moves --
9 touches the screen, drags their finger up so
10 they are moving the email list up, and the
11 bottom-most email header is above the bottom of
12 the screen, if -- so this is the over-pan
13 position -- if they have over-panned to a degree
14 such that that bottom email header is partially
15 overlapping with the highlight cursor, then it
16 will snap back so that the bottom-most email
17 header is aligned with the bottom of the screen
18 in this situation.

19 BY MR. JACOBS:

20 Q. And if -- so in order for the snap
21 back to occur, there must be some partial
22 overlap at the end -- when the user lifts his
23 finger?

24 MR. HUANG: Objection to the form.

25 THE WITNESS: If the -- it depends on

1 how much the bottom email header is above the
2 bottom of the screen. So if it's -- that's why
3 I said, depending on the degree of the over-pan,
4 if the degree is such that there is some
5 overlap, then it will snap back.

6 BY MR. JACOBS:

7 Q. And if the degree is such that there
8 is no overlap, what happens?

9 A. I believe then it does not snap back.
10 Then I believe it just stays in that position.

11 Q. And that's just a function of the
12 state of the code as -- let me start over again.

13 That is because the code in its -- in the
14 state in which you've provided it to us doesn't
15 have a case for no overlap or beyond overlap; is
16 that correct?

17 A. Well, the code -- it does what it
18 does. I mean, it does a very specific set of
19 features and interactions, as we talked about,
20 and that's what it does. So --

21 Q. Let me ask it this way. Point us
22 where in the code the test is set forth in a way
23 that such that that constraint, that there must
24 be some overlap is present.

25 A. So in Exhibit 212 --

1 Q. Email.cs.

2 A. -- Email.cs, pages 29 to 30, method
3 SnapObjectToHighlight, around the fifth line of
4 code it calls, GetIntersectingEmailItemBounds.
5 As we discussed earlier, this returns the
6 rectangle representing the bounds of the email
7 header that most overlaps the highlight cursor
8 implemented by that
9 GetIntersectingEmailItemBounds method. If we're
10 in this condition where there is no email header
11 that overlaps -- sorry. If we're in the
12 condition where the bounds of every email header
13 does not overlap the bounds of the highlight
14 cursor, then this method will return a
15 sourceRectangle whose value is empty.

16 The next line of code in
17 SnapObjectToHighlight says, if sourceRectangle is
18 not empty, then it calls SnapPositionToObject. So
19 in the case we're talking about, sourceRectangle
20 would be empty and this SnapPositionToObject method
21 would not get called.

22 Q. So I may not have been tracking your
23 description. On the bottom of page 29, three --
24 well, four lines up from the bottom, if you
25 include the brace, there is if sourceRectangle

1 panning or attempting to pan the screen.

2 Q. And how does it -- what happens when
3 there is no, in our case, where there is no Zone
4 to the right?

5 A. I'm just going to look at this code
6 for a moment. I'll figure this out in another
7 minute so that it will settle.

8 Q. Not a problem.

9 A. To be honest, I'm having a little
10 trouble understanding exactly how this code
11 works. My interpretation of the code is not
12 consistent with how it behaved, so I'm likely
13 misunderstanding something here.

14 Q. Let me come at the topic this way. It
15 is the case, as we discussed, that you can't
16 cause the Zone to move to the left when the
17 right-most boundary of the Zone does not have
18 adjacent to it on the right another Zone,
19 correct?

20 MR. HUANG: Objection to the form.

21 THE WITNESS: I think -- let me
22 just --

23 BY MR. JACOBS:

24 Q. Say it your way.

25 A. There is a grid of 3x3 Zones that's

1 fixed in the code. So if you were in the
2 right-most column, that is, any of the three
3 right Zones, and you try and drag to the left,
4 you will not be able to drag to the left.

5 Q. Why? Why did you design it that way?

6 MR. HUANG: Objection to the form.

7 THE WITNESS: I don't recall our
8 thinking in that specific design decision.

9 BY MR. JACOBS:

10 Q. Was it a design decision?

11 MR. HUANG: Objection to the form.

12 THE WITNESS: Or possibly a lack of a
13 design decision. I don't remember what our
14 thinking was for that particular interaction
15 detail.

16 BY MR. JACOBS:

17 Q. The source code for LaunchTile, were
18 you able to locate that?

19 A. No, I was not.

20 Q. Any idea what happened to it?

21 A. Well, I know that Amy Karlson was
22 primarily responsible for writing it. I believe
23 she managed source code, and I don't think I
24 probably followed it in that much detail. So
25 that's why I -- when I looked, I didn't have it,

1 well demonstrating it. So that's what I recall.

2 BY MR. JACOBS:

3 Q. Were you demonstrating the software in
4 a live basis in conformance with what was
5 demonstrated on the video? Were you trying to
6 map what was on the video to your live
7 demonstration?

8 MR. HUANG: Objection to the form.

9 THE WITNESS: No. The video was a
10 short, you know, narrow summary, and when we
11 gave live demos it was much more casual. We
12 would typically hand the device over to whoever
13 we were showing it to, let them do whatever they
14 want, ask us any questions. They had already
15 seen the video, so they typically would want to
16 go beyond that.

17 BY MR. JACOBS:

18 Q. Do you recall anything specifically
19 being demonstrated in May 2005 that wasn't in
20 the video?

21 A. I don't recall the specific details of
22 what was or was not shown to any specific
23 individual.

24 Q. Let me show you an email that you
25 produced to us.

1 Then at time 1:15 seconds the user again
2 touched the screen, dragged down, let go, which
3 resulted in snapping forward to the Zone above.

4 And that's the end of the video.

5 BY MR. JACOBS:

6 Q. In either of the videos did we see the
7 activity that's described in paragraph 14 of
8 your declaration?

9 A. Neither video showed the activity
10 described in paragraph 14 of my declaration.

11 Q. And that's what your declaration calls
12 the under-panning case, correct?

13 A. I don't think -- paragraph 14 doesn't
14 use that term, but I believe this describes the
15 concept that was described earlier as
16 under-panning.

17 Q. And to get back to the way the source
18 code works, that's the case where in the
19 three-stage interaction sequence where, after
20 landing on the screen, the finger is moved less
21 than 20% in the relevant direction -- sorry --
22 yes, less than one-sixth in the relevant
23 direction such that there is what the
24 declaration describes as a snapback.

25 A. Correct.

1 LaunchTile is motivated by the idea that, if
2 there are some places that are convenient for
3 the interface to go to, then you should make the
4 interface naturally take you to those places and
5 not let you get stuck in inconvenient places.

6 Q. So you published an article recently,
7 "The Promise of Zoomable User Interfaces."

8 Mark this as the next in order.

9 (Exhibit No. 222 marked for
10 identification.)

11 BY MR. JACOBS:

12 Q. The Promise of Zoomable User
13 Interfaces by Benjamin B. Bederson, 2011, Taylor
14 & Francis. What was this published in?

15 A. This was published in a journal named
16 Behaviour & Information Technology.

17 Q. In 2011?

18 A. Yes.

19 Q. On page 4 you have a discussion of
20 Desert Fog citing Jul and Furnas. Desert Fog
21 labels a phenomena that you describe as allowing
22 users to fly through the space going absolutely
23 anywhere including deep into the spaces between
24 objects. Do you see that?

25 A. No, actually. Sorry. Where are you?

1 Q. It's on the right-hand column of --
2 it's such a vivid image I thought it might just
3 jump from the page. The right-hand column of
4 page 4, second paragraph.

5 A. Yes, I see this.

6 Q. So just to maybe start a little bit
7 earlier, different zoomable user interfaces have
8 also had various navigation mechanisms, which
9 are ways for users to move through the space.
10 Again, there is a trade-off between flexibility
11 and usability. Some interfaces allow users to
12 fly through the space going absolutely anywhere,
13 including deep into the spaces between objects,
14 resulting in some researchers labeling this
15 phenomenon Desert Fog, Jul and Furnas. Then you
16 say, very few other applications let a user
17 navigate beyond the actual content.

18 Can you explain the contrast you were
19 drawing there between ZUIs and other applications?

20 MR. HUANG: Objection to the form.

21 THE WITNESS: Sure. So if we continue
22 reading this paragraph, it describes this idea
23 of not letting you navigate between the actual
24 content. I believe it says, almost every
25 document browser and editor limits navigation to

1 the available content with the notable exception
2 of Microsoft Excel's scroll bar arrows, Apple
3 numbers, and Google -- I'm sorry -- with the
4 notable exception of Microsoft Excel's scroll
5 bar arrows. Apple numbers and Google
6 spreadsheet, on the other hand, do limit
7 navigation. On the other hand, some interfaces
8 allow you only to click on objects to zoom into
9 them and click on a zoom out button to zoom out,
10 making it impossible to get lost, but also
11 giving less control over exactly where you look.

12 So the point of this paragraph was to
13 describe that there are some applications that let
14 the user navigate in space possibly -- navigating
15 can be simple scrolling or it could be this kind of
16 zooming navigation, which is a little bit more
17 uncommon, or it could be 3-D navigation in a 3-D
18 world.

19 Sorry. I was describing that sometimes you
20 can navigate to a place where there is no content.
21 If there is no content, then you're kind of in a
22 place that essentially -- typically -- represented
23 with an empty screen. And that was a concern
24 because that would make a user feel disoriented
25 since there is nothing on the screen.

1 And I said that it was more common for
2 applications to stop a user from navigating to a
3 place where there was no content, although it
4 occurred, both in widespread applications like Excel
5 and in many ZUIs, in at least those.

6 Q. So the basic contrast you were drawing
7 was between those ZUIs that are flexible but
8 haven't addressed this problem of getting lost
9 in Desert Fog, and most applications which do
10 constrain you to the space that's filled by
11 content. Is that -- am I capturing the essence
12 of your paragraph correctly?

13 MR. HUANG: Objection to the form of
14 the question.

15 THE WITNESS: The paragraph said --
16 well, it didn't say "most." It said there were
17 few applications that let you move to a place
18 where there is no content, although I did
19 describe some, and many constrained you to
20 navigating only within available, visible
21 content.

22 BY MR. JACOBS:

23 Q. And that -- but you were describing
24 that, as of 2011, there remains this problem in
25 ZUIs of flying through the space going

1 underline the point, if one were to click on or
2 otherwise seek to get the underlying text of the
3 email on this device, the device does not have
4 the full email underneath the header, correct?

5 MR. HUANG: Objection to the form of
6 the question.

7 THE WITNESS: If you tap on one of
8 these email, I believe -- so, I guess, if you
9 press this button, it opens up a special kind of
10 menu, and, if you press the plus button, then it
11 will open up a representation of an email.

12 BY MR. JACOBS:

13 Q. Is that the same email for every
14 header?

15 A. Yes, it is.

16 Q. So it's kind of a -- this is really a
17 prototype of what it could -- what this device
18 could do if you figured out how to get an email
19 client to create images for each header, store
20 them in the database, and link them to the
21 underlying message, correct?

22 A. I think you just proposed a possible
23 architecture for implementing an email system.
24 So what I would say is this is a prototype that
25 demonstrates how email can work in this

1 environment.

2 Q. With a prepopulated database of images
3 representing email headers and a single email
4 text, correct?

5 MR. HUANG: Objection to the form.

6 THE WITNESS: I would say with a
7 hard-coded set of email headers and a single
8 content of email.

9 BY MR. JACOBS:

10 Q. Thank you.

11 MR. JACOBS: Let's go off the record
12 again.

13 VIDEOGRAPHER: Off the record at 4:43.

14 (Proceedings recessed.)

15 VIDEOGRAPHER: Back on the record at
16 4:45.

17 BY MR. JACOBS:

18 Q. So a couple other devices were given
19 to us by Quinn Emanuel, counsel for Samsung, and
20 I want to just check with you if you know
21 anything about the providence of those devices
22 and the appearance that one sees when one opens
23 them up.

24 So we have this iPAQ here that we
25 received, and we've taken a picture of the

1 A. Correct.

2 MR. JACOBS: I think we're done.

3 Thank you.

4 MR. HUANG: Thank you.

5 THE WITNESS: Thank you.

6 VIDEOGRAPHER: This concludes the
7 deposition of Dr. Bederson. Off the record at
8 4:57 and it consists of five tapes.

9 (Proceedings concluded.)

10

11 //

12 (Signature having not been waived, the
13 deposition of BENJAMIN B. BEDERSON, Ph.D.
14 concluded at 4:57 p.m.)

15

16

17

18

19

20

21

22

23

24

25

CERTIFICATE OF SHORTHAND REPORTER
NOTARY PUBLIC

I, Linda S. Kinkade, RDR, CRR, RMR, CSR,
the notarial officer before whom the foregoing
proceedings were taken, do hereby certify that the
foregoing transcript is a true and correct record of
the proceedings; that said proceedings were taken by
me stenographically, to the best of my ability, and
thereafter reduced to typewriting; and that I am
neither counsel for or related to, nor employed by
any of the parties to this case and have no
interest, financial or otherwise, in its outcome.

IN WITNESS WHEREOF, I have hereunto set my
hand and affixed my notarial seal this 17th day of
September 2011.

Linda S. Kinkade

NOTARY PUBLIC IN AND FOR
THE DISTRICT OF COLUMBIA

My commission expires: July 14, 2012