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 1              IN THE UNITED STATES DISTRICT COURT
            FOR THE EASTERN DISTRICT OF TEXAS
 2                    TYLER DIVISION

 3   MIRROR WORLDS, LLC          *   Civil Docket No.
                                 *
 4                               *   6:08-CV-88
     VS.                         *   Tyler, Texas
 5                               *
                                 *   September 28, 2010
 6   APPLE, INC., ET AL          *   1:30 P.M.

 7

                    TRANSCRIPT OF JURY TRIAL
 8                    AFTERNOON SESSION
            BEFORE THE HONORABLE LEONARD DAVIS
 9             UNITED STATES DISTRICT JUDGE

10   APPEARANCES:

11                    FOR THE PLAINTIFF

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     MR. KENNETH STEIN
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19

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21   MS. JUDY WERLINGER, CSR
     Official Court Reporters
22   211 West Ferguson, Third Floor
     Tyler, TX   75702
23   903/590-1171

24   (Proceedings recorded by mechanical stenography,
     transcript produced on CAT system.)
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 1                    FOR THE DEFENDANTS

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 1                    P R O C E E D I N G S
 2                    COURT SECURITY OFFICER:  All rise.
 3                    (Jury in.)
 4                    THE COURT:  Please be seated.
 5                    All right.  Ladies and Gentlemen of the
 6   Jury, I apologize for keeping you waiting.  It wasn't
 7   any of these attorneys' faults.  I had another case that
 8   had to have some attention.  It just went longer than I
 9   thought it would.  So I apologize for that.
10                    But we will get started and see what kind
11   of progress we can make.
12                    Mr. Carroll, how did y'all decide you
13   wanted to split that time up?
14                    MR. KELLEY:  Your Honor, I believe that
15   what we're doing is -- they're simply figuring up the
16   number of lines, and it's going to be divided
17   proportionally.  And the people that are working on that
18   will determine the exact percentage and provide it to
19   your staff just like -- if that's okay.
20                    THE COURT:  Okay.  When will you have
21   that?
22                    MR. KELLEY:  We should have it, I would
23   think, sometime the middle of the afternoon.  Probably
24   by the next break.  We'll try.
25                    THE COURT:  All right.  Let me have that.
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 1  And y'all are charged with 50 minutes, so I need to take

 2  that off and add it on to them, so let me know, all

 3  right?

 4              MR. KELLEY:  Your Honor, I'll be doing

 5  the -- the -- reading this part on this deposition

 6  for -- because of Mr. Carroll's voice, and Chuck Cantine

 7  will be serving as -- reading the part of the witness

 8  mainly because the witness is of French extraction, and

 9  somebody like me who grew up in Commerce, Texas, should

10  not be pronouncing French words.

11              THE COURT:  What is the name of the

12  witness?

13              MR. KELLEY:  The witness is Bertrand

14  Serlet, S-E-R-L-E-T.

15              THE COURT:  And how much time is this?

16              MR. KELLEY:  Your Honor?

17              THE COURT:  How much time is this

18  deposition?

19              MR. KELLEY:  Probably should be just a

20  few minutes shorter than the last one.

21              THE COURT:  Okay.  And do you know how

22  you're going to divide that time up yet either?

23              MR. KELLEY:  We're going to do it the

24  same way, Your Honor.  We're going to do the lines.  We

25  don't have a line count at this time.
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1   THE COURT: All right. You may proceed.

         2   MR. KELLEY: Beginning at -- on Page 5,

         3 Line 23:

         4   (Deposition excerpt read.)

         5   QUESTION: Just so I'm clear, can you

         6 tell me all the educational degrees you have?

         7   ANSWER: So I have a doctorate in

         8 computer science from Orsay. I have a master's in

         9 mathematics from Orsay, and a bachelor's in physics from

        10 Orsay.

        11   QUESTION: So all of your degrees are

        12 from the University of -- University of Paris in Orsay?

        13   ANSWER: Yes.

        14   MR. KELLEY: Going to Page 11:

        15   QUESTION: Would you please describe for

        16 me your professional work experience since receiving

        17 your doctorate in computer science?

        18   ANSWER: Well, as I was receiving my

        19 computer science doctorate, I was working with -- at --

        20 well, as I was receiving my computer science doctorate,

        21 I was working at INRIA, which is a French research

        22 institute.

        23   And after that, I left and went to work

        24 at Xerox. And I believe it was from '84 to '88, and

        25 after that, at NeXT. That was -- that was then actually

1   acquired by Apple. It's actually very small and

 2   concise.

 3   MR. KELLEY: Going next to Page 79,

 4   Line 17.

 5   You there?

 6   MR. CANTINE: Which page?

 7   MR. KELLEY: 79. You there?

 8   MR. CANTINE: Yes.

 9   QUESTION: Now, we've talked about

10   Spotlight briefly. What is Spotlight?

11   MR. RANDALL: Excuse me for one second.

12   MR. KELLEY: I'm sorry.

13   MR. RANDALL: Your Honor, for some

14   reason, I thought we were going to Page 26.

15   MR. KELLEY: Unless I missed it... oh,

16   actually, I did. Sorry.

17   MR. RANDALL: Okay.

18   MR. KELLEY: Hang on just a minute. I

19   don't -- just a moment, Your Honor. I don't know that I

20   have -- I don't know that I have the

21   counter-designations of yours.

22   Do you have one with

23   counter-designations?

24   Your Honor, it may be at the back bench.

25   May I approach there just for a moment?

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 1                  MR. RANDALL:  Your Honor, if I may just

 2   provide him a copy of it.  I think we've got an extra

 3   copy.

 4                  THE COURT:  Okay.

 5                  MR. KELLEY:  Does yours have it?

 6                  MR. RANDALL:  I don't think it's the

 7   counter -- I think it's your testimony.

 8                  MR. KELLEY:  I know, but I've got mine.

 9   I just want to make sure I've got your

10   counter-designations on yours.

11                  MS. ELLOUICH:  It should have both.

12                  MR. KELLEY:  Okay.  Go to Page 26,

13   Line 8.

14                  You there?

15                  MR. CANTINE:  Yes.

16                  MR. KELLEY:  Okay.

17                  QUESTION:  When did you say NeXT was

18   required (sic) by Apple again?

19                  ANSWER:  The discussions took place in

20   December '96, and the deal was finalized in the spring

21   of '97.

22                  QUESTION:  What was your first title at

23   Apple that you can remember?

24                  ANSWER:  Well, it was either Vice

25   President or it was Senior Director, and I -- frankly, I
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1 don't remember that.

2   QUESTION: Vice President of what?

3   ANSWER: I think it was called Platform

4 Technologies at the time.

5   QUESTION: Please tell me all the titles

6 that you can remember having at Apple.

7   ANSWER: So I think, but I'm not sure,

8 that I was Senior Director for a portion of time and

9 Vice President and Senior Vice President and -- a few

10 years ago. Probably five years ago.

11   MR. KELLEY: Going to Page 31:

12   QUESTION: Are you currently a Senior

13 Vice President at Apple?

14   ANSWER: Correct.

15   QUESTION: Senior Vice President of what

16 group?

17   ANSWER: I'm Senior Vice President of

18 Software Engineering.

19   QUESTION: And as Senior Vice President

20 of Software Engineering, what are your job duties?

21   ANSWER: To make sure that the products

22 that are responsible are shipped and are innovative and

23 to make sure the teams have growth and develop great

24 products.

25   QUESTION: What projects are you

1 responsible for?

2   ANSWER: I'm primarily responsible for

3 Mac OS X, which is this operating system of the Mac.

4 I'm also responsible for some layers of the OS that go

5 into the iPhone OS, and a number of secondary products,

6 like Mac OS X Server, Apple Remote Desktop, QuickTime,

7 and probably a few others.

8   QUESTION: Is it fair to say that your

9 primary -- strike that.

10   Is it fair to say that the majority of

11 your time currently at Apple is spent on work regarding

12 the Mac OS?

13   ANSWER: Correct.

14   QUESTION: Mac OS X operating system?

15   ANSWER: Correct.

16   MR. KELLEY: Going to Page 34:

17   QUESTION: Currently, as Senior Vice

18 President, who do you report to?

19   ANSWER: I report to Steve Jobs.

20   QUESTION: Anybody else?

21   ANSWER: No.

22   QUESTION: How long have you known Steve

23 Jobs?

24   ANSWER: The first time I met him was

25 during my interview for NeXT in September '88 --

1 correct, October '88.

 2   QUESTION: And do you have people

 3 reporting to you at Apple currently?

 4   ANSWER: Yes, I do.

 5   QUESTION: Approximately how many?

 6   ANSWER: Indirectly, about a thousand.

 7   QUESTION: How many Senior Vice

 8 Presidents are at Apple today?

 9   ANSWER: I do not know the number.

10   QUESTION: Approximately do you know?

11   ANSWER: I believe less than ten.

12   QUESTION: When you report to Steve Jobs,

13 how is that reporting done: Verbally, e-mail, phone?

14   ANSWER: For clarification, do you mean

15 when I report information or --

16   QUESTION: Yes.

17   ANSWER: So primarily, the primary means

18 of communication is e-mail, but there's occasional

19 meetings. And there's regular meetings as well.

20   QUESTION: How extensive is your contact

21 with Mr. Jobs?

22   ANSWER: It varies. For the last six

23 months, there has been very little contact, but prior to

24 that, I would see them typically two or three times a

25 week.

1   QUESTION: When you say you would see him

    2   two to three times a week, do you mean in person?

    3   ANSWER: Yes.

    4   MR. KELLEY: Now, I believe we go to 79.

    5   QUESTION: Now, we've talked about

    6   Spotlight briefly. What is Spotlight?

    7   ANSWER: Spotlight is a way to search the

    8   user's information and to present that to the user.

    9   QUESTION: How does the search work?

    10   ANSWER: That's the back end, which is an

    11   engine that has an index which stores the metadata,

    12   information like that, information about files, and the

    13   engine is exercised from the user interface.

    14   And when the user types a query, the

    15   engine is exercised and returns a list of results that

    16   is presented to the user.

    17   QUESTION: So Spotlight is a search

    18   engine; is that accurate?

    19   ANSWER: Search engine is a

    20   categorization that includes a number of things. You

    21   know, like Google search engine, the Yahoo! search

    22   engine, but, generally speaking, I think that is a

    23   correct statement.

    24   QUESTION: How would you describe

    25   Spotlight?

1   ANSWER: Spotlight is both the engine and

 2   the user interface for it. It's a set of technologies.

 3   QUESTION: Who came up with the name

 4   Spotlight?

 5   ANSWER: I do not recall who came up with

 6   the name.

 7   QUESTION: What -- was it originally

 8   called Matador?

 9   ANSWER: Matador was a code name for

10   Spotlight before we had a public name.

11   QUESTION: Spotlight is the public name,

12   correct?

13   ANSWER: Yes.

14   QUESTION: Matador is the internal code

15   name?

16   ANSWER: Yes.

17   QUESTION: Do you think Spotlight has

18   been well-received by consumers?

19   ANSWER: That's a highly subjective kind

20   of notion, well-received, but I know that a number of

21   users use that facility, and it's especially useful in

22   mail where you can retrieve a message by just typing a

23   word.

24   QUESTION: I understand it's a -- I

25   understand it's a subjective inquiry. I'm asking for

1 your opinion.

 2   Do you think it has been well-received?

 3   ANSWER: Yes.

 4   QUESTION: Do you believe Spotlight has a

 5 competitive advantage over Windows Explorer?

 6   ANSWER: That's a very subjective

 7 question.

 8   QUESTION: Go ahead, please.

 9   ANSWER: So I think Spotlight works well,

10 works fast, has nice user interface, which I'm sure is

11 appreciated by a number of our customers.

12   QUESTION: Who would you say was tasked

13 with the primary responsibility of development of

14 Spotlight?

15   MR. KELLEY: Oh, excuse me. I missed

16 one.

17   On Page 86:

18   QUESTION: Were you involved in the

19 development of Spotlight at all?

20   ANSWER: Yes. I was in charge of the

21 team that developed Spotlight and various pieces of

22 Spotlight.

23   QUESTION: Who would you say was tasked

24 with the primary responsibility of the development of

25 Spotlight?

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 1                    ANSWER:  I was.

 2                    QUESTION:  Who do you think at Apple

 3   knows the most about the development of Spotlight?

 4                    ANSWER:  There's a number of folks who

 5   have knowledge of different pieces.  There's some five

 6   system pieces.  There's some index pieces, and you have

 7   some UI pieces and some application pieces.

 8                    QUESTION:  Is there anyone at Apple who

 9   knows all the pieces?

10                    ANSWER:  There's probably a number of

11   folks who have varying degrees of knowledge of a number

12   of those pieces, yes.

13                    QUESTION:  Would you name those people,

14   please?

15                    ANSWER:  I would say for the UI, that's

16   the UI Team, Scott Forstall, Greg Christie.

17                    For the file system aspects, there's

18   Dominic Giampaolo.

19                    For the frameworks and the indexing,

20   there are people like Yan Arrouye.

21                    For the integration in various

22   application as the people in the applications, so

23   e-mails, Brandon Longlar and Pavel Cisler.

24                    MR. KELLEY:  Going to Page 93.

25                    QUESTION:  I believe Spot -- I believe
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 1  Spotlight was a feature of Tiger.

 2              MR. CANTINE:  I'm sorry?

 3              MR. KELLEY:  Bottom of Page 92.  Excuse

 4  me.

 5              QUESTION:  When was Spotlight first

 6  incorporated into an Apple product?

 7              ANSWER:  I believe Spotlight was a

 8  feature of Tiger.

 9              QUESTION:  Was that the first vision of

10  Mac OS X that had Spotlight?

11              ANSWER:  It was the first version of Mac

12  OS X that had Spotlight technology.  Of coarse, Mac OS X

13  has had the search capability for a long time.  That's

14  the predecessor technology.

15              QUESTION:  What was that predecessor

16  search technology called?

17              ANSWER:  So we had V-Twin AIAT, which

18  kind of was an engine.  So V-Twin was the name of the

19  technology -- search technology.

20              And for the UI, we had something called

21  Sherlock.  That was able to search all kinds of

22  information, including searching in the file system.

23  And that predates what we've done with Spotlight.

24              QUESTION:  How do you spell V-Twin?

25              ANSWER:  Up case V, dash, and up case T,
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1 lowercase, W-I-N.

     2   QUESTION: Does the V stand for anything

     3 in V-Twin?

     4   ANSWER: I have no idea what it stands

     5 for.

     6   QUESTION: And Sherlock is spelled --

     7   ANSWER: Yes.

     8   QUESTION: And those were the predecessor

     9 search technology --

    10   ANSWER: Yes.

    11   QUESTION: -- prior to Spotlight?

    12   ANSWER: Yes.

    13   QUESTION: Any other predecessor search

    14 technology prior to Spotlight at Apple?

    15   ANSWER: There's been a number of things

    16 around these technologies. I believe we prepared a

    17 library code search kit. So there's been a number of

    18 related technologies, and some of them that we still

    19 use. I believe we still use these technologies for

    20 searching our help.

    21   QUESTION: So Spotlight has been on

    22 Macintoshes since the introduction of Tiger; is that

    23 right?

    24   ANSWER: Yes.

    25   QUESTION: On every Macintosh since the

1 Tiger?

 2   ANSWER: Yes.

 3   QUESTION: What are the application

 4 programs and other software that uses Spotlight, a

 5 complete list as far as you know?

 6   ANSWER: I cannot give you a complete

 7 list. I can just give you a few examples, the ones that

 8 come to mind. And also, we have a public API for

 9 Spotlight, which means that there's a number of third

10 parties that could use that.

11   I don't have the list. I don't think the

12 list exists.

13   QUESTION: Sure. So the application

14 programs on other software that uses Spotlight as far as

15 the Apple products go, would you please name them?

16   ANSWER: Okay. Mail, Finder, address

17 book, font subsystem, Xcode. There may be more, but

18 these are the ones I'm remembering.

19   MR. KELLEY: Going to Page 105:

20   QUESTION: So as far as you know, Apple

21 has no plans not to include Spotlight in the feature

22 operating systems?

23   ANSWER: Correct.

24   QUESTION: Let's ask (sic) about Sherlock

25 and Spotlight. Tell me the similarities and the

1   differences at a high level.

2   ANSWER: So Spotlight lets a user search

3   for his or her files, and Spotlight uses metadata on the

4   file.

5   Sherlock -- that was the previous

6   technology -- was based primarily in searching for the

7   full text of the file. Sherlock was not aware of

8   metadata, and that's a big difference.

9   QUESTION: Sherlock searched for the full

10 text of the file name or the file content?

11   ANSWER: File content.

12   QUESTION: Just the file content or could

13 it also search for the file name?

14   ANSWER: Yes. It could also search for

15 the file name.

16   QUESTION: So full text contents or the

17 file name?

18   ANSWER: Yes. But the file content is a

19 much more challenging problem than file name, because

20 you have a lot more text than just the name.

21   QUESTION: But Sherlock could do that?

22   ANSWER: Yes.

23   QUESTION: And Spotlight can also do

24 that?

25   ANSWER: Yeah.

1   QUESTION: Spotlight can search for video

2 files, correct?

3   ANSWER: Yes.

4   QUESTION: Can Sherlock search for video

5 files?

6   ANSWER: I don't think so, because there

7 was no -- no importer engine.

8   QUESTION: Who, if anyone, was first

9 charged with the development of Spotlight?

10   ANSWER: There were a number of people

11 who had different responsibilities for developing

12 Spotlight as kind of a number -- as kind of number of

13 technology. To get the -- to get the kind of the whole

14 chain working, one of the persons who was probably the

15 most in charge of it was Yan Arrouye.

16   QUESTION: Why did Apple first decide --

17 why did Apple first decide to develop Spotlight?

18   ANSWER: Apple likes to bring features

19 that offer functionality for its users, and the ability

20 to search a user's file was deemed an important thing to

21 do. And that's why we developed Sherlock and Spotlight.

22   QUESTION: So would you agree that

23 Spotlight is an improvement over Sherlock?

24   ANSWER: I think so. For most people --

25 for most people would perceive that as an improvement.

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 1              QUESTION:  So when Spotlight was
 2   introduced in Tiger, do you believe it was not -- it was
 3   a new system at the time?
 4              ANSWER:  The set of functionality offered
 5   by Spotlight was indeed new, because you couldn't do
 6   that prior to Spotlight.
 7              QUESTION:  And what sort of functionality
 8   are you referring to?
 9              ANSWER:  The ability to search a user's
10   file via metadata or full text.
11              QUESTION:  Can you please mark this as
12   Serlet Exhibit 2?
13              Have you seen this document before,
14   Mr. Serlet?
15              ANSWER:  No.
16              QUESTION:  The first sentence on the
17   third paragraph, quote:  The most revolutionary feature
18   of Tiger, according to Jobs, is a new search tool known
19   as Spotlight.
20              ANSWER:  I'm sorry.  You're in which
21   paragraph?
22              QUESTION:  The third paragraph from the
23   top.
24              ANSWER:  Competitor -- oh, yes.
25              QUESTION:  The most, quote,
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1 revolutionary, unquote, feature of Tiger, according to

   2 Jobs, is a new search tool known as Spotlight.

   3   ANSWER: Yes. I've heard Steve say --

   4 obviously, yes, for a number of technologies that it's

   5 revolutionary.

   6   QUESTION: What do you mean by

   7 revolutionary?

   8   ANSWER: That it changes the way people

   9 interact with their computers.

  10   QUESTION: So Spotlight was an innovation

  11 at the time it was introduced, correct?

  12   ANSWER: Yes. Yes.

  13   MR. KELLEY: Going to Page 122:

  14   QUESTION: Mr. Serlet, have you heard of

  15 something called Piles?

  16   ANSWER: Yes.

  17   QUESTION: What's your understanding of

  18 Piles?

  19   ANSWER: Piles is a metaphor for the user

  20 interface and how to manipulate objects in files to kind

  21 of put them in space and put them in the virtual world.

  22   QUESTION: When was Piles developed?

  23   ANSWER: I do not know exactly when it

  24 was developed, but it was, I believe, in the late '80s

  25 or '90s.

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 1                 QUESTION:  But Piles was developed at

 2  Apple, correct?

 3                 ANSWER:  Yes.

 4                 QUESTION:  Can you be more specific about

 5  Piles being a metaphor for the user interface and

 6  manipulation of objects in files?

 7                 ANSWER:  Sure.  Piles are a way to kind

 8  of reflect what we do on our desktops.  We have piles of

 9  paper that lay around and how we let paper accumulate in

10  piles, and we manipulate and we move the file around and

11  so forth.

12                 QUESTION:  Did Apple ever implement Piles

13  into any of its products?

14                 ANSWER:  No.  I believe no product of

15  Apple's shipped with Piles.

16                 QUESTION:  Do you know why it was never

17  shipped in any -- do you know why it was never in any of

18  the shipped products?

19                 ANSWER:  Ultimately, I think we -- there

20  were some good ideas in Piles, but we haven't yet

21  figured out how to use them for products.

22                 QUESTION:  Can you be more specific?

23  What aspects are you talking about now?

24                 ANSWER:  Oh, I think the metaphor is a

25  very natural and a very intuitive metaphor that can
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1 simplify the user experience.

     2   QUESTION: But you're saying that that

     3 metaphor Apple has not found a way to use in its

     4 products yet?

     5   ANSWER: That's correct.

     6   QUESTION: Is that -- is Spotlight the

     7 same thing as Piles?

     8   ANSWER: No.

     9   QUESTION: Essentially, they're different

    10 concepts, Piles and Spotlights; is that correct?

    11   ANSWER: I believe Piles and Spotlight

    12 are concepts that are different but that have some

    13 relationship.

    14   QUESTION: Does Spotlight incorporate any

    15 of the concepts of Piles?

    16   ANSWER: I don't think so.

    17   QUESTION: Are you familiar with the

    18 cover -- with the Coverflow review in Spotlight?

    19   ANSWER: Yes.

    20   QUESTION: Is that the same thing as

    21 Piles?

    22   ANSWER: It's not the same thing. Piles

    23 is a kind of concept.

    24   QUESTION: Does Coverflow use any of the

    25 concept of Piles?

1   ANSWER: No, I wouldn't say that.

            2   QUESTION: Why?

            3   ANSWER: There's some system

   similarities, because in both cases, you are trained to

   represent a collection of documents. But there's

   different ways you can represent collections and many,

   many ways you can rebuild collections.

            8   But what's important to have a good

   design is to have something that just fits right and

   that's in tune. And so in Finder, for example, we have

   several modes, a visualization mode. We have the

   Coverflow. We have icon view. We have list view. We

   have column view. And they're all kind of visualization

   modes for representing a collection.

            15   QUESTION: Mr. Serlet, let's talk about

   the process of how products are launched today.

            17   Would you describe for me generally, at a

   high level first, how that process works?

            19   ANSWER: Okay. So the team works on a

   product, and at some point, there's some event that --

   where there's -- the main features of the product are

   marketed. And usually after that event, that's kind of

   a better program of one form or another, a CD and all

   that, and after the product is shipped.

            25   That's a fairly typical kind of course

1 for a lot of OS's that we've had.
2   QUESTION: When you say at some point the
3 main features of the product are marketed, to whom are
4 they marketed?
5   ANSWER: To the press and via the press
6 to the potential customers.
7   QUESTION: The decision to roll out
8 Spotlight at Apple, was that a major -- was that a major
9 decision at Apple?
10   ANSWER: Major is subjective, but we
11 definitely had a decision to market that, and the folks
12 that were very involved in that decision, of course, the
13 Marketing Department. They are the primary
14 decision-makers about what features are marketed and
15 what features are not marketed.
16   There's a lot of features that are
17 underneath the hood that are not easy to market and that
18 are not marketed, yet they are important features that
19 provide for innovation moving forward.
20   QUESTION: Who was involved in the
21 decision to launch Spotlight?
22   ANSWER: Pretty much everyone who works
23 in the Marketing Department in the OS and on the
24 engineering side, myself and a number of folks -- my
25 folks.

```
 1                QUESTION:  Were business people involved

 2  in the decision to launch Spotlight?

 3                ANSWER:  Definite business people -- I'm

 4  sorry -- define business people.

 5                QUESTION:  Okay.  People from -- people

 6  who looked at the commercial potential for Spotlight.

 7                ANSWER:  I think the closest for that is

 8  marketing folks.  So the answer is, yes, it's marketing

 9  folks.

10                QUESTION:  So marketing folks as well as

11  technical people provided input into the decision

12  whether to launch or not Spotlight --

13                ANSWER:  Yes.

14                QUESTION:  -- correct?

15                ANSWER:  Yes.

16                QUESTION:  Steve Jobs, what was his role

17  in the decision to launch Spotlight?

18                ANSWER:  Steve is a contributor in the

19  marketing kind of decision and has opinions that he

20  expresses on things.

21                QUESTION:  Do you remember what opinions

22  he expressed regarding Spotlight before it was launched?

23                ANSWER:  He expressed an opinion that

24  this was one of the features to market.

25                QUESTION:  Well, did he have a positive
```

1 outlook?

2   ANSWER: Yes. Yes.

3   QUESTION: Would it be accurate to say

4 that the decision to launch a product is a major event

5 in Apple?

6   ANSWER: Yes, it is. It's a major event

7 for that project in particular and all the team that

8 works on that.

9   QUESTION: So the decision to launch a

10 product at Apple is not a decision that Apple takes

11 lightly, correct?

12   ANSWER: Correct.

13   QUESTION: So in the decision to launch

14 Spotlight, we've talked about the marketing people and

15 the technical people.

16   Are there any other groups you can think

17 of?

18   ANSWER: I think those are the primary

19 groups.

20   QUESTION: Have you heard of the Human

21 Interface Division at Apple?

22   ANSWER: There is a Human Interface

23 Group. Usually, it's not referred to as division, but

24 there's a group, yes.

25   QUESTION: Was the Human Interface Group

```
 1  involved in the decision to launch Spotlight?

 2              ANSWER:  Yes.

 3              QUESTION:  What is the Human Interface

 4  Group?

 5              ANSWER:  They are the group who help

 6  define the user interface for the products.

 7              MR. CANTINE:  I'm sorry.

 8              ANSWER:  They are the group who help

 9  define the user interface for the products.

10              QUESTION:  For the Mac OS?

11              ANSWER:  For the Mac OS and for some of

12  the other products, like the iPhone and so forth.

13              QUESTION:  So the Human Interface Group

14  was responsible for the user interface in Leopard?

15              MR. KELLEY:  Going to Page 138:

16              QUESTION:  What factors does Apple

17  consider in its decision to launch a product or not?

18              ANSWER:  There are many factors that come

19  into play for launching your product, or there's a

20  feature of a product.

21              QUESTION:  Can you name those features,

22  those factors?

23              ANSWER:  Applicability for the user, ease

24  of understanding feature.  There's a whole set of things

25  there.
```

1   QUESTION: Were you consulted in the

2   decision of whether to launch Spotlight?

3   ANSWER: Yes, I'm sure I was consulted.

4   QUESTION: How were you consulted? Via

5   e-mail, phone calls, in person?

6   ANSWER: I would think that that was kind

7   of an informal conversation that took place before the

8   launch, okay, what other features are we going to talk

9   about. And Spotlight was one of them.

10   MR. KELLEY: Going to Page 145:

11   QUESTION: Apart from communications

12   you've had with counsel, have you ever heard the term

13   Scopeware Vision?

14   ANSWER: No.

15   QUESTION: What about the term

16   Lifestreams?

17   ANSWER: No.

18   QUESTION: No, as in apart from

19   communication with counsel, you have not heard of the

20   term Lifestreams?

21   ANSWER: Correct.

22   QUESTION: Prior to you becoming aware of

23   this lawsuit, you had never heard the word Lifestreams

24   before, correct?

25   ANSWER: That is how I remember it,

1 correct.

 2   QUESTION: Prior to your first becoming

 3 aware of this lawsuit, you had never heard of the word

 4 Scopeware either, correct?

 5   ANSWER: Correct.

 6   QUESTION: Have you heard of someone

 7 called named David Gelernter?

 8   ANSWER: Yes.

 9   QUESTION: When was the first time you

10 heard of him?

11   ANSWER: It was in the late 1980s where I

12 read a paper on something called Linda. I believe he

13 was the author of that.

14   QUESTION: Who is David Gelernter?

15   ANSWER: He's a researcher, a scientist.

16   QUESTION: Have you looked at any of his

17 work?

18   ANSWER: So I came across Linda, and I

19 would have forgotten it, except that his name was in the

20 news on an entirely different matter a few years after

21 that.

22   QUESTION: What matter?

23   ANSWER: That was connected with the

24 Unabomber. And that's why the name stuck in my mind,

25 because, otherwise, I would have forgotten.

1   QUESTION: Other than his work on Linda,

2   have you looked at any of his other work?

3   ANSWER: No.

4   QUESTION: What do you think of -- well,

5   what's your understanding of Linda?

6   ANSWER: That was a long time ago, but my

7   high-level recollection of it is that it was kind of a

8   connector language where you can have tasks to do that

9   you put in kind of a global soup of things to do, and

10   they get executed, which I thought was -- at the time

11   was a different way of thinking about computing.

12   QUESTION: Have you ever met David

13   Gelernter?

14   ANSWER: No.

15   QUESTION: Have you ever talked to him?

16   ANSWER: No.

17   QUESTION: Or corresponded with him?

18   ANSWER: No.

19   QUESTION: What's your opinion of him?

20   ANSWER: I have no opinion.

21   QUESTION: Have you ever been involved in

22   the marketing of anything at Apple?

23   ANSWER: Well, being kind of the leader

24   of some of the Apple projects, like Mac OS technologies,

25   I contribute to marketing the product in a peripheral

1 kind of way.

 2   QUESTION: How so?

 3   ANSWER: Well, for example, presentations

 4 at the developers' conference.

 5   QUESTION: Have you ever presented

 6 anything related to Spotlight at a developer conference?

 7   ANSWER: Oh, yes, absolutely.

 8 No.

 9   QUESTION: Do you know of any other

10 presentations of Spotlight? Do you know of anyone else

11 who has made presentations to Spotlight besides

12 yourself?

13   ANSWER: At Macworld and the developers'

14 conference, there's been various presentations of the

15 various versions of the OS where people like Steve Jobs,

16 Phil Schiller, and Scott Forstall have talked about

17 features of the OS.

18   I do not know whether any one of them

19 talked about Spotlight. I'm sure Steve did. I don't

20 know about the others. But in general, some of the

21 features of the OS are presented by those folks.

22   QUESTION: Do you think that one of the

23 Apple's strengths is an easy user interface?

24   ANSWER: Yes.

25   QUESTION: And that's appealing to

```
1  customers, correct?

2            ANSWER:  Yes.

3            QUESTION:  Ease of use?

4            ANSWER:  Yes.

5            QUESTION:  Is an easy user interface an

6  important consideration for Apple in the development of

7  its products?

8            ANSWER:  Yes.

9            QUESTION:  Do you think that Apple's

10 products are easy to use?

11           ANSWER:  In the -- in the relative terms,

12 relative to the competitors, yes, but we can always do

13 better, and we strive for it.

14           QUESTION:  Do you think that Spotlight,

15 Coverflow, and Time Machine had easy user interfaces?

16           ANSWER:  I would repeat my previous

17 statement, which is I think they're easy to use, but we

18 can always strive to do even better.

19           QUESTION:  And do you think that

20 Spotlight, Coverflow, and Time Machine are important

21 features to consumers?

22           ANSWER:  Important is a very subjective

23 word, but they are among the many features that we have

24 in the OS, and we have many important features.

25           QUESTION:  Would you consider Spotlight,
```

1 Coverflow, and Time Machine to be among the more

 2 important features of Leopard?

 3   ANSWER: That's becoming very subjective

 4 and not very factual, because we don't have a list of

 5 all the features in priority, in importance in order.

 6   QUESTION: Right now I'm just asking you

 7 for your thoughts on this.

 8   ANSWER: Yes, they are important

 9 features.

10   QUESTION: Have you ever looked at a

11 website with the following address: www.scopeware.com?

12   ANSWER: I look at tens, if not hundreds

13 of websites each day, so I do not recall looking at

14 specific websites.

15   QUESTION: Okay. So you don't remember

16 one way or another whether you looked at it or not?

17   ANSWER: Right. Right.

18   QUESTION: Are you aware of any

19 communications or meeting between Mirror Worlds

20 Technologies and Apple?

21   ANSWER: No, I'm not aware of any meeting

22 between Mirror Worlds and Apple.

23   QUESTION: Mark this as the next exhibit,

24 please.

25   MR. KELLEY: Marking the Deposition

```
 1  Exhibit No. 6.
 2              QUESTION:  For the record, this is a
 3  document bearing Production Nos. APMW0509264 through
 4  -67.
 5              Have you seen this e-mail before,
 6  Mr. Serlet?  If you want to take a moment to look
 7  through it, obviously.
 8              ANSWER:  The answer is yes, but my memory
 9  of it was revised by -- as I was made aware of this
10  litigation.
11              QUESTION:  So when was the last time you
12  saw this e-mail?
13              ANSWER:  Yesterday.
14              QUESTION:  Do you remember receiving this
15  e-mail back on July 2nd, 2001?
16              ANSWER:  No.
17              QUESTION:  Let's go through the people
18  who received this e-mail, starting with
19  a-v-i-e@apple.com.  Is that Avie Tevanian?
20              ANSWER:  Yes.  That was my manager at the
21  time.
22              QUESTION:  And we spoke about it.
23  Bertrand Serlet and Bereskin.  That's Ken Bereskin?
24              ANSWER:  That's the guy we connect with
25  the Cheetah name.  That's in the Marketing Department.
```

1 He was marketing Mac OS.
2   QUESTION: Does he have a technical
3 background?
4   ANSWER: Yes, he does.
5   QUESTION: But he's me in the marketing
6 group?
7   ANSWER: Yeah. I do not know the extent
8 of his technical background.
9   QUESTION: Don Lindsay, what's his title?
10   ANSWER: So Don Lindsay is no longer at
11 Apple, but he was the head -- he was the manager of the
12 HI team at the time.
13   QUESTION: Bas Ording?
14   ANSWER: That's someone who was also
15 working for Don, who is a UI designer.
16   QUESTION: And Scott Forstall?
17   ANSWER: Scott Forstall was working for
18 me at the time and was in charge of the HI team.
19   QUESTION: What is Scott Forstall's
20 current title at Apple?
21   ANSWER: He's senior VP of software for
22 the iPhone.
23   QUESTION: Did Scott Forstall have any
24 involvement in the development of Mac OS X, the various
25 versions?

```
 1                ANSWER:  Yes.

 2                QUESTION:  And now he's in charge of the

 3  iPhone developments?

 4                ANSWER:  Yes.  He got promoted.

 5                QUESTION:  So Mr. Forstall would be

 6  familiar with the features in the various versions of

 7  Mac OS X?

 8                ANSWER:  Yes.

 9                QUESTION:  Now the e-mail.  Steve Jobs

10  says, quote, Please check out this software ASAP,

11  period.  It may be something for our feature, and we may

12  want to secure a license ASAP, unquote.

13                Do you see that?

14                ANSWER:  Yes.

15                QUESTION:  Do you have any understanding

16  of what software Steve Jobs is referring to?

17                ANSWER:  I think it's the software that's

18  mentioned in the article, which is the software from

19  Mirror Worlds Technologies.

20                QUESTION:  Have you ever had any

21  discussions with Steve Jobs regarding Mirror Worlds?

22                ANSWER:  No.

23                QUESTION:  Have you ever had any

24  discussions with Mr. Jobs regarding David Gelernter?

25                ANSWER:  No.
```

```
 1                    QUESTION:  Lifestreams?

 2                    ANSWER:  No.

 3                    QUESTION:  Scopeware?

 4                    ANSWER:  No.

 5                    QUESTION:  Have you ever had any

 6  discussions with anyone at Apple, prior to this lawsuit,

 7  regarding David Gelernter, Scopeware, Mirror Worlds,

 8  Lifestreams?

 9                    ANSWER:  Not that I remember.

10                    QUESTION:  So when Steve Jobs says:

11  Please check out the software ASAP, did you check out

12  the software at the time, in 2001, July?

13                    ANSWER:  I do not remember, but what is

14  typical in these cases when there's -- Steve tells us to

15  check out something is that one of us -- when he sends

16  that to a distribution list, one of us picks this up and

17  checks it out and then closes the root or not.

18                    QUESTION:  Okay.  I'm asking you, after

19  Steve Jobs sent this e-mail, do you know who picked up

20  this project?

21                    ANSWER:  I believe it was picked up by

22  Don Lindsay, but I do not remember that fact prior to

23  this lawsuit.

24                    QUESTION:  Did anyone else, other than

25  Don Lindsay, pick this project up?
```

```
 1                    ANSWER:  I do not know.

 2                    QUESTION:  But after receiving this

 3  e-mail, you did not take any actions to look into David

 4  Gelernter or Lifestreams or Scopeware --

 5                    ANSWER:  Correct.

 6                    QUESTION:  -- is that true?

 7                    Do you know of anyone else who did look

 8  into the software, other than Don Lindsay?

 9                    ANSWER:  No.

10                    QUESTION:  Getting back to the e-mail, it

11  says, quote, It may be something for our future, and we

12  may want to secure a license ASAP, unquote.

13                    Do you know if a license was ever

14  secured?

15                    ANSWER:  I do not know that.

16                    QUESTION:  You don't know one way or

17  another whether it was secured or not?

18                    ANSWER:  Well, when Steve says something

19  like that, it means investigate.  And the outcome of the

20  investigation can be that it's not interesting, or we

21  can buy the company that does it, or we license the

22  software, or we license the IP.  It could be multiple

23  outcomes.

24                    And I believe the outcome of that was,

25  it's not interesting, but I don't know.
```

1   QUESTION: Has Apple ever licensed

     2   technology from a third party before?

     3   ANSWER: Yes.

     4   QUESTION: And who determines whether to

     5   license something?

     6   ANSWER: It's a combination of -- when

     7   it's licensing the technology, it's a combination of the

     8   engineering group and the marketing group very often.

     9   QUESTION: All right. Please mark this

    10   as the next exhibit.

    11   MR. KELLEY: That would be Deposition

    12   Exhibit No. 7, which was marked for identification.

    13   QUESTION: For the record, this is --

    14   this is a document bearing Production No. APMW05597376

    15   through -81.

    16   Have you seen this document before,

    17   Mr. Serlet?

    18   ANSWER: I have no remembrance of this

    19   document prior to the litigation.

    20   QUESTION: Do you have any reason to

    21   believe that you did not receive this e-mail on

    22   September 6th, 2001?

    23   ANSWER: I have no reason to believe I

    24   did not receive the e-mail.

    25   QUESTION: Reading from the first

1 paragraph, it says, quote, I've arranged for Randy

        2 Prager, CTO of Mirror Worlds Technologies, to give a

        3 technology demo by a combination of conference call,

        4 plus browser, of their Scopeware product. This will be

        5 next Tuesday at 11:00 a.m. Place is TBD. You're

        6 welcome to attend if you wish, unquote.

        7   Do you see that?

        8   ANSWER: Yes, I see that.

        9   QUESTION: Was the technology demo ever

       10 given?

       11   ANSWER: I do not know that.

       12   QUESTION: You never attended any

       13 technology meeting?

       14   ANSWER: No.

       15   QUESTION: Have you ever attended any

       16 meeting or conference involving Mirror Worlds

       17 Technologies prior to this lawsuit?

       18   ANSWER: No.

       19   QUESTION: If you go down -- if you go

       20 down more the e-mail, you see a website, quote, You can

       21 check out their product at

       22 www.decisiontolaunchscopeware.com, end quote.

       23   ANSWER: Uh-huh.

       24   QUESTION: Did you check out the website

       25 after receiving this e-mail?

```
 1                    ANSWER:  I do not recall doing that.

 2                    QUESTION:  Reading on, it says, quote, I

 3  also have a transcript of a recent talk of Gelernter's

 4  that explains the concept behind Lifestreams, unquote.

 5                    Do you see that?

 6                    ANSWER:  Yes.

 7                    QUESTION:  Did you ever look at that

 8  transcript?

 9                    ANSWER:  No.

10                    QUESTION:  Who is -- do you know who Ted

11  Goldstein is?

12                    ANSWER:  Yes.

13                    QUESTION:  Who is he?

14                    ANSWER:  He was one of my staff probably

15  from around 2001, I'd say, until two years ago, and he

16  was in charge of Development Tools, so he was VP of

17  Development Tools.

18                    QUESTION:  And who was the head of

19  Development Tools at the time?

20                    ANSWER:  He was the head.

21                    QUESTION:  He wasn't one of the nine who

22  reported to you, was he?

23                    ANSWER:  Say that again.

24                    QUESTION:  He wasn't one of the nine

25  people who reported to you.
```

```
 1            ANSWER:  He no longer reports to me,

 2   because he left Apple, but at that time, he was

 3   reporting to me.

 4            QUESTION:  Directly to you?

 5            ANSWER:  Directly, yes.

 6            QUESTION:  Who is Tom (sic) Schaff?

 7            ANSWER:  Tom (sic) Schaff used to report

 8   to me a few years ago and left, I think, about three

 9   years ago.

10            MR. KELLEY:  I'm sorry.  That should be

11   Tim Schaff.

12            QUESTION:  What was his position before

13   leaving Apple?

14            ANSWER:  He was the head of IMG.

15            QUESTION:  And who is Kevin Tiene?

16            ANSWER:  Kevin Tiene.  Kevin Tiene works

17   for Craig Federighi, and he's the director of System

18   Maps.

19            QUESTION:  Kevin now works for Craig, the

20   person you hired a few months ago?

21            ANSWER:  Yes.

22            QUESTION:  How long has Kevin been

23   working at Apple?

24            ANSWER:  Oh, a long time.  Probably over

25   15 years.
```

```
 1              QUESTION:  When you say you have not

 2  heard of the term Scopeware, Mirror Worlds Technologies,

 3  Lifestreams, or David -- I'm sorry -- Scopeware, Mirror

 4  Worlds, or Lifestreams prior to the lawsuit, are you

 5  saying that you are -- that you don't -- are you saying

 6  you don't remember hearing those terms before the

 7  lawsuit?

 8              ANSWER:  Yes.

 9              QUESTION:  So you may have heard it, but

10  you just don't remember?

11              ANSWER:  Right, which I have no reason to

12  doubt these e-mails, so these e-mails -- assuming they

13  are true, but I have no reason to doubt them --

14  establish the fact that -- the name came across my

15  e-mail.

16              MR. KELLEY:  Going to Page 187.

17              QUESTION:  And Toby Patterson, who he is?

18              ANSWER:  Toby Patterson, he's an engineer

19  who's been working in a variety of products.  A few

20  years ago, he was working on sort of syncing technology

21  that syncs information across multiple Macs, and now

22  he's working on the iPhone.

23              QUESTION:  Did he have any involvement

24  with the development of Coverflow or Time Machine?

25              ANSWER:  I believe he was manager during
```

1 Leopard, and some of his folks implemented the ability

 2 for mail to integrate in Time Machine so that you can

 3 navigate your mail in the past and retrieve a message.

 4   QUESTION: You're talking in respect to

 5 Time Machine, correct?

 6   ANSWER: Yeah.

 7   QUESTION: What about Coverflow?

 8   ANSWER: I don't think he was involved

 9 with Coverflow.

10   MR. KELLEY: Going to Page 197:

11   QUESTION: Can you use Spotlight in Time

12 Machine?

13   ANSWER: Yes.

14   QUESTION: How does Spotlight work in

15 Time Machine?

16   ANSWER: We -- Spotlight creates an index

17 that lives where the Time Machine snapshots live that

18 enables you to essentially narrow down for a given

19 search criteria all the snapshots that contain documents

20 that match.

21   MR. KELLEY: Exhibit No. 11 marked for

22 identification. That's Deposition Exhibit No. 11.

23   QUESTION: For the record, this is a

24 document bearing Production No. MW001247 through -58.

25   Have you seen this before, Mr. Serlet?

```
 1              ANSWER:  I don't recall seeing that one,

 2  no.

 3              QUESTION:  Do you have any reason to

 4  believe this was not created by Apple?

 5              ANSWER:  No.

 6              QUESTION:  So you believe it was created

 7  by Apple?

 8              ANSWER:  Yeah, I believe that.

 9              QUESTION:  And you have no reason to

10  believe that anything in here is inaccurate?

11              ANSWER:  I assume all the facts are

12  correct.

13              QUESTION:  Do you know what the purpose

14  of this document is?

15              ANSWER:  Yeah.  It seems to explain the

16  Spotlight technology and how you can use it.

17              MR. KELLEY:  Go to Page 209:

18              QUESTION:  Okay.  Well, I thought

19  earlier -- let me just ask you, does Coverflow use the

20  concept of Piles?

21              ANSWER:  No.  I think we had -- I think

22  that was my answer earlier, and that is still my answer.

23              QUESTION:  So the Piles metaphor is more

24  what you would see on a tabletop, a stack of paper?

25              ANSWER:  Yes.
```

1   QUESTION: Versus Coverflow, which is not

 2 the way you would normally see it on a tabletop going

 3 horizontally with the stacks?

 4   ANSWER: Correct.

 5   QUESTION: Other than the orientation,

 6 what are the other differences?

 7   ANSWER: Well, Coverflow has been

 8 implemented in part of the product and has a certain

 9 behavior in how it behaves and how you have to click to

10 select. And those things -- all of these -- all those

11 behaviors is the way it is implemented.

12   Piles, as far as I know, is mostly a

13 research project. It was not implemented on a product.

14 So it's hard to compare a product that has been

15 implemented with something that was just at the idea

16 level, at the experimentation level.

17   MR. KELLEY: Your Honor, that ends the

18 presentation of the deposition of the Bertrand Serlet

19 ending at Page 212, Line 7.

20   THE COURT: All right. That took 35

21 minutes. All right. Very well.

22   All right. Who will be your next

23 witness?

24   MR. DIBERNARDO: Your Honor, Mirror

25 Worlds will call Dr. Levy.

```
 1                    THE COURT:  Dr. Levy.

 2                    MR. DIBERNARDO:  Your Ho nor, we have some

 3   boards to set up.

 4                    All right.

 5                    MR. RANDALL:  Your Honor, while he's

 6   doing that, may we approach the bench?

 7                    THE COURT:  Yes, you may.

 8                    (Bench conference.)

 9                    MR. RANDALL:  Your Honor, Dr. Levy

10   submitted his infringement report on May 20th, and in

11   his infringement report, he never referenced a source

12   code in this case.  He looked -- his colleague looked at

13   it for 90 days.  He never referenced it in his expert

14   report.

15                    MR. CARROLL:  I can show you right now --

16                    THE COURT:  Hold on.  Are they putting

17   anything up with source code?

18                    MR. CARROLL:  Hey, Kent?  Kent, come here

19   a minute.

20                    He's talking about Dr. Levy, whether he

21   has source code references in his report.

22                    MR. DIBERNARDO:  And we understood your

23   concern to be that Dr. Levy went beyond the scope of his

24   report, associating certain lines of code with

25   particular limitations.
```

```
 1                    The slides don't do that.  We're happy to

 2   show you a sample of those slides, if you'd like.

 3                    MR. RANDALL:  My concern is that he

 4   doesn't even say that -- the matters he considered.

 5   In his report -- and it's right here -- that there's

 6   three pages of documents he considered.  There's

 7   publications and patents and things like that,

 8   documents.  He never mentions source code ever that he

 9   considered.

10                    He didn't consider it -- I mean, he

11   didn't -- he never referenced it in his report, and what

12   he's going to do on all these boards is he's going to

13   put confirmed by source code.  That's not what he said

14   in his report.  He never put anything in his report that

15   he considered -- and here's the list right here.  It's

16   not in there.

17                    MR. DIBERNARDO:  Dr. Levy did indeed

18   review source code.  It is mentioned in the report.

19   There was specific reference -- references in the report

20   to particular items of source code.

21                    There's no dispute that he spent 90 days

22   reviewing the source code.  Apple pointed that out in

23   their opening, 90 days reviewing the source code of the

24   two versions.

25                    MR. RANDALL:  They cited to us one
```

1 instance where he says source code, and this is it, and

 2 it's not source code. But those items right there, he

 3 does not list source code.

 4   THE COURT: Well, was there any question

 5 about source code --

 6   MR. DIBERNARDO: Your Honor --

 7   THE COURT: -- in his report about source

 8 code?

 9   MR. DIBERNARDO: -- there is indeed. For

10 example, these items -- if you'll forgive me. The

11 metadata query referenced it, and that's a specific item

12 of source code.

13   MR. RANDALL: No. I just -- it's right

14 here. They're saying things like this: Our source

15 code. It's not source code. It's document. And that's

16 why it's listed as document. And we asked him -- I can

17 show you the testimony, Your Honor, very quickly.

18 Here's the question right down here at the bottom, and

19 the testimony is over on the next page, the highlighted

20 portion.

21   THE COURT: This is Dr. Levy? Is that

22 what you're talking about?

23   MR. RANDALL: If you flip the page and

24 read that answer over here, that one you'll see.

25 So this is Dr. Levy saying: I -- I -- I relied on the

1 other expert to look at the code. I didn't have any

 2 conversations with him that confirmed my opinions.

 3   In his report -- and he says right up

 4 here in this part, he said: I list all of the materials

 5 I considered in this report. And I've highlighted that

 6 part in the first part of his report right here.

 7   MR. DIBERNARDO: Your Honor, while you're

 8 looking at that, may I look at Exhibit C to Dr. Levy's

 9 report?

10   THE COURT: Uh-huh.

11   MR. DIBERNARDO: Thank you.

12   MR. RANDALL: And, Your Honor, the -- my

13 problem is this: When he puts confirmed by source code,

14 it's going to open up a whole new can of worms. It's

15 going to force me to cross-examine him on what source

16 code are you talking about, and then he's going to

17 unload and say: Well, it's this pile and this pile and

18 this pile. And he simply shouldn't be allowed to do

19 that. It wasn't in his report.

20   MR. DIBERNARDO: That's certainly not the

21 case. He referenced specific items of source code in

22 his report. These references to metadata items and data

23 queries, those are items in the source code that are

24 referenced.

25   THE COURT: You can take him -- you

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 1  establish a predicate with him where he referred to it

 2  in his report or in his deposition, but, otherwise,

 3  don't mention anything about source code.

 4              MR. DIBERNARDO:  Okay.  And it's -- he

 5  said not to reference it.

 6              MR. RANDALL:  Right.  You can't reference

 7  it.

 8              MR. DIBERNARDO:  I apologize.  There

 9  won't be specific references to specific code.  There

10  are references on some slide in small print -- and we

11  can show that to you -- that simply says confirmed by

12  source code, PX numbers.

13              MR. RANDALL:  Here's the slide.  There's

14  31 slides; 31 slides say confirmed by source code.  It's

15  just unfair.

16              THE COURT:  All right.  Take it out.

17              (Bench conference concluded.)

18              THE COURT:  Counsel, would it be helpful

19  to take a break?

20              MR. DIBERNARDO:  Perhaps just a minute.

21              THE COURT:  Okay.  All right.  Ladies and

22  Gentlemen of the Jury, we're going to take a 10-minute

23  recess.  Be in recess until 12:20 (sic).

24              COURT SECURITY OFFICER:  All rise.

25              (Jury out.)
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 1                  (Recess.)

 2                  (Jury out.)

 3                  THE COURT:  Please be seated.

 4                  MR. CARROLL:  Your Honor, may we see you

 5  one second?

 6                  THE COURT:  Yes.

 7                  MR. CARROLL:  Judge, this is Dr. Levy's

 8  expert report.  Section C is the items relied on for

 9  Exhibit C.  Let me show you the page, Exhibit C.

10                  Look at the last page on the tag where he

11  said he relied on the Apple source code.

12                  MR. RANDALL:  Where's that?

13                  MR. CARROLL:  Exhibit C, the last page.

14  Here's the deposition transcript.

15                  MR. RANDALL:  I'm sorry.  I don't have --

16                  MR. CARROLL:  That's his expert report.

17                  MR. RANDALL:  What is the date of the

18  expert report?

19                  MR. STEIN:  The confusion may be that it

20  was the next day we sent a supplement -- or a

21  replacement Exhibit C to --

22                  MR. DIBERNARDO:  That is the marked copy.

23                  MR. CARROLL:  Here's the deposition,

24  Judge.

25                  MR. RANDALL:  Your Honor, I'm more
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1   concerned about two things. One, I have Exhibit C. It
         2   didn't mention it. And in his report, he doesn't
         3   mention it anywhere in his report the reliance or
         4   analysis of source code.
         5   And in a typical expert report, I would
         6   expect an expert to say: Here's something I relied on,
         7   and here is my expert analysis, and here is what it is,
         8   instead of just coming to trial and saying: I'm going
         9   to put up source code.
        10   MR. CARROLL: Here's the deposition, Your
        11   Honor. The question about did he look at it and did he
        12   consider it, that's their lawyer asking those questions.
        13   THE COURT: Okay. In your infringement
        14   report, Exhibit 4, did you consider any of Apple's
        15   source code in making your opinions?
        16   Yes.
        17   Forming your opinions in Exhibit 4 for
        18   infringement, did you review any of the source code?
        19   Yes.
        20   MR. RANDALL: He did review it, but he
        21   didn't put it anywhere in his report. That's like
        22   saying: I reviewed a whole bunch -- it's classic
        23   ambush, Your Honor.
        24   THE COURT: Well, counsel, you asked him
        25   did he consider it, and he said that he used it in

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 1  forming his opinions.  If you don't follow up in the

 2  deposition to find out more about that, you asked the

 3  question.

 4                 You knew he had the source code, did you

 5  not?

 6                 MR. DIBERNARDO:  He certainly did, Your

 7  Honor.  He's looked at it, I believe, in 90 days

 8  reviewing the source code.

 9                 MR. RANDALL:  That was his colleague,

10  but...

11                 THE COURT:  All right.  I'll reverse the

12  earlier opinion, and he can testify regarding that he

13  reviewed the source code.  It's plainly -- unless you're

14  saying that this Exhibit C -- and this was not on the

15  copy you showed me a moment ago.

16                 MR. RANDALL:  No, it was not on that.  I

17  don't know where that came from, Judge.  I don't --

18  because I haven't looked at every single document in

19  this case, and I can't -- I don't know where that came

20  from.

21                 THE COURT:  Where did this come from?

22                 MR. DIBERNARDO:  It was marked at the

23  deposition.

24                 THE COURT:  It was marked at the

25  deposition?
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 1                    MR. RANDALL:  Well, let me ask a question
 2  to be clear:  Was this -- when was that Exhibit C
 3  provided to us?
 4                    MR. STEIN:  I just mentioned it was
 5  provided as a substitute Exhibit C, I think the day
 6  after -- or a few hours after -- because it was shown in
 7  the report.
 8                    MR. RANDALL:  Your Honor, so he didn't
 9  put anywhere in his report an analysis of saying:  This
10  is the code I reviewed.  Here's the code I'm relying
11  upon for this opinion or that opinion.
12                    Nothing like that.  He didn't reference
13  it anywhere in his report.  And so to come in here and
14  just say:  I'm going to put up source code, it opens up
15  a huge can of worms, you know, perhaps 90 days' worth of
16  code-reading.
17                    I don't know what he's relying on.  I
18  don't.
19                    MR. DIBERNARDO:  The cans of worms were
20  opened.  We see, for example, referenced at CFUUID,
21  that's in the code.  There are also references to the
22  kMDItemSortIdentity Attr.  That's certainly code, pieces
23  of code between that and the deposition --
24                    THE COURT:  All right.  He can testify.
25  If you want to stop and take him on voir dire or
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1 something, you can. But it looks to me like that he's

 2 made reference to it in his report. You asked him about

 3 it in his deposition. He said it formed the basis.

 4   If you didn't follow up with him or

 5 request some -- something more specific in his report,

 6 there's nothing I can do about that now.

 7   All right. Bring the jury in.

 8   MR. CARROLL: Thank you, Your Honor.

 9   THE COURT: Did y'all get those times

10 straightened out for the depositions yet?

11   MR. DIAMANTE: Still working on it.

12   (Jury in.)

13   THE COURT: All right. Please be seated.

14   All right. Counsel, you may proceed.

15   MR. DIBERNARDO: May it please the Court.

16   Is the microphone on?

17   THE WITNESS: I think so. Can you hear

18 me?

19 JOHN LEVY, Ph.D., PLAINTIFF'S WITNESS, PREVIOUSLY SWORN

20   DIRECT EXAMINATION

21 BY MR. DIBERNARDO:

22   Q   Sir, could you please start by stating your

23 name for the record, and your residence?

24   A   Yes. My name is John Levy. I live at 61

25 Lower Robert Drive in Inverness, California.

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 1      Q     Generally, what's your understanding of your

 2  role in this case?

 3      A     I was engaged by the Plaintiff, Mirror Worlds,

 4  as a technical expert to consult and testify on this

 5  case.

 6      Q     Did you hear Mr. Carroll's opening this

 7  morning on behalf of Mirror Worlds?

 8      A     Excuse me?

 9      Q     Yesterday?

10      A     Yes, I did.

11      Q     And as Mirror Worlds' technical expert in this

12  case, will you address any of the five points

13  Mr. Carroll identified as part of Mirror Worlds' case?

14      A     Yes, I will.  I will address, in part, all of

15  the first four:  Who is Dr. Gelernter, what is

16  Dr. Gelernter's invention, and how -- why Apple was

17  interested in Dr. Gelernter's inventions, and how Apple

18  has and is using Dr. Gelernter's inventions.

19      Q     Thank you.

20            Before we get into that, I'd like to explore

21  your qualifications.  Can you start by explaining your

22  education after high school?

23      A     Yes.  I earned engineering degrees from

24  Cornell University, a bachelor's in engineering physics;

25  a master's degree in electrical engineering from
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1 California Institute of Technology, which is also known
     2 as Cal Tech; and a Ph.D. in computer science from
     3 Stanford University.
     4   Q   Dr. Levy, what's your current profession?
     5   A   I'm a computer scientist and a management
     6 consultant.
     7   Q   Can you explain for us what a computer
     8 scientist does?
     9   A   Yes. The kind of computer scientist that I am
    10 is also known as a computer architect. I'm involved in
    11 the design and implementation of computer systems,
    12 including computer software and computer hardware.
    13   Q   Before you --
    14   A   Kind of like a building architect designs the
    15 blueprints for a building and someone else builds them.
    16   Q   Thank you.
    17   Before we move on, can you explain what you
    18 mean by computer hardware?
    19   A   Yes. Computer hardware is the stuff you can
    20 see and touch, like the screen and the keyboard and the
    21 mouse and the touch pad, and the -- it also includes the
    22 electronic circuits that are inside the box.
    23   And then software is the stuff that makes that
    24 all play. It's the programs that are inside and cause
    25 the computer to do something.

1   Q   Dr. Levy, would a computer work without

2 software?

3   A   No, not at all. Nothing can happen inside the

4 computer until there's software in it and running.

5   Q   As a computer scientist, have you worked with

6 both hardware and software?

7   A   Yes, I have.

8   Q   About how long have you worked in the computer

9 industry?

10   A   I've been in the computer industry for 38

11 years.

12   Q   Could you -- could you please explain your

13 full-time work experience in the computer industry?

14   A   Yes. I went to work for Digital Equipment

15 Corporation. I worked there for five years as a

16 computer manufacturer. I worked for Tandem Computers in

17 California for about a year and a half. And then I

18 worked for Apple Computer for approximately four years.

19   Then after a period of ten years of

20 consulting, I was employed by Quantum Corporation, who's

21 a maker of hard disk drives, which are storage units for

22 computers.

23   Q   Dr. Levy, you mentioned Apple Computer. Is

24 that the same company that's the Defendant in this case?

25   A   Yes, it is. It's changed its name since then

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 1  to Apple, without the Computer after it.
 2       Q    When did you work for Apple?
 3       A    I worked for Apple from 1979 through 1982.
 4       Q    Was that time relevant to this case?
 5       A    No, it was long before.
 6       Q    And what did you do when you were there at
 7  Apple Computer?
 8       A    I was an engineering supervisor on one of the
 9  development groups that developed the hardware of the
10  new computer system.
11       Q    And is that computer system you worked on at
12  Apple Computer relevant to this case?
13       A    No, it's not.
14       Q    Why did you leave Apple Computer?
15       A    I decided to start my own business as a
16  consultant, and so I left Apple with a consulting
17  contract from Apple.
18       Q    Did you leave Apple on good terms?
19       A    Definitely.
20       Q    How do you know?
21       A    Well, I had a consulting contract, and I
22  continued to work approximately one day a week with
23  people at Apple for eight or nine months after I left
24  Quantum.
25       Q    Dr. Levy, have you ever taught classes
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1 relating to computers?

     2   A   Yes, I have. I taught one course at San

     3 Francisco State University on design of computers, and I

     4 have been teaching for the last six years, one class or

     5 two a year, at the University of San Francisco.

     6   These last six years, they are continuing

     7 education classes for elders, people over 50. In fact,

     8 my students are an average age of 73.

     9   The courses I teach there have to do with

    10 what's inside the computer and how it works and also

    11 another one called the Digital Revolution in the Home,

    12 which is about everything else, the electronic --

    13 digital appliances at home that we use.

    14   Q   Thank you.

    15   In your 38 years in the computer industry,

    16 have you ever been named as an inventor on a patent?

    17   A   Yes, I have. I am named as an inventor on

    18 seven U.S. patents.

    19   Q   Just generally, what technologies do those

    20 patents of yours relate to?

    21   A   They have to do with the design of computer

    22 hardware and interconnections in them.

    23   Q   Dr. Levy, have you ever served as the

    24 technical expert in a lawsuit before?

    25   A   Yes, I have. I've been engaged as an expert

1   in over 35 cases.
       2   Q   What types of technologies were involved with
       3   those cases?
       4   A   Those cases have involved a wide variety of
       5   technologies and computers and software, including
       6   operating systems and computer design, and also internet
       7   protocols, internet software.
       8   Q   Have you ever acted as a technical expert for
       9   a district court judge?
      10   A   Yes, I have. I've been engaged three times
      11   for two different judges as a neutral technical expert
      12   advising the Court.
      13   Q   What kind of cases do you work for judges?
      14   A   Well, two of those were patent cases, and one
      15   was a software copying dispute.
      16   Q   What types of technologies were involved in
      17   those cases?
      18   A   They had to do with -- one with internet
      19   software design, and the other one was the hardware
      20   interface of a storage unit and how it's used by
      21   software.
      22   Q   Generally, as an expert to a judge, what do
      23   you do in those cases?
      24   A   Typically, I was -- would initially give a
      25   technology tutorial to the Judge and the law clerk

1 involved, and then I attended some hearings at the

 2 request of the Court.

 3   I also was asked to sit in on a

 4 meet-and-confer between the two parties one time just to

 5 keep the technical experts on both sides honest.

 6   Q   Thank you, Dr. Levy.

 7   Can you explain why you chose to be a

 8 technical expert in this case?

 9   A   Yes. There are really two reasons. One is

10 that my background was appropriate for my experience in

11 operating systems, and also, I knew of Dr. Gelernter and

12 his reputation as a visionary, and welcomed the chance

13 to work with him in this case.

14   Q   Dr. Levy, I would like to show you Trial

15 Exhibit No. 1.

16   MR. DIBERNARDO: James, if we could,

17 please.

18   There we go. Thank you.

19   Perhaps, if you went to the next page,

20 please.

21   Q   (By Mr. DiBernardo) Dr. Levy, can you identify

22 what Exhibit 1 is for us?

23   A   Yes. This is one of the Gelernter patents,

24 No. '227.

25   MR. DIBERNARDO: If we could have Exhibit

1 11 next.

 2   Perhaps the second page.

 3   Q   (By Mr. DiBernardo) Dr. Levy, can you identify

 4 this Exhibit 11 for us?

 5   A   Yes. This is the '427 patent.

 6   Q   And then finally, how about Exhibit 6?

 7   A   This is the '313 patent.

 8   Q   Thank you.

 9   Would it be acceptable for us to refer to

10 these three patents as the Gelernter patents?

11   A   Yes, of course.

12   Q   And did you read the Gelernter patents before

13 accepting the role of technical expert in this case?

14   A   Yes, I did.

15   Q   Did you have an initial impression of the

16 Gelernter patents?

17   A   Well, yes. They appeared to me to be quite

18 significant advances in the computer field, and so I

19 welcomed the chance to work with them.

20   Q   As part of your role as a technical expert,

21 did you form any opinions?

22   A   Yes, I did.

23   Q   And what opinions did you form?

24   A   I formed the opinion that the Apple products

25 that are accused in this case do infringe these patents

1   and also that the patents are valid.

2   Q   Dr. Levy, turning first to your opinion of

3   infringement, can you explain the process you used to

4   reach that opinion of infringement?

5   A   Yes. Generally, I studied the patents to

6   understand what the claims set out, as well as the

7   background of the information in the patents. And then

8   I studied the Apple products to see how they operated in

9   order to determine whether they met all of the claim

10   limitations in the patents.

11   Q   Is this the same general process that was used

12   in the cases where you served as a technical expert to

13   judges?

14   A   I believe it's the same process used in all

15   patent cases, yes.

16   Q   How long have you been studying the Gelernter

17   patents and Apple products in this case?

18   A   I was engaged on this case in the fall of

19   2008, so I've been studying these things for almost two

20   years.

21   Q   Dr. Levy, do you have a document that

22   identifies materials you analyzed in connection with

23   this case?

24   A   Yes, I do.

25   THE WITNESS: If you will show the first

1 page, please.

 2   A   This is a summary of the items that I've

 3 considered in developing my opinions and learning about

 4 the various aspects of the products. That includes the

 5 patents, orders from the Court interpreting the terms.

 6   I did look at the source code for the

 7 operating systems. I also have quite a bit of

 8 experience using Apple products, both as an individual

 9 and I've experimented with them specifically for this

10 case. I've read testimony of the Apple employees,

11 including some of the developers.

12   And then also, books, publications, including

13 from Apple, articles and papers and other testimony of

14 witnesses and, of course, the testimony and reports of

15 Dr. Feiner, who is Apple's expert.

16   Q   Thank you.

17   Dr. Levy, what Apple products did you

18 consider?

19   A   I considered the Apple Leopard -- I'm sorry --

20 Tiger Leopard and Snow Leopard operating systems and the

21 computers that run them, and also the iPhone, iPod, iPad

22 products, which are smaller ones, more things.

23   Q   You mentioned that you reviewed the source

24 code of Apple's operating systems.

25   Can you describe what an operating system is?

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 1      A    Yes.  An operating system is a large

 2  collection of programs that is an integral part of

 3  running the computer system.  And it's sort of the basis

 4  on which everything else in the computer runs, and so

 5  it's a lot of software that manages what's going on in

 6  the computer, both in terms of time and space and

 7  facilities.

 8      Q    What's source code?

 9      A    What is source code?

10           Source code is the words that are written down

11  by a person who's creating a program for a computer, and

12  then these words are written in an unusual kind of a

13  language called a programming language, which most

14  normal people wouldn't be able to read.

15           And then they're translated into another kind

16  of form, which are used by the computer when it runs.

17      Q    Why did you go to the trouble of reviewing the

18  source code for Apple's operating systems?

19      A    Well, in order to find out exactly how

20  something works in the computer, you have to know how

21  the code works.  And to know how the code works when

22  it's running, you have to see the source code to see

23  exactly how it's structured.

24      Q    Do you have any experience with operating

25  systems?
```

1   A   Yes, I do. I studied the structure and

 2 operation of operating systems during my graduate years

 3 at Cal Tech and at Stanford. Also, while I was a

 4 graduate student at Stanford, I was employed by the

 5 Stanford Linear Accelerator Center, which is a physics

 6 research organization, and there I helped to write code

 7 for a real-time operating system for Stanford for SLAC.

 8   And I was a supervisor of an operating system

 9 development at Digital Equipment Corporation for about a

10 year and a half. And also during my time at Quantum

11 Corporation, I was involved in disk drive -- drivers,

12 which is a piece of software that manages the moving of

13 data between storage units and the computer.

14   Q   Did you have any assistance in analyzing Apple

15 source code?

16   A   Yes, I did.

17   Q   Who assisted you?

18   A   I was assisted by a man named Dr. Gareth Loy.

19   Q   Who is Dr. Loy?

20   A   Dr. Loy has a doctorate degree from Stanford

21 University, and he has a great deal of experience with

22 software and source code. And so I enlisted his help.

23   Q   How did he assist you?

24   A   Well, since the programs that were provided to

25 us for inspection for the two operating systems involved

```
 1  more than 5 million lines of source code.  Navigating

 2  through all of this code was a serious task, and so I

 3  engaged Dr. Loy to help with learning where the various

 4  files and source code pieces were.

 5          And then when I wanted to study a particular

 6  part of the operating system, I would ask Dr. Loy to

 7  point out where that part was, so that I could inspect

 8  it.

 9      Q    What Apple operating systems do you and

10  Dr. Loy analyze?

11      A    We analyzed source code for the Leopard -- I'm

12  sorry -- the Tiger and the Leopard operating systems.

13      Q    You previously mentioned Snow Leopard

14  operation system.  Did you look at the code for Snow

15  Leopard?

16      A    No, we did not.

17      Q    Why not?

18      A    Well, according to the testimony of the Apple

19  employees, there were no significant differences for

20  this -- the purposes of this technology that we're

21  studying between Leopard and Snow Leopard.

22      Q    Are there different versions of the Apple

23  operating systems for different computers?

24      A    Yes, there are.  There's the main versions for

25  the desktop and portable computer systems that
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 1  individuals would use.  And there's another version

 2  called a server version, which runs on a somewhat larger

 3  computer system that's known as a server.

 4      Q    Did you review both personal computer and the

 5  server versions of the operating systems?

 6      A    No, we did not.

 7      Q    Why not?

 8      A    Because, again, the Apple employees testified

 9  that the operation of the parts of the system we were

10  interested in were the same substantially between the

11  desktop and the server versions.

12      Q    Dr. Levy, your presentation references that

13  you reviewed the testimony and reports of Dr. Feiner,

14  Apple's expert.

15           Did Dr. Feiner provide any opinions in this

16  case?

17      A    Yes, he did.

18      Q    What are those opinions?

19      A    His opinion, the Apple products do not

20  infringe, and the Patent Office was wrong to issue these

21  patents to Dr. Gelernter and others, because there was

22  nothing new in them.

23      Q    Do you agree with Dr. Feiner that the

24  Gelernter patents are invalid?

25      A    Absolutely not.
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 1      Q    Do you think the Patent Office made a mistake
 2  granting the patents?
 3      A    No, I do not.
 4      Q    Do you agree with Dr. Feiner that the patents
 5  are not infringed by Apple?
 6      A    No, I don't.
 7      Q    Dr. Levy, we will deal with invalidity later.
 8           Let's focus first on infringement.
 9           Do you have an opinion as to why Dr. Feiner
10  has a different opinion as to whether Apple infringes
11  the Gelernter patents?
12      A    Well, I'll talk about the details of
13  infringement in just a bit.  But I think, in general,
14  Dr. Feiner applied somewhat different meanings of the
15  claim terms that I don't believe were proper for the
16  Court's construction.
17           And also, I think it was because Dr. Feiner
18  didn't really inspect what goes on under the hood, so to
19  speak, in terms of the code.
20                MR. RANDALL:  Your Honor, I think it's
21  appropriate for them to put their case on and perhaps
22  not put a rebuttal case on in the middle of their
23  case-in-chief.  So I'm going to object to the continued
24  references to our opinions, and perhaps they can just
25  put their opinion on the table, and I can cross him.
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 1                    THE COURT:  Response?
 2                    MR. DIBERNARDO:  I think it's appropriate
 3   to point out to the jury and to the Court where Mr --
 4   where Dr. Levy --
 5                    THE COURT:  At a very high level, but you
 6   intend to call him back as a rebuttal witness, do you
 7   not?
 8                    MR. DIBERNARDO:  We do indeed, Your
 9   Honor.  We're happy to move on.  We're just setting --
10                    THE COURT:  Let's move on to the
11   infringement analysis then.
12                    MR. DIBERNARDO:  Certainly.
13       Q    (By Mr. DiBernardo) Dr. Levy, let's turn to
14   the Gelernter patents then.
15            Do you have an opinion as to whether the
16   Gelernter patents address any technological problems?
17       A    Yes.  In general, they address the problem of
18   order -- organizing and then finding your stuff, the
19   files and the documents, on a computer.
20       Q    When they -- when was the earliest of the
21   Gelernter patents filed?
22       A    1996.
23       Q    And was this problem -- why was this a problem
24   when the first of the Gelernter patents were filed in
25   1996?
```

1   A   Well, this -- this problem was recognized on

      2 larger systems as we've heard testimony about already.

      3 But, in fact, in 1996, there wasn't nearly so much being

      4 stored on a personal computer as there is now.

      5   So in some sense, Dr. Gelernter anticipated

      6 the vast expansion of the number of files and folders

      7 and things like that on someone's personal computer.

      8   Q   Dr. Levy, do you have a document that

      9 demonstrates this problem?

     10   A   Yes, I have one that I would like to show.

     11 This is an example of the files and folders as you might

     12 find on a typical computer system that -- when you look

     13 at them that way.

     14   So over here, we have one of the files -- I

     15 mean, folder, and each folder has to have a name. And

     16 then inside a folder like that, there might be literally

     17 dozens or even hundreds of files in other folders. And

     18 each one of those has to have a name.

     19   And so to navigate through all of this to find

     20 what you're looking for can be very difficult.

     21   Q   Is this the same problem we heard Apple's CEO,

     22 Mr. Jobs, talk about in the video yesterday?

     23   A   Yes, it is. Zillions of files and you can't

     24 find anything, I believe he said.

     25   Q   Back when the first Gelernter patent was filed

1 back in 1996, was this problem widely recognized?

 2   A   No. Actually, I think on personal computers,

 3 as I said, the explosion of the numbers of files you

 4 could hold on your computer hadn't really happened yet.

 5   So it was really anticipating the growth of

 6 storage units and the number of different types of

 7 things we might have on our computers.

 8   Q   You were here in the courtroom today, were you

 9 not?

10   A   Yes, I was.

11   Q   And did you hear the testimony read in of

12 Mr. Lindsay?

13   A   Yes, I did.

14   Q   And do you believe that any part of

15 Mr. Lindsay's testimony relates to this problem?

16   A   Yes. I'm sorry. I don't remember which

17 testimony was whose at the moment.

18   Q   Do you recall the testimony today regarding

19 the appreciation of this problem, folders and files and

20 having difficulty finding things?

21   A   Yes. Absolutely. I believe that he was

22 naming the same problem.

23   Q   Is it your opinion that no one, other than Dr.

24 Gelernter, was trying to efficiently organize documents

25 on computers back in 1996?

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 1      A    Oh, no.  I think that many people were working

 2   on that problem, because it's pretty well-known that

 3   it's difficult to deal with these things.

 4      Q    But you still believe that Dr. Gelernter's

 5   patents are valid, correct?

 6      A    I do.

 7      Q    Why is that?

 8      A    Well, because Dr. Gelernter expresses an

 9   embodiment of his vision of the streams and a way of

10   thinking about one's files and -- not files but

11   documents and objects that one's dealing with.

12           And that vision, I think, shapes the whole set

13   of technologies that he's espousing, that he's trying to

14   present.  And so the patents then are particular to this

15   vision of streams and the way of presenting them and

16   archiving them and so on.  And they're all kind of an

17   integrated part of -- an integral part of this future

18   vision.

19      Q    Thank you, Dr. Levy.

20           Is it your opinion that the Gelernter patents

21   describe different inventions?

22      A    Yes, it is.

23      Q    What inventions are described in the Gelernter

24   patents?

25      A    Well generally, it describes three major
```

1 things: The concept of streams, the document streams

2 that are time-ordered that describes a three-dimensional

3 user interface; and it describes an aspect called

4 automatic archiving.

5   Q   Do you have a document that you'll use that

6 track these features, these three inventions?

7   A   Yes, I do.

8   THE WITNESS: Actually, if I may, Your

9 Honor, I'd like to step in front to --

10   THE COURT: Yes, you may.

11   Q   (By Mr. DiBernardo) So, Dr. Levy, you said

12 there were three different inventions related to the

13 Gelernter patents.

14   Can you identify those for us?

15   THE WITNESS: Thank you.

16   MR. DIBERNARDO: Thank you.

17   A   Yes, the three main topics are the

18 time-ordered document stream shown up here, the

19 three-dimensional user interface, and the automatic

20 archiving.

21   And under each one of these, I've named some

22 particular aspects that we will talk about in detail as

23 we go along.

24   Q   (By Mr. DiBernardo) Are those particular

25 aspects under the main headings important to this case?

1   A   Yes, they are. They -- they correspond to

2 particular features of the Apple products, which I will

3 show correlations with in a little while.

4   Q   Thank you, Dr. Levy.

5   Let's start with the first time-ordered

6 document stream. Do you have an understanding as to why

7 the Gelernter patents use the term stream?

8   A   Well, yes. I think that they use the term

9 stream as an essential part of the idea that one's --

10 the diary of one's electronic life is this stream --

11 time-ordered stream of documents, which really can mean

12 lots of different things in that they flow through time

13 forming this stream that one then addresses when you're

14 trying to find something.

15   Q   Under the heading time-ordered document

16 stream, the first entry is mainstream.

17   How do the Gelernter patents describe the

18 mainstream?

19   A   Well, in general, they describe the mainstream

20 as something that contains all of the documents that are

21 relevant or of interest to a user. And so that's the

22 first item shown up here, each data unit, which is their

23 term for document.

24   It also describes it as an electronic diary.

25 So it's everything related to me or my stuff or somebody

1 that I'm looking at. And that means that things keep

 2 getting added to it and that it can keep growing, among

 3 a few other things.

 4   It also has past, present, and future portions

 5 there. And it also has this feature called persistence,

 6 which means that it can be updated as new things come

 7 along.

 8   MR. RANDALL: Your Honor, I'm going to

 9 make an objection about this. That definition of

10 mainstream is inconsistent with Your Honor's claim

11 construction.

12   I don't mind it at high-level discussion

13 about what the patent --

14   THE COURT: You can cover that on

15 cross-examination.

16   MR. RANDALL: Okay.

17   Q   (By Mr. DiBernardo) Thank you, Dr. Levy.

18   If we can step back, you mentioned that the

19 stream has a past, present, and future portion.

20   Can you give us an example of those past,

21 present, and future portions?

22   A   Yes. An example would be, something in the

23 past might be a document I received last week or much

24 longer ago. Something that would be in the present

25 might be a letter I'm writing right now. And something

1   in the future portion could be something like a to-do
       2   item I put in my calendar for the future.
       3   Q   And what's meant in the patents by persistent
       4   mainstream?
       5   A   Well, as I described, a persistent mainstream
       6   we'll get into in detail in a bit, means that things
       7   keep getting added to it dynamically as things come
       8   along.
       9   Q   Do the Gelernter patents use the term
      10   substream?
      11   A   Yes, they do.
      12   Q   How do they use that term? What does it refer
      13   to?
      14   A   Well, substream is how Dr. Gelernter explained
      15   the example; for example, looking for all the documents
      16   related to his wife who's name is Jane and he would type
      17   in that name.
      18   And so it really means a search or a filter
      19   where only the parts that are related to that word or
      20   that person come out as the search results. That's
      21   what's meant by a filter on the stream.
      22   And it also has the characteristic of being
      23   persistent, which we'll talk about later, which means
      24   that things are updated as they come along.
      25   Q   Can you give us an example of what you mean by

1 persistent substream?

2   A   Yeah. So if Dr. Gelernter was looking at the

3 substream that was everything related to Jane, then if a

4 new e-mail came in while he was looking at that, he

5 would see the new e-mail arrive and be shown to him

6 automatically as it came in dynamically.

7   Q   Thank you, Dr. Levy.

8   Let's turn to the second aspect of the

9 Gelernter patents, this 3-D user interface.

10   Can you first explain what a user interface

11 is?

12   A   A user interface describes how a person

13 interacts with a computer, and so that means both what's

14 on the screen that I'm looking at as a user and also how

15 I interact with it using a keyboard and a mouse or a

16 touch pad and things like that.

17   Q   What is the user interface described in the

18 Gelernter patents?

19   A   Well, generally speaking, the user interface

20 is that three-dimensional stack of documents that

21 represents the stream or substream.

22   Q   Do you have a document that demonstrates that?

23   A   Yes, I do. This is Figure 1 from the patent,

24 and this figure shows the stack of documents here. And

25 there's a pointer back here, which is sometimes called a

1 cursor, which then can be passed over that stream. And

 2 when the cursor touches one of the documents, this

 3 glance view pops up so you can see what it is that

 4 you're looking for.

 5   Q   Dr. Levy, you put a line across that stack of

 6 items.

 7   Do those items have a name in the context of

 8 the Gelernter patents?

 9   A   Yes. These are called document

10 representations in this patent.

11   Q   Dr. Gelernter, your summary board uses the

12 term receding foreshortened stack.

13   Why do you use that term?

14   A   What's that?

15   Q   Why do you use that term, receding

16 foreshortened stack?

17   A   Well, that phrase occurs in the patent claims.

18 It's a very important aspect of the presentation, the

19 view of a stream or substream in the 3-D user interface.

20   And that means that there is an appearance of

21 things moving into the third dimension, or receding; and

22 that there's some kind of use of perspective to give you

23 that view of more prominent things or more recent things

24 being in the front, so they're more prominent, and the

25 less recent things being farther to the back and less

1   prominent.

2   Q   Is this idea of a receding foreshortened stack

3   important to your opinion that Apple infringes the

4   Gelernter patents?

5   A   Yes, it is.

6   Q   And why is that?

7   A   Well, I think I -- I think I explained that

8   with the more prominent things being in front and the

9   less prominent things being in back. And so that sense

10 of the receding and foreshortening is a key aspect of

11 how that's done.

12   Q   Thank you.

13   Is this display necessary for the creation of

14 the stream you were talking about earlier?

15   A   No, it isn't. It may be a little bit hard to

16 grasp, but the stream itself is not the display. The

17 stream is something that's inside the computer that's in

18 something called a data structure. And I'll be talking

19 about that more in a little bit.

20   So as in -- if you remember Dr. Gelernter's

21 example where he showed all those things coming together

22 to form the stream, and then after a while there was a

23 filter and you saw just the documents you were

24 interested in, the stream that was going along the

25 bottom there is actually something that's entirely in

1 the computer. It's not on the screen. And so it's not

2 necessary to have a display in order to have the stream.

3   Q   You were here for Apple's opening statement in

4 court, were you not?

5   A   Yes, I was.

6   Q   And did you hear Apple's attorneys explain and

7 point to Figure 1 of the patent and explain that as a

8 stream?

9   A   Yes, I do.

10   Q   Do you agree with that characterization?

11   A   No. As I just explained, the stream itself is

12 not the display. And even though occasionally in the

13 patent, the words will use the term stream or substream

14 to describe what's being shown, in fact, the claims

15 definition are entirely related to what's inside the

16 computer.

17   Q   Thank you. Let's turn back to the patent.

18   Dr. Levy, can you describe how a person

19 interacts with this user interface of the Gelernter

20 patents?

21   A   Yes, I can.

22   THE WITNESS: Could you show the next

23 page?

24   A   This is an animation showing how as you slide

25 the pointer over the stack, the glance view pops up over

1 here to show what's there. And that's a key item

        2 described in the patent about how to browse through this

        3 stack of documents.

        4   Q   And is this feature the way a person interacts

        5 with the interfaces reflected on your poster board?

        6   A   I'm sorry?

        7   Q   I'm sorry. I'll speak up.

        8   Is this the way a person interacts with the

        9 interface of the Gelernter patents reflected on your

       10 poster board?

       11   A   Yes.

       12   THE WITNESS: Could you provide me a copy

       13 of the poster board?

       14   MR. DIBERNARDO: Sure.

       15   Your Honor, may I hand the witness a copy

       16 of his poster boards since he can't see it?

       17   THE COURT: Yes, you may.

       18   THE WITNESS: Thank you. I can't see

       19 them from here.

       20   A   So on the board, you'll see the words document

       21 representations, which is talking about the squares here

       22 in the stack.

       23   The glance view, which refers to this thing in

       24 the middle; and the receding foreshortened stack, which

       25 is the stack on this figure; and sliding the pointer

1 refers to that action you just saw happen.

2   Q   (By Mr. DiBernardo) Thank you, Dr. Levy.

3   Let's move on to the third invention you

4 identified in the Gelernter's patents, the automatic

5 archiving.

6   Can you first explain what you mean by

7 automatic archiving?

8   A   Yes. Archiving --

9   THE WITNESS: I believe the next page

10 will show a figure.

11   A   So archiving is copying or moving a document

12 from the computer to an additional storage -- backup

13 storage somewhere, usually outside the main computer.

14   And so, for example, if I had a bunch of

15 papers in my office and I wanted to make sure I didn't

16 lose an important one, I might have my assistant make a

17 copy of that and put it away in the file cabinet over

18 here on the right.

19   And so archiving is that kind of action.

20 Automatic archiving means doing that in a certain way

21 without my asking it to.

22   Q   (By Mr. DiBernardo) And is automatic archiving

23 an important aspect or --

24   A   Yes. It's an important aspect of the

25 Gelernter inventions shown under automatic archiving.

1   The archiving refers to automatic backup.

2   Q   Does automatic archiving provide benefits to

3   users of computers?

4   A   Yes, it does. For one thing, it allows me not

5   to worry about which things I might lose, because I can

6   always go find them in the backup or archive. And also,

7   if I don't have to say which things to save and it

8   automatically selects things for me, that also saves

9   that amount of time and concern about remembering to do

10   it.

11   Q   Thank you, Dr. Levy.

12   Let's turn to the Apple products now, and

13   perhaps we should take a minute. We've heard a lot of

14   different terms.

15   Would you refresh our recollection as to what

16   the Apple products are?

17   A   Yes. You mean the features that we're going

18   to focus on?

19   Q   Please.

20   A   We're going to focus on the three features

21   that you've heard about: Spotlight and the Coverflow

22   interface and the Time Machine backup facility.

23   Q   We heard earlier today about Scopeware. Is

24   Scopeware an Apple product?

25   A   I haven't studied the question of Scopeware,

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 1  so we're not concerned with Scopeware as such.

 2       Q    Okay.  So it's not an Apple product?

 3       A    No, it's not.

 4       Q    Just trying to keep things straight.

 5       A    Yes, that's important.

 6       Q    So, Dr. Levy, based on your analysis of the

 7  Apple products, are certain features of the Apple

 8  products more relevant than others to your opinion of

 9  infringement?

10       A    Yes, it is.

11            THE WITNESS:  And shall I use the board

12  to summarize that or --

13            MR. DIBERNARDO:  Your Honor, may the

14  witness go to the board?

15            THE COURT:  Yes, he may.

16       A    So this summarizes the features of the Apple

17  products:  Spotlight, Coverflow, and Time Machine.  And

18  underneath each of those, I've shown the particular

19  aspects of the features in the Apple products that

20  correspond to the claimed inventions in the Gelernter

21  patents.

22            And so I'll be going through these one by one

23  carefully as we talk about the claims.

24       Q    (By Mr. DiBernardo) Dr. Levy, can you go

25  through them first at a high level one by one?
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 1              Why is Spotlight relevant to your opinion that
 2   Apple infringes?
 3        A    That's because Spotlight contains something
 4   called the Spotlight Store, which I will show is an
 5   implementation of the mainstream and these aspects of
 6   it.  The Spotlight search results, when they're
 7   obtained, correspond to the substream of the patents.
 8              And then, of course, Coverflow implements a
 9   3-D user interface.  And I'll show it's related to the
10   invention, and the Time Machine to the automatic
11   archiving.
12        Q    Thank you.
13              Dr. Levy, let's start with the first feature,
14   Spotlight.  Can you generally explain what Spotlight is?
15        A    Yes.  Spotlight is a feature and a facility
16   that actually consists of two major portions.  There's
17   the port -- part that's inside the computer that
18   organizes documents, which I'm going to refer to as the
19   Spotlight Store.
20              And, of course, there's a lot of software
21   programs associated with that that I've heard referred
22   to in the testimony as the Spotlight engine.  I'm
23   actually not going to talk about that so much, just the
24   store.
25              But you'll know when we talk about the
```

1   Spotlight Store, I'm talking about the software that

      2   manages it and the contents as well. So the Spotlight

      3   Store is a key part.

      4   And then the Spotlight search results, we're

      5   going to talk about how the Spotlight allows someone to

      6   search for things or find things and get results back

      7   that eventually gets displayed to that.

      8   Q   Dr. Levy, do you have an opinion as to whether

      9   Spotlight is important to the Apple computers?

     10   A   Oh, yes. I believe it's not only an integral

     11   part, but a key feature of the Apple operating systems.

     12   Q   Do you have something to show us that

     13   demonstrates how a search is performed using Spotlight?

     14   A   Yes. I'd like to show sort of a video clip

     15   that demonstrates some of this.

     16   (Video playing.)

     17   STEVE JOBS: What I'd like to do now is

     18   just show you a little -- this is Spotlight.

     19   All right. I'm going to get the

     20   Spotlight here. Just click up here. Isn't this great?

     21   I've got a 20-inch cinema display every

     22   single pixel up there on the screen. That's fantastic.

     23   So I'm going to say, Spotlight, I'm going

     24   to look for soccer, and, boom, it finds everything in my

     25   system. I've got about a quarter million files on this

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 1  system here.  I've got a quarter million files, and it
 2  just went through and found them all.
 3            And I'm just going to say show all, show
 4  the window, and here's all the things it found about
 5  soccer.  And I can -- if they're sorted over here by
 6  kind.  I can sort them by date, if I want to, so I'll
 7  see all the things that I -- I've opened today or last
 8  week or last month.  Or I can sort it by people, but I'm
 9  going to keep by kind here.
10            And I'm going to go look at, as an
11  example, an equipment price list up here in documents,
12  the first entry.  And it opened an Excel document and
13  found out that the word soccer was inside an Excel
14  document, and, of course, it found it.  Very easy.
15            (End of video clip.)
16     Q    (By Mr. DiBernardo) Dr. Levy, is the operation
17  of Spotlight that we just saw relevant to your opinion
18  that Apple infringes the Gelernter patents?
19     A    Well, yes.  We just saw a demonstration of how
20  Spotlight searches for things in any case.  We'll talk
21  more in detail about how that works.
22     Q    And do you have a document that demonstrates
23  how Spotlight actually works?
24     A    Yes, I do.
25            THE WITNESS:  If you'll go to the next
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 1  page, please.

 2      A    So here, I'm going to describe for you how the

 3  Spotlight Store works.  Now, this is the core of how

 4  Spotlight keeps track of documents, organizes them, and

 5  then answers questions about how to find things.  So I'm

 6  using here a simplified diagram that I've taken from one

 7  of Apple's own manuals.

 8           They use this magnifying glass symbol here to

 9  represent Spotlight, and inside the Spotlight Store

10  there are two portions:  The Metadata Store and the

11  content index.

12      Q    Dr. Levy, what's the Metadata Store?

13      A    Well, first, let's say what metadata is.

14           I think you heard the term, but metadata is

15  information about a document rather than the document

16  itself.  And so it might be something about like who

17  wrote the document or what time it was created.

18      Q    Is metadata important to your opinion that

19  Apple infringes the Gelernter patents?

20      A    Yes, it is.  It's a key part of the aspect of

21  keeping track of time and the sequence -- time sequence

22  of documents.

23      Q    And can you describe the content index in the

24  Spotlight Store?

25      A    Yes.  The content index is another kind of
```

1 storage system that keeps track of all the words inside

 2 the document. So content just means what was written in

 3 the document. So it's kind of like a index in the back

 4 of a book where you can look up any of the topics, or in

 5 this case, individual words and find out what page that

 6 word was on.

 7   And the content index it gives you a list of

 8 all the documents that have that word for each word

 9 that's in it.

10   Q   Thank you for that.

11   Can you describe now how the Spotlight Store

12 is actually used?

13   A   Yes. I'm going to describe its operation in

14 five steps.

15   THE WITNESS: So if you'll show the next

16 page, please.

17   A   So in general, a document is either created or

18 received by a computer system, and I'm showing this as

19 documents go in. Now, they go into the system; and when

20 they do, the Spotlight Store is notified that something

21 new has come in. So that's Step No. 1.

22   And Step No. 2, information about the

23 document, which is metadata, is stored in the

24 Spotlight -- in the Metadata Store, things like date and

25 time that it was created or the author.

1   And then third, the words that are in the

          2 document are stored in the content index.

          3   THE WITNESS: So if you'll go to the next

          4 page, please.

          5   A   So then Steps 4 and 5 have to do with how this

          6 is used once you've loaded up information into the

          7 Spotlight Store.

          8   The next one is with this question mark on the

          9 right for No. 4 is a request for a search coming in.

         10   Now, this is part of something that's called

         11 an API, application program interface, which we'll

         12 describe a little bit more in a moment. But all you

         13 need to remember now is that it's a way for two pieces

         14 of software to talk to each other.

         15   So first, the request for a search comes into

         16 the Spotlight Store, and then the contents of the

         17 metadata are found that match that, and then search

         18 results are returned in Step No. 5.

         19   And I'm showing that as a bunch of documents,

         20 and that's where we're going to see search results and

         21 substreams happen.

         22   Q   (By Mr. DiBernardo) Dr. Levy, can you explain

         23 for us where the search comes from in Step 4 in your

         24 diagram?

         25   A   Yes. This search might come from any one of a

1 number of application programs, in fact, the thing

 2 called the Finder, which is a very special application

 3 program in the Macintosh operating systems.

 4   So, for example, it might come from the

 5 calendar program to find things related to due dates or

 6 on a to-do item, or it might come from an address book

 7 application to find a person whose address card is in

 8 that or other information, or it might come from the

 9 Finder, in which case it's looking for any kind of

10 document based on either its contents or its metadata.

11   Q   Thank you.

12   Do you have a document that demonstrates an

13 example of a document -- of metadata and content going

14 on into the Spotlight Store?

15   A   Yes. On the next page, I have an example of

16 an e-mail, and by now, actually, you've all seen a lot

17 of e-mails shown to you.

18   This is shown, of course, as if it were on

19 paper, but, in fact, an e-mail is an electronic document

20 that comes in, but it still has all this information in

21 it.

22   Q   Does that e-mail have metadata?

23   A   Yes, it does.

24   THE WITNESS: If you'll show the next

25 page, please.

1   A   So in this e-mail, the metadata is many

         2 things, but includes the name of the sender and the date

         3 it was sent. And as you'll see, once that comes in, the

         4 metadata is extracted and stored in the Metadata Store.

         5   Q   (By Mr. DiBernardo) And does that e-mail have

         6 content?

         7   A   Yes, it does.

         8   On the next page, you'll see the content, and

         9 some of it is highlighted. It's just the words that are

        10 written in the document, in the body of the e-mail in

        11 this case.

        12   And so these words, each one of them, get

        13 entered into the context -- content index, and so they

        14 can be -- the document can be found based on the words

        15 that were in it. And this shows just a few of the words

        16 that were in this document.

        17   Q   Thank you, Dr. Levy.

        18   Let's turn back to your summary board. Your

        19 summary board shows the Spotlight Store corresponding to

        20 the mainstream.

        21   What makes the Spotlight Store correspond to

        22 the mainstream, in your opinion?

        23   A   In my opinion, the Spotlight Store corresponds

        24 to the mainstream for several reasons. Number one, it

        25 contains information about all the documents of interest

1 to a user and of all different types from all different
 2 sources.
 3   Number two, the documents keep being added to
 4 this. And also, because the -- when you request a
 5 search and get results back, the results can be given in
 6 time-order. That forms a substream. And so that tells
 7 me that in this Spotlight Store where everything is
 8 stored, that's where the mainstream is.
 9   Q   Thank you.
10   Dr. Levy, do you have a document that
11 demonstrates the basis for your description of the
12 Spotlight Store?
13   A   Yes.
14   THE WITNESS: If you'll go to the next
15 page, please.
16   A   These are some notes, then some summary from
17 some of Apple's manuals and some of Apple's software
18 developers. It repeats what you've already heard.
19 The Spotlight Store holds metadata of the files. Some
20 of the attributes of the metadata include creation date,
21 modification date, and due date. That's some of the
22 time-oriented information.
23   These APIs, that's the way of talking to the
24 Spotlight Store, can return documents organized by time.
25 And the MDQuery API, which is the one we were talking

1   about, returns search results in time order. And then

           2   content index in Leopard and Snow Leopard sorts the

           3   metadata in time order. And that is also important, as

           4   I'll explain in a bit, to confirm that this mainstream

           5   is in the Spotlight index.

           6   Q   Thank you.

           7   Your earlier example used an e-mail. Are

           8   e-mails the only types of documents that are stored in

           9   the Spotlight Store?

          10   A   No. Many types of documents are stored in the

          11   Spotlight Store, including anything from letters I'm

          12   writing to calendar items to photographs and movies and

          13   music and many other things.

          14   Q   And is this aspect of the Spotlight Store

          15   important to your opinion that Apple infringes?

          16   A   Yes. It is certainly part of it because of

          17   the various types of documents and coming in various

          18   formats.

          19   Q   Do you have something to show us that

          20   demonstrates these different types of documents in the

          21   Spotlight Store?

          22   A   Yes. I'd like to show another short video

          23   clip, please.

          24   (Video playing.)

          25   STEVE JOBS: So I take a handful of

1 features that I'd like to show you in Mac OS 10 Tiger,

 2 and the first one and the most important one is

 3 Spotlight.

 4   Spotlight is our search technology that's

 5 built right into the core of Mac OS 10 Tiger, and it

 6 allows you to find anything on your system: Documents,

 7 images, you know, appointments and calendars, things in

 8 PDF files, bookmarks, anything, e-mails, contacts.

 9 You name it, and you can find it almost instantly.

10   (End of video clip.)

11   Q   (By Mr. DiBernardo) Dr. Levy, we heard Apple's

12 CEO, Steve Jobs, describe Spotlight as built right into

13 the core.

14   Can you explain what that means?

15   A   Yes. Spotlight and the Spotlight Store are

16 integrated into the operating system as a major facility

17 that's offered to all of the application programs,

18 including the Finder to use.

19   And not only that, it can be used by programs

20 that are written by people other than Apple so that

21 their applications can use the Spotlight Store to find

22 things.

23   And so it's really an integral part of the

24 operating system.

25   Q   Dr. Levy, do you have any other support for

1 your opinion that different kinds of documents are

 2 stored in the Spotlight Store?

 3   A   Yes. On the next page, here are a few quotes

 4 about Spotlight allowing you to find anything and naming

 5 some of the things that it can find.

 6   It says it indexes, importing the metadata in

 7 all files in your computer. Spotlight searches

 8 everything.

 9   And some of the examples down below includes

10 images -- that's like photographs or images -- music,

11 movies, various documents and messages and contacts and

12 many other things.

13   And, in fact, a person writing the application

14 program for use with Apple computers can also create

15 what's called an importer so that new additional types

16 of things can also be put into the Spotlight Store.

17   Q   Dr. Levy, where did these quotes come from?

18   A   These are from Apple's documents or their

19 people who were talking about them.

20   Q   Dr. Levy, does this feature, Spotlight Store,

21 that includes documents of different types correspond to

22 any feature in the Gelernter patents?

23   A   Yes. It corresponds to the mainstream, the

24 Spotlight Store does, because it contains everything of

25 interest to a user.

1   Q   Dr. Levy, do the contents of the Spotlight

2 Store ever change over time?

3   A   Yes, they do. They are dynamically updated as

4 new documents or different kinds of files come into the

5 computer system or are created on the computer system.

6   Q   Do you have a document that demonstrates how

7 this is done?

8   A   Yes.

9   THE WITNESS: If you would go to the next

10 page.

11   A   This is a quote from one of the Apple

12 documents: As each file is created, copied, updated, or

13 deleted, Spotlight ensures that the entries for that

14 file are updated.

15   So it's not just a static picture of what is

16 in a document or what it's about, but every time it's

17 changed, the Spotlight Store updates the information.

18   Q   (By Mr. DiBernardo) And does this feature of

19 the Spotlight Store correspond to any feature in the

20 Gelernter patents?

21   A   Yes. This dynamically updating in the

22 Spotlight Store corresponds to the persistent mainstream

23 characteristic that we'll show in the patents.

24   Q   And that's reflected on your poster board?

25   A   Yes, it is. If you'll look at the last line

1 just above the 3-D user interface, you'll see how they

 2 correspond.

 3   Q   Dr. Levy, once a Spotlight search is

 4 performed, are the search results ever updated?

 5   A   Yes, they are.

 6   Q   Can you give us an example of how they might

 7 be updated?

 8   A   Yes. As the example I gave before

 9 Dr. Gelernter did the search for everything related to

10 Jane, and he's looking at the search results on the

11 screen.

12   And then if a new thing comes in that has Jane

13 in it or is related to her name, that would also show up

14 dynamically right after it came in on his search

15 results.

16   Q   Can you show us something that demonstrates

17 the basis for your opinion?

18   A   Yes. I'd like to show another short video

19 clip, please.

20   (Video playing.)

21   STEVE JOBS: But it goes much deeper than

22 that, because, because the OS can let Spotlight know

23 when something changes, it instantly updates when things

24 change. You don't have to run another search. You

25 don't have to wait 10 minutes.

1   You can be looking at a result, and it

          2   will change right in front of you, if the underlying

          3   files change, because the OS can notify Spotlight that

          4   that's happened instantly.

          5   (End of video clip.)

          6   A   So that instant notification is what enables

          7   the Spotlight search results to be updated dynamically.

          8   Q   (By Mr. DiBernardo) In the video, Mr. Jobs and

          9   other people have referenced OS. Just so we're all on

         10   the same page, can you tell us what OS stands for?

         11   A   OS just means operating system, so it's

         12   referring to these operating systems that we've been

         13   describing.

         14   Q   Thank you.

         15   Do you have any other documents that

         16   demonstrate the basis for your opinion that the search

         17   results in Spotlight are dynamically updated?

         18   A   Yes. On the next page, I have some quotes

         19   from -- the first one from Steve Jobs in -- that you

         20   just heard, that the results will change right in front

         21   of you.

         22   And also a couple of other quotes: When the

         23   file had -- of the computer is changed, Spotlight knows

         24   and revises your search results on the fly.

         25   And also what Spotlight calls this feature of

1   dynamic updates live queries just means that the search
  2   results are live and keep being updated as you go, so
  3   updating the results.
  4   Q   Dr. Levy, do the Tiger, Leopard, and Snow
  5   Leopard operating systems include the Spotlight Store
  6   that you've just described?
  7   A   Yes.
  8   Q   Are there any differences between the
  9   Spotlight Store in the Tiger, Leopard, and Snow Leopard
 10   operating system?
 11   A   Yes, there is one difference.
 12   In the Leopard and Snow Leopard operating
 13   systems, not only is the metadata put into the metadata
 14   store, it's also -- the words of the metadata are also
 15   entered into the content index.
 16   Q   Do you have a document that demonstrates this
 17   additional feature of Leopard and Snow Leopard?
 18   A   Yes.
 19   THE WITNESS: If you'll show the next
 20   page, please.
 21   A   Here's the same e-mail that we talked about
 22   before, but now instead of the sender and the date sent
 23   only being -- showing up in the metadata store, you'll
 24   find that those words are also included in the content
 25   index.

```
 1      Q    (By Mr. DiBernardo) Thank you.

 2           Okay.  Dr. Levy, let's turn to what you have

 3   on the poster board as Coverflow.  Let's start by

 4   explaining how Coverflow is relevant to your opinion

 5   that Apple infringes.

 6      A    Okay.  Well, Coverflow shows a

 7   three-dimensional interface that I believe infringes the

 8   3-D user interface of the Gelernter patents.

 9      Q    Can you show us something that demonstrates

10   what Coverflow is?

11      A    Yes.

12               THE WITNESS:  Please, the next page.

13               (Video playing.)

14               STEVE JOBS:  Well, let me first show you

15   Coverflow.  And here's Coverflow view, and I can just

16   scroll through my documents and see all my documents and

17   find exactly what I'm looking for right here.  It's

18   really simple, and it's really, really helpful.

19               (End of video clip.)

20      A    So that's a brief vision of how it moves.

21   Anyway, he talks some more.

22      Q    (By Mr. DiBernardo) That was kind of quick.

23   Do you have another document that you can use to explain

24   the different aspects and characteristics of Coverflow?

25      A    Yes.
```

1   On the next page, here's an example of

          2   Coverflow as it appeared on my own system one day with

          3   some particular set of documents that were search

          4   results.

          5   And here you -- let me see if we can get the

          6   right color. We have the center portion that is larger

          7   and closer to the viewer, and then we have the stacks

          8   going -- the stack to the left and to the right that

          9   have document representations stacked up and fading away

         10   as they get towards the sides.

         11   So as you see, the image -- as the image moves

         12   towards the sides, there's an increase in the shadows

         13   between them. There's a fog effect that makes them look

         14   farther away.

         15   They show perspective in the way that I'm

         16   going to show more in a bit, and there's a little bit

         17   less of the content shown on each one as you go out.

         18   And also the reflections in the tabletop sort of thing

         19   there also tend to fade out.

         20   So those all give the impression of depth to

         21   this display.

         22   Q   (By Mr. DiBernardo) Are these characteristics

         23   that you just described of the Coverflow view reflected

         24   on your summary board?

         25   A   Yes. Under Coverflow, you'll see that there

1 are images of the documents here. There's a larger

2 center image. The images recede to the side with

3 changing perspective. And as we've seen in the

4 demonstration so far, there's a way of sliding the

5 stack.

6   Q   Let's actually turn to that notion of sliding.

7   Can you give us a better sense as to how a

8 person actually uses Coverflow?

9   A   Yes.

10   THE WITNESS: If you'll go to the next

11 page, you'll see there's an animation that gives an

12 example.

13   (Animation playing.)

14   A   This is how one would move through the stack

15 of documents using Coverflow. And as each one is

16 selected, it moves to the center and pops forward.

17   Q   (By Mr. DiBernardo) You can see on the screen,

18 Dr. Levy, there's a little horizontal bar under the

19 document images. Can you explain what that is?

20   A   Yes. This thing is called the scroll thumb,

21 and that is one way to cause the stack to move. If you

22 put your cursor over that and hold the mouse button down

23 and drag it -- that's what they call it, dragging --

24 that will cause the whole stack to move. And there are

25 other ways to cause that stack to move.

```
 1      Q    Okay.  And is this notion of sliding reflected

 2  on your poster board?

 3      A    Yes, it is.  That's the one that says:

 4  Sliding stack.

 5      Q    Dr. Levy, does Coverflow provide any benefits

 6  to Apple users?

 7      A    Yes.  It's a very convenient way for the user

 8  to browse through the documents with this glance view

 9  popping up in the center as you move through the stack.

10  And so that makes it easy to tell what kind of document

11  it is.

12      Q    Does Coverflow work with the Spotlight search

13  you described?

14      A    Yes.  Yes, it does.  Spotlight search results

15  can be shown in the Coverflow view.

16      Q    Thank you, Dr. Levy.

17           Let's move to the third and final Apple

18  feature, Time Machine.  Can you describe for us what

19  Time Machine is?

20      A    Yes.  Time Machine is an archiving or backup

21  facility.

22                THE WITNESS:  Show the next slide,

23  actually.

24      A    So this is the picture I showed you before

25  about archiving.  And one of the ways you -- one of the
```

1   kinds of backup storage that there is, is the product

        2   sold by Apple called Time Capsule, and it's a -- it's a

        3   storage unit that you plug into your computer, and

        4   that's a place where Time Machine can put these backup

        5   copies.

        6   Q   (By Mr. DiBernardo) How is Time Machine

        7   relevant to your opinion that Apple infringes the

        8   Gelernter patents?

        9   A   Well, I believe that Time Machine infringes

        10 the automatic archiving aspect of the Gelernter

        11 inventions.

        12   Q   Do you have a document that demonstrates

        13 what's archived in Time Machine?

        14   A   Yes.

        15   (Video playing.)

        16   STEVE JOBS: Time Machine automatically

        17 backs up your Mac. If you change a file, that file is

        18 automatically backed up.

        19   And we back up everything. We back up

        20 all of your photos, all of your music, all of your

        21 documents, all your files, your folders, your

        22 applications, your operating system, your software

        23 updates, everything. We back up absolutely everything.

        24   (End of video clip.)

        25   Q   (By Mr. DiBernardo) Dr. Levy, is this video

1 your only support for the description of Time Machine?

 2   A   No. I have another document.

 3   THE WITNESS: If you would show the next

 4 page, please.

 5   A   So here are -- here's an image from Apple's

 6 own documents, manuals, and a description of Time

 7 Machine and a couple of quotes.

 8   Time Machine is an automatic backup, keeps an

 9 up-to-date copy of everything. How you find things is

10 you select a date and let Time Machine find your

11 search -- your results, and you can do a Spotlight

12 search in those results -- in the Time Machine.

13   And the last quote, which is not highlighted

14 here, shows that it doesn't let anything get more than

15 one hour old. So every hour, it makes another backup so

16 that anything older than that would be archived.

17   Q   (By Mr. DiBernardo) Does Time Machine put

18 anything else, other than documents, in its archive?

19   A   Yes. In order to be able to do a Spotlight

20 search in the archive, it has to put the metadata there

21 as well. And so the metadata and the content index are

22 also created in the archive.

23   Q   Does that archive metadata include things like

24 the date an e-mail was sent in the center of that e-mail

25 the way you described earlier?

1   A   Yes, it does.

        2   Q   Okay. Are these features reflected on your

        3   poster board, Dr. Levy?

        4   A   Yes. On the last two lines of this board,

        5   you'll see Time Machine has automatic backup, which

        6   corresponds to the archiving, and the fact that

        7   Spotlight search can be done in Time Machine corresponds

        8   to the searchable aspect of the automatic archiving.

        9   Q   Thank you, Dr. Levy.

       10   Now let's turn to your detailed analysis of

       11   infringement of the claims of the Gelernter patents.

       12   Do you have a document that tracks your

       13   opinion that Apple infringes the claims of the Gelernter

       14   patent?

       15   A   Yes, I do.

       16   THE WITNESS: And with your permission,

       17   I'll --

       18   MR. DIBERNARDO: With your permission,

       19   Your Honor, we'd like to show a summary board that we

       20   can use to keep track of these claims.

       21   THE COURT: All right, as a

       22   demonstrative.

       23   THE WITNESS: I don't need a microphone.

       24   Can y'all see that?

       25   No? All right. I'll get another easel.

1   Now, can y'all see?

 2   Q   (By Mr. DiBernardo) Thank you.

 3   A   So this is a summary chart that shows the

 4 claims that we've asserted against the Apple products

 5 along the top, and then down the side are the products

 6 themselves that we claim infringe these patents.

 7   Q   Dr. Levy, I see that the first line, Tiger OS,

 8 Tiger is listed separately than Leopard and Snow

 9 Leopard. Can you explain why?

10   A   Yes. We do not claim infringement by the

11 Tiger operating system for certain claims starting from

12 22 on to the right. And so that's why those are

13 crosshatched or grayed out.

14   Q   Is there a difference between Tiger on the one

15 hand and Leopard and Snow Leopard on the other?

16   A   Yes. The Coverflow and Time Machine features

17 were not introduced until the Leopard operating system.

18   Q   And how about the Spotlight feature?

19   A   The Spotlight feature is in both of them.

20   Q   Dr. Levy, the first patent claim in the upper

21 left is '227 patent, Claim 13. Let's start there.

22   Have you prepared any documents to demonstrate

23 to the jury your opinion that Apple infringes Claim 13

24 of the '227?

25   A   Yes, I have. And this is the -- Claim 13 of

```
 1  the '227.  Now, this has eight parts to it.  Each part

 2  is known as a limitation.  And we're going to be going

 3  through these one by one, because we have to show how

 4  Apple infringes each and every part of it.

 5          So don't worry about the fact that this type

 6  is a little small.  We'll be repeating them one by one.

 7  And then on the right, I have the particular feature of

 8  the Apple operating systems, just as a summary, that is

 9  related to that particular limitation.

10      Q    Before we get into a detailed analysis,

11  Dr. Levy, can you explain generally what Claim 13

12  covers?

13      A    Generally, Claim 13 has to do with streams and

14  the operation of streams.  And so, therefore, only the

15  Spotlight feature is involved in these aspects.

16      Q    Okay.  You mentioned Claim 13 covers a method.

17          What performs that method?

18      A    Well, the method is performed by the computer

19  and the software in it working in response to something

20  that a user is doing on the computer system.

21      Q    Let's turn to the first limitation, (a).  Do

22  you have an document that explains your opinion on how

23  Apple's Tiger, Leopard, and Snow Leopard operating

24  systems include that limitation (a)?

25      A    Yes.
```

```
 1               THE WITNESS:  The next page, please.
 2      A    So here we have Claim 13, and we've numbered
 3 these (a) through (h), so -- you may not be able to see
 4 that, but this is limitation (a).
 5           And it's a method which organizes each data
 6 unit received by or generated by a computer system
 7 comprising the steps of, and then each of the other
 8 limitations are those steps.
 9           So this -- yeah.  Go ahead.
10      Q    (By Mr. DiBernardo) Can you first describe
11 just the format, the layout of your page?
12      A    Yes.  For each of these limitations, we're
13 going to have the -- in the upper left, the blue part,
14 the -- the limitation itself exactly as it reads in the
15 patent.
16           And then down below that, we will have a --
17 any terms that are in there that were construed by the
18 Court so that we make sure that we follow those.
19           And then on the right, we'll have either
20 information that helps to show how I determined that
21 they infringe.
22           In this case, we have a diagram of the
23 Spotlight Store, which is a key part of this.
24           Across the top, of course, I also have the
25 theme or the general idea that's expressed in that claim
```

1 limitation.

 2   Q   And could you just summarize how Apple meets

 3 this limitation (a)?

 4   A   Yes. As I've described already to you, the

 5 Spotlight Store organizes the data units that come into

 6 the computer or are received -- or are generated by the

 7 computer.

 8   And so in the way that I've described,

 9 everything that's there is in the Spotlight Store, and

10 that's how that meets this claim limitation, which will

11 be shown in more detail as we go through the others.

12   Q   Thank you.

13   Let's the turn to limitation (b). Do you have

14 a document that explains your opinion that Apple's

15 products include limitation (b)?

16   A   Yes.

17   THE WITNESS: The next page, please.

18   A   So then the first step is: Generating a

19 mainstream of data units. And we'll talk about the

20 substream in a little bit. That mainstream is for

21 receiving these data units that are received or

22 generated by them.

23   And so that's why I've -- and so mainstream

24 has already -- has been construed by the Court as a

25 stream that's inclusive of every data unit or document

1 received by or generated by the computer system.

2 Now, remember, the data unit means an item of

3 information of interest to the user that the user

4 considers as a unit. So this is what that's referring

5 to.

6 And then a stream is used in that definition,

7 and so a stream is a time-ordered sequence of documents

8 that functions as a diary of a person's life and is

9 designed to have three main portions: Past, present,

10 and future.

11 So the support for this is that the Spotlight

12 indexes everything, all of the files. The Spotlight

13 Store holds all the metadata attributes. And as I've

14 already explained, having those time-related metadata

15 attributes and the operation of the search results make

16 the Spotlight Store a mainstream.

17 Q (By Mr. DiBernardo) Can you remind us, where

18 does that mainstream exist in the Apple's computers?

19 A It exists inside the Spotlight Store, along

20 with, of course, the underlying files that are stored in

21 the file system. So those are referred to in the

22 Spotlight Store, so we think of them as being in the

23 Spotlight Store.

24 Q Dr. Levy, limitation (b) also refers to

25 substreams for containing data units only from the

1 mainstream. Is it your opinion that Apple's operating

2 systems include this limitation?

3   A   Yes. On the next page, we're still looking at

4 claim limitation (b), but now we're focusing on the fact

5 that it generates at least one substream, and the

6 substream is for containing data units only from the

7 mainstream.

8   So as we've seen -- I'm sorry.

9   So the Court's definition of a substream is a

10 stream that is a subset of data units or documents

11 yielded by a filter on the screen and the filter

12 identifying certain documents within the screen.

13   Well, that's just a very good description of a

14 search that we've described that selects certain

15 documents out of that mainstream or out of the full set

16 of all the data units on the computer system.

17   And so the Spotlight search results that are

18 returned over here on the -- here (indicates) are

19 composed of substream that's in a data structure that's

20 returned through the API, and thus, it meets this claim

21 limitation.

22   Q   Thank you.

23   And do you have a document that explains your

24 opinion that the Apple operating systems include

25 limitation (c)?

```
 1     A     That's on the next page.  No.  I'm sorry.  We
 2  actually have an example of the substream, and I'd like
 3  to explain this in a way that we can grasp in everyday
 4  life.
 5           So if you were a schoolteacher and you wanted
 6  to organize the students in your class, it would be like
 7  an application program that's going to request something
 8  from the main office at the school.  Give me a class
 9  list.
10           And so this would be an example of a form you
11  might fill out that gave the grade number you're
12  teaching and the teacher's name and said:  I want to --
13  I want to have my students sent back to me that are
14  going to be in this class listed by their birth date.
15           You might be interested in that because you
16  want to order your class by the age of the students.
17  So this form represents the API or the way in which a
18  Spotlight search or a search would be done.  So you
19  would just send this form down to the main office, and
20  then it would get filled out based on the mainstream of
21  information that was stored in the office, which would
22  have all of the students.
23           So on the next page, this is the way it might
24  come back to you with those search results.  So here are
25  the eight students in this case, who are in your class,
```

1   and they are organized in a time-ordered substream by

 2   birthday with the oldest first and the youngest last.

 3   And so this would be the equivalent -- this is

 4   an example of a substream.

 5   Now, I want you to notice that this form is

 6   not what's necessarily displayed, and so the equivalent

 7   for a teacher might be: I get this form back, and I

 8   copy these into my class book and maybe later on assign

 9   the seats for the students in my class.

10   So it's not -- it's not necessary to be in the

11   final form in which it's displayed in order to come back

12   as a time-ordered list.

13   So that substream is still in the data

14   structures of this computer. And there's an example

15   that you might find in -- something like that in

16   everyday life.

17   Q   In your example, Dr. Levy, do the birthdays

18   correspond to anything in the Spotlight Store?

19   A   Yes. These birthdays correspond to time-based

20   information or related to what we call a timestamp?

21   Q   And is that time-based information stored in

22   the Spotlight Store?

23   A   Yes, it is.

24   Q   Where is it stored?

25   A   It's stored at least in the metadata store and

1 in the Leopard, and later operating systems, also in the

2 content index.

3   Q   Thank you.

4   With that, let's move on to the next

5 limitation, (c). Do you have a document that explains

6 your opinion regarding limitation (c)?

7   A   Yes. On the next page, it describes receiving

8 data units from other computer systems. And remember, a

9 data unit is any item of significance to the user that

10 the user considers as a unit. And of course, these are

11 things like e-mails or maybe other documents.

12   And ways that the computer system might

13 receive things from outside would be by e-mails coming

14 in, or another way might be over the internet by

15 downloading some file from a website. Those are just a

16 couple of examples.

17   And so since all Apple computers do that, they

18 do meet this claim limitation.

19   Q   Thank you.

20   Let's move on limitation (d). Can you explain

21 your opinion as to why Apple's products include this

22 limitation?

23   A   Yes. This limitation is generating data units

24 in the computer systems. And so there are many ways to

25 generate a new data unit in your computer system, and

```
 1  some of them would be like writing an e-mail and sending

 2  it or writing a letter and saving it in the system or

 3  putting something in the calendar.

 4          The example shown here is address book card

 5  that has a name and an address for Steve Jobs in this

 6  case.  That would be an example of a data unit that was

 7  created in my computer system.

 8          And so this is -- this shows that Apple

 9  computers do generate data units and meet this claim

10  limitation.

11      Q   Dr. Levy, where did that example on the right

12  come from?

13      A   That example comes from an Apple document that

14  shows an address book example.

15      Q   Thank you.

16          Let's move on to the next limitation.

17          Can you explain your opinion that Apple's

18  products include this limitation?

19      A   Yes.  This one says:  Selecting a timestamp to

20  identify each data unit.

21          Now, the parties have defined a timestamp to

22  identify as a date and time value that uniquely

23  identifies each document.

24          Now, you're going to hear a lot more about

25  this one, because there's a lot of argument about
```

1   whether this exists in the computer system.

2   However, I want you to remember that the

3   timestamp to identify is referring to identifying where

4   in the time-ordered stream a document is going to be

5   placed. So that's the key thing about this.

6   So now, whenever a data unit is created by or

7   received by the computer system, it does select a

8   timestamp to identify the data unit within the stream.

9   What timestamp it chooses is a matter of

10   choice depending on what kind of data unit it is and

11   some decisions they made in the operating system about

12   what should be appropriate for a given document.

13   But it's important to remember that -- and

14   they may have multiple timestamps, like a creation date

15   and a modification date and other possible dates.

16   So this timestamp, as we've -- I've found it

17   in the system is comprised of date and time information,

18   such as one or more of those dates that I just

19   described.

20   Now, in addition, just in case two of those

21   data units have the same date and time information, then

22   there's an additional piece that's used as a tiebreaker;

23   that is, so that when we get the time sequence data

24   units, they always get sorted out in the same order.

25   So that tiebreaker is another little piece

1 that's used within the time-ordered stream to form a

 2 timestamp.

 3   Q   You mentioned this tiebreaker, Dr. Levy. What

 4 is the tiebreaker in the Apple operating systems?

 5   A   In the Apple operating system, there's an

 6 identifier known as the CFUUID, which is used as a

 7 tiebreaker when the other time and date information

 8 happen to be the same.

 9   Q   When -- when does this -- you referred to a

10 timestamp Dr. Levy. When does the Apple computer assign

11 a timestamp?

12   A   Well, it assigns a timestamp when the data

13 unit is either brought in or is created in the computer

14 system, and it may update the timestamp for things like

15 modification date as things happen to that data unit or

16 document.

17   Q   You were here in court today and yesterday,

18 correct?

19   A   Yes, I was.

20   Q   And did you hear Dr. Gelernter's testimony

21 regarding timestamp?

22   A   Yes, I did.

23   Q   And does his testimony relate to what you've

24 been talking about as timestamps?

25   A   Well, in some ways. I think he was asked

1 about how you might assign timestamps to things that

2 came in all nearly at the same time, and I believe he

3 answered that they might be slightly different times.

4   But even if they were the same time, we would

5 just -- the stream aspect would use a tiebreaker to

6 determine the order.

7   But I also heard Dr. Gelernter talk about a

8 whole bunch of photographs where you couldn't tell when

9 they were taken. But, in fact, these days, with digital

10 photographs, almost all of those photographs come in

11 with a timestamp already with them that tell you when

12 the photo was taken, as well as a lot of other

13 information about each photograph.

14   And so perhaps Dr. Gelernter wasn't thinking

15 about the modern cameras.

16   Q   And do you have an understanding as to whether

17 Dr. Gelernter was describing timestamps in the context

18 of what's described in the body of the Gelernter

19 patents, as opposed to the claims?

20   A   Yes, I think so. Dr. Gelernter was describing

21 the general idea of timestamps as described in the

22 patent specification.

23   Q   That whole discussion sounds a little

24 complicated. Can you give us an example of this type of

25 tiebreaker?

1   A   Yes.

 2   THE WITNESS: If you'll go to the next

 3 page, please.

 4   A   So here's the class list as it came back, and

 5 I don't know if you noticed this before, but right here

 6 we have two students with the same birthday.

 7   Well, now, I, as the teacher, don't really

 8 care which one comes first, but I do care that every

 9 time I see this time-ordered list, they come out in the

10 same order.

11   And so in this case, a tiebreaker may have

12 been used to make sure they always come out in the same

13 order. That could have been something like the student

14 ID number, if they had one, and that would be used only

15 when the tiebreaker was needed.

16   And that's very similar to what the Apple

17 systems do. They use a tiebreaker number only when they

18 need to differentiate two things that seem to have the

19 same time and date value.

20   Q   (By Mr. DiBernardo) That tiebreaker is not

21 shown on that class form, is it?

22   A   No, it's not.

23   Q   And why is that?

24   A   Well, because it's not really important to the

25 person looking at this how it determined which of those

1 two to put first. As long as they don't keep switching

2 around, that's fine.

3   Q   Where does that tiebreaker exist?

4   A   The tiebreaker exists down in the main office,

5 right? And so it gets applied when the office produces

6 this list so that it always comes out the same way.

7   So in that sense, it's applied when the

8 Spotlight search results are composed.

9   Q   Dr. Levy, is this tiebreaker important to this

10 case?

11   A   Yes. We'll find that there's a lot of

12 argument about whether there's really a timestamp in the

13 system; but this is how I show that the timestamp, as

14 we've identified it in the Apple system, actually meets

15 the claim limitations.

16   Q   Do you know if Dr. Feiner, Apple's expert,

17 agrees with you that timestamps can include these types

18 of tiebreakers?

19   A   Well, I don't know if he agrees with me on

20 many things, but in his deposition he did give examples

21 of using this kind of another number as a tiebreaker to

22 make a unique time identifier or timestamp.

23   Q   Are these types of tiebreakers well known in

24 the computer industry?

25   A   Yes, they are. They're common knowledge

```
 1  amongst those who know about timestamps and computer

 2  software.

 3     Q    Thank you, Dr. Levy.

 4          Let's move on to the next limitation.  Do you

 5  have a document for the limitation (f)?

 6     A    Yes.

 7               THE WITNESS:  The next page, please.

 8     A    Limitation (f) says:  Associating each data

 9  unit with at least one chronological indicator having a

10  respective timestamp.

11          Now, chronological indicator is a data

12  structure containing at least a timestamp.  So you can

13  just think of it as a container that holds that

14  timestamp in it.

15          Now, the Spotlight Store and the Metadata

16  Store has all of the metadata attributes about the

17  files, and so the Spotlight Store, because of that,

18  contains data structures with a timestamp that

19  identifies the data unit within the time-ordered stream.

20  And so, therefore, it meets this claim limitation.

21     Q    (By Mr. DiBernardo) The Court's definition of

22  chronological indicator, it says that it's a data

23  structure containing at least a timestamp.

24          Can you remind us what that data structure is?

25     A    Yes.  That data structure would be the
```

1 Metadata Store itself or perhaps the content index in

 2 the case of Leopard, which also contains the timestamp

 3 information, together with the information that tells me

 4 how to find the file that has that information in it.

 5 That would be something called a pointer.

 6   Q   A pointer. Can you describe for us what this

 7 pointer is?

 8   A   Yeah. A pointer is just a number or something

 9 that tells me how to go get the original document

10 itself.

11   Q   Do you have an example of a pointer like this?

12   A   Yes.

13   THE WITNESS: If you'll go -- show the

14 next slide.

15   A   Once more with the class list, after the

16 teacher gets the class list back, they might assign

17 seats to the students.

18   Now, this would probably not be on this form

19 but might be in the class book, but that would be a

20 pointer to where the student actually is. What you have

21 here is not the student, just this information about the

22 student.

23   Q   (By Mr. DiBernardo) Thank you, Dr. Levy.

24   Let's move on to limitation (g). Would you

25 please explain your opinion as to how the Apple products

```
 1  include limitation (g)?

 2     A    Yes.  This one reads:  Including each data

 3  unit according to the timestamp in the respective

 4  chronological indicator in at least the mainstream.

 5          Now, this is just saying that the -- every --

 6  each data unit is put into the mainstream according to

 7  its timestamp value.

 8          And so since the Spotlight Store has the

 9  time-related information associated with each document

10  in the Metadata and/or the Content Index Store, and

11  everything's there, the mainstream is in the Spotlight

12  Store, and it's included there, according to its

13  timestamp.

14          Now, you may wonder what that means.

15  According to the timestamp, I believe just means that

16  it's got the timestamp information in there, and

17  whenever you go to get anything out of there, it comes

18  out in time order.

19          And that is the case with the API, the

20  substreams that you pull out.  It's kind of like having

21  a box where you've got everything in there, and every

22  time you reach in to get anything, it comes out in time

23  order.  So that, to me, says it's there, and it's

24  time-ordered, because all that information is there.

25          But in addition, in the Leopard operating
```

1   system, that chronological indicator is also in the

    2   content index. And in the content index, it's actually

    3   laid out in time order. And so there is a literal data

    4   structure there, which is time-ordered for the

    5   mainstream.

    6   Q   Thank you, Dr. Levy.

    7   Let's move to limitation (h). Do you have a

    8   document explaining your opinion on that limitation?

    9   A   Yes. This one says: Maintaining at least the

   10   mainstream and the substreams as persistent streams.

   11   And here persistent streams means streams that

   12   are dynamically updated.

   13   So we've talked about what that means, that as

   14   new things come in, they are automatically updated. Not

   15   only the contents of the Spotlight Store, but the search

   16   results are dynamically updated.

   17   And so the system meets this claim limitation.

   18   Q   Thank you, Dr. Levy.

   19   And with that, the last limitation, is it your

   20   opinion that Apple's Tiger, Leopard, and Snow Leopard

   21   operating systems infringe Claim 13?

   22   A   Yes. Since we've completed each of the eight

   23   claim limitations and found the ways in which the Apple

   24   products infringe, that means they infringe Claim 13.

   25   Q   You mentioned we'd be using your poster board

1 to track our progress. Can we do that?

2   A   Yes, please. If you'll check off Claim 13 for

3 the Tiger and Leopard operating systems.

4   MR. DIBERNARDO: Your Honor, if I may?

5   THE COURT: Yes, you may.

6   Q   (By Mr. DiBernardo) Thank you, Dr. Levy.

7   The next claim on your chart is Claim 22 of

8 the '227. Do you have a document that demonstrates your

9 opinion that this claim is infringed?

10   A   Yes, I do.

11   THE WITNESS: Can you show the next page?

12   A   Claim 22 is what's called a dependent claim.

13 And I think you heard the Court describe to you what a

14 dependent claim is. It's a claim that refers to another

15 claim and then adds on something more.

16   So this Claim 22 has to have all of the eight

17 claim limitations of Claim 13, and in addition -- in

18 addition, it has archiving data units having timestamps

19 older than a specified time point.

20   And this is going to refer to Time Machine, as

21 you'll see in a moment.

22   THE WITNESS: Do we have another document

23 on this? Yes. Thank you.

24   Q   (By Mr. DiBernardo) Thank you.

25   A   So I described to you how Time Machine

1 archives data units by copying them to a separate

 2 storage unit. It does this every hour every day.

 3   Incremental backup, that just means another

 4 copy is made automatically.

 5   So this means that everything that's older

 6 than an hour will be backed up automatically, and,

 7 therefore, the system does archive data units having

 8 timestamps older than a specified time point, mainly an

 9 hour older than now.

10   Q   Thank you.

11   So is it your opinion that Apple --

12   A   With that creation, they do that, yes.

13   Q   Thank you.

14   So is it your opinion that Apple infringes

15 Claim 22?

16   A   Yes, it is.

17   Q   And what products infringe?

18   A   That would be the Leopard and Snow Leopard

19 operating systems and the computers that use them.

20   Q   Thank you.

21   A   That's because Time Machine was introduced

22 with the Leopard operating system.

23   Q   And may I reflect that infringement on the

24 board?

25   A   Please.

1   MR. DIBERNARDO: May I, Your Honor?

2   THE COURT: Yes, you may.

3   Q   (By Mr. DiBernardo) Dr. Levy, the next claim

4   on your board is Claim 1 of the '427 Gelernter patent.

5   Is it your opinion that Apple infringes Claim

6   1 of the '427 patent?

7   A   Yes, it is.

8   Q   Do you have a document that demonstrates your

9   opinion?

10   A   Yes.

11   THE WITNESS: If you'll show the next

12   page, please.

13   A   Now, this is Claim 1 of the '427 patent, and

14   this is, again, something with eight parts, and we're

15   going to go through these one by one.

16   And you'll see on the right that this will

17   involve not only the Mac operating system but Spotlight,

18   Time Machine, and Coverflow. So it's going to cover all

19   three features. It's going to be related to all three

20   features.

21   Q   (By Mr. DiBernardo) Let's turn to limitation

22   (a) then. Can you explain your opinion that the Apple

23   product includes limitation (a)?

24   A   Yes. Now, this one reads: A stream-based

25   operating system utilizing subsystems from another

1   system running a computer, and then it's going to go on.

           2   Now, first of all, a stream-based operating

           3   system is an operating system that is based on a

           4   time-ordered sequence of documents and so on. And

           5   that's describing the words that make up a stream

           6   definition.

           7   And so any operating system that has streams

           8   implemented in them is a stream-based operating system

           9   for the purpose of this claim language.

          10   So as we've seen, Spotlight implements a

          11   stream; therefore, we're talking about a stream-based

          12   operating system.

          13   And in addition, this talks about utilizing

          14   subsystems from another operating system.

          15   Now, here, we have a chart from one of Apple's

          16   manuals describing the Mac OS 10 -- I'm sorry; this is

          17   the way they pronounce it -- OS 10 operating system, and

          18   it says it can be viewed as a set of layers. And it

          19   says, also: At the lower layers are the fundamental

          20   services.

          21   Now, the bottom layer is a kernel. That's the

          22   name they use for this bottom layer in general, and it's

          23   called Darwin. It's the main portion of this operating

          24   system, and it comes from another operating system.

          25   Darwin was originally part of the UNIX

1 operating system, as it says here, and it is the lowest

 2 layer within the OS 10 operating system.

 3   And, therefore, this meets this limitation,

 4 because this stream-based operating system, the whole

 5 thing utilizes subsystems from this other operating

 6 system.

 7   Q   Thank you for that explanation.

 8   Let's move on to the next limitation,

 9 Dr. Levy. Can you explain your opinion that limitation

10 (b) is included in the Apple products?

11   A   Yes. Now, this one reads: A

12 document-organizing facility receiving documents created

13 by diverse applications and diverse formats specific to

14 the respective applications.

15   Now, we've already talked about this. The

16 applications are these application programs, and the

17 diverse formats just refers to the fact that a letter

18 and an e-mail are in different formats. They don't look

19 the same. They're not composed the same.

20   And the Spotlight Store is this

21 document-organizing facility. And, therefore, as we see

22 here, here's some examples of the diverse formats of

23 documents that are received by and organized by the

24 Spotlight Store, and therefore, it meets this claim

25 limitation.

```
 1    Q    Thank you, Dr. Levy.

 2         Let's turn to the next limitation of Claim 1,

 3    limitation (c).  Do you have a document that explains

 4    your opinion that Apple's Leopard and Snow Leopard

 5    operating systems include this limitation?

 6    A    Yes.  The next page, it says:  The

 7    document-organizing facility automatically associates

 8    respective selected indicators with the received

 9    documents.

10         Now, selected indicators is defined as data

11    structures that contain information relating to those

12    respective documents.  And so as we've already seen, the

13    metadata is a kind of indicator that has information

14    relating to the document.

15         And so this is referring to metadata, and the

16    Spotlight Store holds all the metadata attributes, and

17    some of those examples are -- that are time related are

18    the creation date, modification date, due date, that

19    I've shown the actual internal names for those metadata

20    items here taken from one of Apple's manuals.

21         And so these are associated with the documents

22    that are received by that way I told you where it has

23    pointers.  It says, if you're looking for this metadata,

24    there's where the document is.

25         And so that meets this claim limitation (c).
```

1   Q   Let's move on to limitation (d) then. Can you

2 explain how Apple's products include this limitation?

3   A   Yes. Automatically archiving the documents

4 and indicators in consistent format for selective

5 retrieval. Well, that's a fancy way of saying, once you

6 store the things away, they're archived with some of the

7 metadata so that you can get things back by looking at

8 the metadata.

9   Now, remember, their archiving is copying or

10 moving documents to a secondary storage medium. We've

11 described how Time Machine does that.

12   And in addition, not only does it store a copy

13 of everything, as it says here, but it also allows you

14 to do a Spotlight search. And therefore, we know that

15 the metadata and the content index are created on the

16 Spotlight's Time Machine volume -- backup volume, and

17 you can do a Spotlight search on it.

18   And, therefore, it has archived the documents

19 and the indicators and, therefore, meets this claim

20 limitation.

21   Q   Thank you.

22   Moving to limitation (e), can you explain how

23 the Leopard Tiger and Snow Leopard meet this limitation?

24   A   Yes. This limitation says: Creating --

25 automatically creating information specifying respective

1 glance views and said respective document

 2 representations of said documents.

 3   Now, remember, that the definition of a glance

 4 view is an abbreviated presentation of a document. It's

 5 not the whole thing that you get when you retrieve the

 6 document.

 7   And a document representation is a graphical

 8 depiction of a document or data unit.

 9   And so here, we now come for the first time to

10 Coverflow, which provides this kind of glance view and

11 document representations as we've already talked about.

12   And so glance -- Coverflow meets this claim

13 limitation by providing glance views and document

14 representations.

15   Q   Thank you, Dr. Levy.

16   Moving on to limitation (f), could you explain

17 your opinion with regard to this limitation?

18   A   Yes. And you're going to hear a lot about

19 this one, because we argued a lot about it. What is a

20 receding foreshortened stack?

21   So this says: A display facility displaying

22 at least selected document representations -- that means

23 some of the images -- as a receding foreshortened stack

24 of partly overlapping document representations, such

25 as -- such that only part of each displayed document,

1 after the first -- document representation, after the

 2 first in the stack, is visible to the user.

 3   And so as we've seen here in the Coverflow

 4 display, we have a receding foreshortened stack that the

 5 first document in the stack is the only one that's

 6 entirely visible to the user, or in some cases, even

 7 that one is not.

 8   And as Apple's Mr. Goossens described, the

 9 impression to the viewer is that the stack is receding

10 away from the viewer to the left and the right with

11 perspective effects, which are provided by shading,

12 shadowing, and angling of the top edges of the document

13 representations.

14   And so Coverflow display meets this claim

15 limitation.

16   Q   Dr. Levy, is this the only image from

17 Coverflow that satisfies this limitation (f)?

18   A   No. I'd like to show another one, please.

19   Now, here's an example of photographs that are

20 being shown in Coverflow. And you'll see as the image

21 here moves off to the side, that the perspective effects

22 on it actually cause the top level -- top edge to change

23 its angle and to get longer.

24   So that's another example of how Coverflow

25 provides perspective effects and moves the documents

1 through.

 2   Q   That went by kind of quickly. Would you like

 3 to explain that again for us?

 4   A   Sure. Would you like to run it once more?

 5   So here we're showing how, as the image moves

 6 out to the side, it's actually changing its apparent

 7 image to the way -- to the viewer of this scene, and the

 8 top edge is getting longer, and therefore, the angle is

 9 getting shallower.

10   And that's a perspective effect that gives the

11 impression of the thing rotating away from you, which,

12 along with the shading and -- of this and a few other

13 effects, makes it look like it's receding.

14   Q   Is this change in length important to your

15 opinion?

16   A   Yes. This is a demonstration of the effects

17 of perspective being applied to the document

18 representation. And that, of course, is happening even

19 in the static image here where the top edge is angled

20 down and the bottom edge is angled up.

21   That's perspective, but in addition, that

22 perspective is changing as it moves out to the side.

23   Q   Does Apple's expert, Dr. Feiner, agree with

24 you, that Coverflow shows a receding foreshortened

25 stack?

```
 1      A     No.  I think he's quite opposed to that idea.

 2      Q     And do you disagree with Apple's expert?

 3      A     I do.

 4      Q     Can you summarize why you disagree?

 5      A     Well, I think Dr. Feiner, as I recall, refers

 6  to the height of the document, and some of the other

 7  things that are cited in his reasons why it's not

 8  changing or receding has to do with the apparent

 9  closeness of the image to the viewer.

10            But, in fact, I've reviewed the testimony

11  of -- I think it's Mr. Goossens, where he says that it

12  passes the descriptions off to a rendering thing called

13  OpenGL, which actually takes into account the fact that

14  it's moving away from the viewer to the side and,

15  therefore, getting farther away and presents it,

16  therefore, in a different angle as it goes.

17      Q     Thank you, Dr. Levy.

18            Let's move on to the next limitation,

19  limitation (g).  Can you first explain what this

20  limitation covers?

21      A     Yes.  Now, this one covers the popping out of

22  the glance view as you the pass the cursor over the

23  stack.

24            So this one reads:  Said display facility

25  further displaying a cursor or pointer and responding to
```

1 user-controlled sliding without clicking of the cursor

 2 over the said displayed stack to display a glance view

 3 of a document whose document representation is currently

 4 touched by the cursor or pointer.

 5   So this one is referring to the fact that when

 6 you slide the pointer over the stack, your -- the glance

 7 view pops out.

 8   Q   Dr. Levy, do you have an understanding of what

 9 infringement under the Doctrine of Equivalents is?

10   A   Yes.

11   Q   Can you --

12   A   Yes. Doctrine of Equivalents is a part of the

13 patent law, as I understand it, which says that if an

14 accused product has an equivalent that the difference is

15 only insubstantially from the claimed invention, then

16 it's also covered by that invention under the Doctrine

17 of Equivalents.

18   Q   Do you have an understanding of the purpose of

19 this Doctrine of Equivalents?

20   A   Yes. This prevents someone who -- from taking

21 someone's invention by making some very minor change to

22 it that's not really substantial.

23   THE COURT: Counsel, how long do you

24 anticipate you have to continue on your direct

25 examination?

1   MR. DIBERNARDO: Certainly, till about --

2   till about 5:00. We'll try and pick it up at least,

3   but --

4   THE COURT: All right. How's the jury

5   doing? Would you like to take a 10-minute recess to

6   stretch your legs?

7   JUROR: Yeah.

8   THE COURT: Okay. We'll take a 10-minute

9   recess until 4:35.

10   COURT SECURITY OFFICER: All rise.

11   (Jury out.)

12   (Recess.)

13   (Jury out.)

14   THE COURT: Bring the jury in, please.

15   Did y'all get your times worked out yet?

16   MR. CARROLL: We did, Your Honor. We're

17   waiting for Apple to bless them.

18   MR. RANDALL: I didn't hear.

19   MR. CARROLL: We gave those to your folks

20   back there about an hour ago.

21   MR. RANDALL: In the middle of

22   examination.

23   MR. DIAMANTE: We'll do it very quick.

24   COURT SECURITY OFFICER: All rise for the

25   jury.

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 1                    (Jury in.)

 2                    THE COURT:  All right.  Please be seated.

 3                    All right.  Counsel, you may proceed.

 4                    MR. DIBERNARDO:  Thank you.

 5          Q    (By Mr. DiBernardo) Dr. Levy, before the

 6  break, you were talking about the Doctrine of

 7  Equivalents.

 8               Is it your opinion that Coverflow meets this

 9  limitation?

10          A    Yes, it is.

11          Q    Is it your opinion that Coverflow meets this

12  limitation under the Doctrine of Equivalents?

13          A    Yes, it is.

14          Q    Can you explain for us generally what's shown

15  on the right of your slide?

16          A    Yeah, on the right, I'm showing the schematic,

17  a part of that Figure 1 for the Gelernter patents, which

18  shows the sliding pointer, and the glance view popping

19  out with the stationary stack.

20               And in the bottom, I'm showing Apple's

21  Coverflow view, which essentially has a sliding stack,

22  and it's a glance view that pops out in the center.

23          Q    And what is it in the Coverflow view that you

24  consider to be the equivalent?

25          A    In the Coverflow view, instead of having a
```

```
 1  moving pointer and a stationary stack, we have a moving

 2  stack and essentially a stationary pointer, because the

 3  user knows that he's looking always at the center here.

 4      Q    Do you have something to show us that

 5  demonstrates why you consider these to be equivalents?

 6      A    Yes.  I'd like to show an animation of these

 7  two operating together.

 8           Here's the Gelernter stack at the top, and the

 9  Coverflow view flowing by, popping by, at the bottom.

10  And I believe that these are equivalent.

11      Q    Dr. Levy, does the Coverflow display --

12  display a pointer?

13      A    It does not display a literal pointer, but I

14  believe it has the equivalent, because the user always

15  is looking at the center where the glance view is going

16  to pop up, and that is where the cursor or pointer is by

17  default.

18      Q    Does Apple agree with you?

19      A    No.  I think they're quite -- disagree with

20  that idea.

21      Q    Can you give us an example, Dr. Levy, to

22  further explain your opinion that these are equivalents?

23      A    Yes.  Well, here, we have the sliding cursor,

24  the stationary stack.  And then in Coverflow, we have

25  the stationary pointer with the moving stack.
```

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 1              And an example of how that might be is shown
 2    in the next slide.
 3       Q    Before we move on --
 4       A    Before we do that --
 5       Q    -- I wanted to ask you one other question.
 6       A    Yes.
 7       Q    The claim limitation refers to sliding without
 8    clicking.
 9              Can you explain how that's met by the
10    Coverflow?
11       A    Yes.  So in the Gelernter patents, one moves
12    the cursor without clicking on each document.  Now
13    clicking means, as I under it, with a mouse would be
14    pressing the button down and letting go.  A click is a
15    down-and-up action.
16              And so you don't have to do that with this
17    cursor on the stationary stack.
18              Likewise, with the Coverflow, you don't have
19    to click on each document in order to get it to move --
20    or pop up to the center.  You can achieve that by moving
21    this scroll bar thumb, by dragging it, or you can use a
22    gesture of two fingers across or down a touch pad, which
23    will cause the stack to move.
24       Q    Can you briefly describe for us what a touch
25    pad is?
```

1   A   Yes. A touch pad is a little square area on a

         2   laptop computer that serves the functions of -- several

         3   functions, but one of them is allowing that gesture

         4   which causes the sliding without clicking of this stack.

         5   Q   That gesture is just the user touching that

         6   pad?

         7   A   It's touching it with two fingers, that's

         8   right, and moving the fingers along.

         9   Q   Dr. Levy, can you give us another example to

        10   further explain why you consider these to be

        11   equivalents?

        12   A   Yes. I'd like to show an example of why I

        13   think the moving stack and the stationary stack are

        14   equivalent by showing another example that's quite

        15   common that we know about, which would be the next

        16   slide.

        17   Now, here we have a bathroom scales where the

        18   pointer moves and the dial stays stationary. In the

        19   other one, the dial moves and the pointer stays

        20   stationary.

        21   And in my opinion, these are equivalent in the

        22   same way that the Coverflow and the Gelernter stack are

        23   equivalent. It really doesn't matter to the person

        24   looking at this which one moves. They really still see

        25   the same result, getting the same function with the same

1 result here.
 2   Q   Thank you, Dr. Levy.
 3   Let's move on to the next limitation,
 4 limitation (h).
 5   Can you explain your opinion with regard to
 6 this limitation?
 7   A   Yes. Now, this one is about the stream-based
 8 operating system, which we've already described,
 9 utilizing subsystems from this -- another operating
10 system, which I've already described as this lower
11 layer.
12   And it says in particular, there are
13 operations, including writing documents to storage
14 media, interrupt handling, and input/output. And these
15 are some of the functions that are done in this
16 kernel -- or handled by this kernel, Darwin, at the
17 bottom layer of the Apple operating systems. And,
18 therefore, it meets this claim limitation.
19   Q   Thank you, Dr. Levy.
20   Having gone through the last limitation,
21 limitation (h), is it your opinion that Apple's Leopard
22 and Snow Leopard operating systems and the computers
23 using them infringe?
24   A   Yes, it is.
25   Q   Can I reflect that opinion on infringement on

1 the board?

 2   A   Yes, please do.

 3   MR. DIBERNARDO: Your Honor, may I put

 4 that on the board?

 5   THE COURT: Yes, you may.

 6   Q   (By Mr. DiBernardo) Dr. Levy, the next claim

 7 on your board is Claim 8 of the '427.

 8   Do you have a document that summarizes your

 9 opinion on Claim 8?

10   A   Yes, I do.

11   THE WITNESS: The next page, please.

12   A   Now, this Claim 8, again, has eight

13 limitations, but now, since we've already seen a lot of

14 this material and the information included in them, what

15 I'm going to do is compare them to Claim 1 of the '427

16 that we've already been through in detail.

17   THE WITNESS: I don't know if you want

18 James to expand maybe the --

19   A   Well, first of all, let me summarize.

20   So I'm going to show how claim limitation (a)

21 and (h) have a difference from Claim 1 and then claim

22 (f) has a difference from Claim 1.

23   THE WITNESS: So if you could maybe

24 expand --

25   MR. DIBERNARDO: James, can you please

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 1  expand the top half of that line?  Should make things

 2  easier.

 3      A    So what's different in claim (a) and in claim

 4  (h) -- I mean, limitation (a) and limitation (h) is

 5  instead of saying a stream-based operating system, it

 6  says a controlling operating system.

 7          And we understand a controlling operation --

 8  operating system to mean an operating system that

 9  utilizes subsystems from another operating system.  And

10  so that's really just another way of saying like the

11  rest of claim limitation (a) says.

12          The fact that it doesn't say stream-based

13  means that at least at this point it doesn't require

14  that it has streams.

15              THE WITNESS:  Okay.  And then if we can

16  expand claim limitation (f).

17      A    In any case, what this says -- it says display

18  facility displaying at least selected runs of

19  subdocument representations, but it doesn't mention the

20  receding foreshortened stack.

21          And so this claim limitation is broader,

22  allows more things to infringe than the one that

23  requires a receding foreshortened stack.

24          Okay.  And so since we've already shown for

25  the -- the Claim 1 all the rest of these, for those
```

1 reasons, the Apple products infringe this Claim 8 as

2 well.

3   Q   (By Mr. DiBernardo) Dr. Levy, let me make sure

4 I understand your description of limitation (f).

5 Limitation (f) of this claim does not include a receding

6 foreshortened stack, correct?

7   A   That's right.

8   Q   And so in that regard, is this claim broader?

9   A   Yes, it's broader. So even if the jury

10 decides that Apple's products, like Coverflow, do not

11 have a receding foreshortened stack, which I believe

12 they do, then it would still meet this claim limitation

13 that doesn't require a receding foreshortened stack.

14   Q   Thank you, Dr. Levy.

15   So is it your opinion, then, that the Apple

16 Leopard and Snow Leopard operating systems and the

17 computers using them infringe this claim?

18   A   Yes, it is.

19   Q   May I reflect that opinion on your poster

20 board?

21   A   Yes, please.

22   Q   Let's turn to next claim, Dr. Levy, Claim 16

23 of the same patent, '427 patent.

24   Do you have document that explains your

25 opinion?

1   A   Yes.

     2   THE WITNESS: The next slide, please.

     3   Q   (By Mr. DiBernardo) Can you explain what this

     4 claim covers?

     5   A   Yes. Generally, this claim covers the

     6 document organizing facility and the display, which

     7 we'll go over here now in more detail.

     8   And, again, because this is similar to and

     9 related to Claim 1 of the '427 patent, I've just shown

    10 the differences schematically here by crossing out the

    11 parts that don't show up in this claim or how they're

    12 changed.

    13   So, first of all, for claim limitation (a) and

    14 claim limitation (f), for change of languages, not

    15 stream-based but controlling, that's the same as we just

    16 saw for claim limitation 8 (sic), and so we don't really

    17 need to describe those further.

    18   This also in -- claim limitation (b) covers a

    19 document organizing facility associating the indicators

    20 with received or created documents. We've already

    21 talked about those, but this one leaves out the diverse

    22 formats.

    23   And so in that sense, it's a broader claim and

    24 covers a little bit more.

    25   Also, I show in this blank line in the middle

```
 1  that the archiving is not included in this compared to

 2  Claim 1.  And so this claim does not require archiving.

 3  And then again in claim limitation (d), we have the fact

 4  that receding foreshortened stack does not occur, only

 5  the selected document representations.

 6           And so this, likewise, is a broader claim than

 7  Claim 1.  And for the reasons I've already given for the

 8  rest of these, this claim limitation is met by the Apple

 9  operating system Spotlight and Coverflow.

10      Q    And by that, you're referring to the

11  right-hand column of your slide?

12      A    Yes, I am, just to show that summary.

13      Q    Thank you.

14           Can I reflect this opinion in your poster

15  board?

16      A    Yes, please.  This is Claim 16.

17      Q    Let's turn to the next claim, Dr. Levy, Claim

18  18 of the same '427 Gelernter patent.

19           Is it your opinion that this claim is also

20  infringed by Leopard and Snow Leopard?

21      A    Yes, it is.

22      Q    Can you explain your opinion?

23      A    Yes.  Now, this Claim 18 is a dependent claim.

24  That means it says the same as Claim 16, except one more

25  limitation.  And this new limitation is limitation (g).
```

1   Now, we put the receding foreshortened stack

           2   back in, and so compared to Claim 16, this one adds on a

           3   receding foreshortened stack. And that is, as I've

           4   explained before, covered -- infringed by Coverflow and,

           5   therefore, the system infringes this claim as well.

           6   Q   Thank you, Dr. Levy.

           7   Can I reflect this opinion of infringement on

           8   your chart?

           9   A   Yes, please. Claim 18.

          10   Q   Let's turn to Claim 18 of the '427 patent, the

          11   last claim in the '427.

          12   So is it your opinion that this claim is also

          13   infringed by Leopard and Snow Leopard operating systems?

          14   A   Yes, it is.

          15   Q   Can you please explain your opinion?

          16   A   Yes, I will.

          17   Now, in this claim, I'm comparing Claim 25 to

          18   Claim 1 again, just to show you the differences and so

          19   we can understand them relative to Claim 1, which I've

          20   already explained.

          21   We have the document stream operating system.

          22   We have the document organizing facility. In here, the

          23   word selective is not used, but chronological indicators

          24   with documents received from diverse applications and

          25   diverse formats.

1   And so here we know that some of those

         2   indicators are the metadata, and some of those metadata

         3   is time-based, and, therefore, there are chronological

         4   indicators, the data structures that contain timestamps

         5   in Spotlight, and, therefore, that claim limitation is

         6   met.

         7   In addition, the archive part is omitted

         8   compared to Claim 1, and so we don't require the Time

         9   Machine part to infringe here.

        10   And then in the next claim limitation, (c), we

        11   have creating information specifying glance views and

        12   specifying document representations. And so in

        13   Coverflow, we know that these glance views and document

        14   representations are shown.

        15   So, of course, there must be information

        16   specifying them in the system, and, therefore, this

        17   claim limitation is met.

        18   So the rest of these claim limitations are the

        19   same as Claim 1 and, therefore, they are all met by the

        20   Apple systems.

        21   Q   Can I reflect your opinion on your poster

        22   board, Dr. Levy?

        23   A   Yes, please.

        24   Q   Let's turn to the next claim, Claim 1 of the

        25   '313 patent.

```
 1      A    Now, this claim -- I'm sorry.  Claim 1 of the

 2   '313 patent.

 3           Now, this one is going to involve Spotlight,

 4   Time Machine, and Coverflow, and so this one we're

 5   actually going to go through each one, because it's a

 6   new claim, and we really need to review each one.

 7           But in general, this is about streams

 8   receiving the documents in diverse formats, associating,

 9   archiving, creating glance views, and so on.  So we've

10   seen these terms, and so we'll review them one by one.

11      Q    Dr. Levy, let's start then with (a) on this

12   page.  Can you explain how limitation (a) is met by the

13   Leopard and Snow Leopard operating systems?

14      A    Yes.  So here -- I don't know if you want to

15   expand it or not, but this is a method now, and so we're

16   talking about a process that uses this facility that we

17   see described in the other claim.

18           And so it's utilizing a document stream

19   operating system, and so we've already talked about how

20   that's met by the operating system that has Spotlight in

21   it and that it utilizes subsystems from at least one

22   other operating system.

23           And we've already talked about how OS 10 uses

24   subsystems from another operating system.  And so that

25   claim limitation is met.
```

1   Q   Claim limitation (b), Dr. Levy.

 2   A   Yes. Claim limitation (b): Receiving

 3 documents from diverse applications and formats that are

 4 specific to the respective applications and differ

 5 between some of the applications.

 6   Well, we've already seen how we get different

 7 kinds of documents that are in different formats.

 8 They're all put into the Spotlight Store, and so

 9 Spotlight, in that operating system, receives documents

10 from diverse places.

11   Claim limitation (c): Associating time-based

12 indicators automatically with those documents. And that

13 we've seen. Spotlight does associate time-based

14 indicators, timestamps, with each document.

15   And so that's met.

16   Claim Limitation (d) is the automatically

17 archiving the documents. That's met by Time Machine, as

18 we talked about.

19   Automatically creating glance views that are

20 abbreviated versions of the respective ones of said

21 documents. We've seen how Coverflow creates glance

22 views.

23   Claim limitation (f): Displaying at least

24 some of these documents as a receding foreshortened

25 stack and so on. And Coverflow meets this limitation,

1   as we've described.

        2   Further including displaying, sliding, and so

        3   on, we've shown how Coverflow meets this claim

        4   limitation under the Doctrine of Equivalents.

        5   And then utilizing subsystems, we've explained

        6   how this happens with the operating system, and

        7   therefore, that claim limitation is met.

        8   Q   Thank you, Dr. Levy.

        9   And can I reflect this opinion on your poster

        10   board?

        11   A   Please. Claim 1 of the '313 of the operating

        12   systems.

        13   Q   Dr. Levy, the next claim is Claim 2 of the

        14   '313. Is it your opinion that this claim is infringed?

        15   A   Yes, it is.

        16   Q   Can you explain that opinion, please?

        17   A   Yes. Claim 2 is a dependent claim, and so it

        18   has all of the requirements of the method shown in Claim

        19   1 that we just went over.

        20   And in addition, claim limitation (i) which is

        21   storing the documents -- said documents as a mainstream

        22   that's time-based and selectively generating a substream

        23   that are a subset of the documents in the mainstream

        24   matching selected criteria.

        25   Now, that's a pretty good description of the

1 Spotlight search capability. And the mainstream, as

 2 we've shown, generates -- I'm sorry. Mainstream is

 3 generated by a -- the Spotlight Store and that it's

 4 time-based.

 5   And so this claim limitation is met by the

 6 Spotlight, and therefore, this claim is infringed.

 7   Q   Thank you.

 8   I see that you have the terms generating a

 9 substream highlighted. Can you explain how that's met

10 by the Apple operating systems?

11   A   Yes. The Spotlight search facility, as I

12 explained, when you get a search request, the search

13 results are returned in a time-ordered data structure,

14 and that is the substream, and therefore, this is met.

15   Q   Thank you.

16   And can I reflect this opinion on your poster

17 board, Dr. Levy?

18   A   Yes, please do.

19   Q   Let's turn then to the next claim of the '313

20 Gelernter patent. Can you describe for us your opinion

21 with regards to this claim?

22   A   Yes. I believe this is infringed. This is

23 Claim 3 of the '313 patent, and now we're dependent

24 claim -- it's dependent on Claim 2, which is in turn

25 dependent on Claim 1; and so all of the limitations of

1 Claims 1 and 2 have to be met, which we've already
2 talked about.
3   And then in addition, this one says: Said
4 generating a substream -- remember, that was like the
5 Spotlight search results -- comprises generating a
6 substream that persists unless selectively destroyed by
7 a user.
8   So we're talking about a procedure here now.
9 And when the Spotlight search results are returned to an
10 application and displayed, then when something new comes
11 in, the Spotlight search results are updated
12 automatically, as I've talked about, and therefore, the
13 substream, that is, that search results, is updated, and
14 it persists; in other words, it's updated automatically.
15   And then unless selectively destroyed by a
16 user, what that means, if you stop looking at the thing
17 that you asked for, close the window and so on, then the
18 search results go away, because you don't need them
19 anymore.
20   And I put in here an extract -- a description
21 of how that works from one of the Apple employees who
22 said that when you close the live query window, it
23 disposes of the query.
24   That just means that you don't need to search
25 anymore, and so it's selectively destroyed by the user

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 1  in that way.

 2      Q     Thank you.

 3      A     So that meets claim limitation (j).

 4      Q     Thank you, Dr. Levy.

 5            And should we update your poster board?

 6      A     Yes, please.

 7      Q     Let's turn then to Claim 9 of the '313 patent.

 8            Is it your opinion that Apple's operating

 9  systems infringe Claim 9?

10      A     Yes, it is.  Claim 9, again, is a method, and

11  so it talks about the steps of -- that are -- that occur

12  in the system, (a) through (f).  So I'll talk about each

13  of these in turn.

14            The first one is a method of automatically

15  archiving documents received in different formats -- and

16  if I can read -- such that those archived documents can

17  be searched.

18            And so we've seen how that Time Machine not

19  only archives the documents but also the metadata and

20  content information so that you can do a Spotlight

21  search in the archive.

22            And so Time Machine meets this limitation of

23  Claim 9.

24            And then in (b), it's receiving documents in

25  diverse formats.  And as we've seen, Spotlight does
```

1 that, the different formats of documents.

 2   Claim limitation (c): Automatically

 3 associating time-based indicators with the documents

 4 received. And we also have seen how that happens with

 5 the time-based metadata in Spotlight.

 6   Then automatically archiving the received

 7 documents, together with said time-based indicators.

 8 This just means that the documents get put into the

 9 archive, along with the time-based metadata, so you can

10 find them again.

11   That's met by Time Machine.

12   Then the receding foreshortened stack

13 limitation that Coverflow meets by the Doctrine of

14 Equivalents, and -- I'm sorry. Coverflow meets by its

15 receding foreshortened stack.

16   And then responding to the sliding, and we've

17 described how Coverflow meets that by Doctrine of

18 Equivalents.

19   And so these claim limitations are met by the

20 system, and therefore, that infringes Claim 9.

21   Q   Shall we update your poster board?

22   A   Please.

23   Q   Okay. Dr. Levy, the last claim with regard to

24 the operating systems. Let's turn to Claim 11 of the

25 '313 patent.

1   A   So Claim 11 is shown here. It's a method, as

        2 in Claim 9, so this is a dependent claim. It has two

        3 additional limitations, which I label here (g) and (h).

        4   And so on top of Claim 9, (a) through (f), we

        5 have selectively searching said archived documents for

        6 documents meeting selected criteria.

        7   Well, this is the operation of using Spotlight

        8 to search in the archive. And so Time Machine, using

        9 Spotlight, meets this claim limitation.

       10   And then generating and displaying a substream

       11 comprising documents identified in that search -- in

       12 said searching, that substream being in time order and

       13 comprising documents in different formats matching

       14 respective different applications from which the

       15 documents originated.

       16   Well, as we've seen, we have documents in

       17 different formats. The Spotlight search in the Time

       18 Machine gives search results back that are time-ordered

       19 and in a substream and then can be displayed, so you can

       20 find what you want.

       21   And so Time Machine, using Spotlight for the

       22 search results, meets this claim limitation, and

       23 therefore, this claim is infringed.

       24   Q   Dr. Levy, this limitation is a little

       25 different than the ones we've seen. Do you have any

1 documents that demonstrate the basis for your opinion

         2 that this is met?

         3   A   Yes. I'd like to show at least one picture of

         4 Time Machine search results being shown here, and this

         5 is a picture of -- taking a real system that shows Time

         6 Machine using Spotlight to find search results. I guess

         7 I can point at it.

         8   There's -- there's that -- I put the word

         9 agile in the Spotlight search here. We're in Time

        10 Machine looking at one of the backup copies. It found

        11 all the documents that have the word agile in them or

        12 related to that, and that shows how this operates with

        13 Spotlight in Time Machine.

        14   Q   Thank you, Dr. Levy.

        15   Can we update your poster board?

        16   A   Yes, please.

        17   Q   Dr. Levy, the next Apple products referenced

        18 on your poster board are the iPhone, iPod Touch, and

        19 iPad. Is your opinion that these products also infringe

        20 the Gelernter patents?

        21   A   Yes, a couple of them.

        22   Q   Which claims of which patent?

        23   A   Let's see now. It's the -- I'm sorry.

        24   Q   It's a little difficult to read.

        25   A   It's up there, but -- it's the '427 patent,

1   which is Coverflow, and Claims -- let's see, 16 and 18.

2   Q   16 and 18.

3   A   That's right.

4   Q   And we'll address each of those?

5   A   We will. Bear with us just a few more

6   minutes.

7   Q   Okay. Well, first, since these are new

8   products, do you have a document that demonstrates what

9   these products are, the iPhone, iPod Touch, and iPad?

10   A   Yes. I thought you might like to see a photo

11 of each of those products. Here's some taken from

12 Apple's website or documents. In the upper left is

13 Apple's iPhone. In the lower left is an example of

14 Apple's iPod Touch. And on the right is Apple's iPad, I

15 believe their latest.

16   Those two on the left do fit in a pocket. The

17 one on the right doesn't. And these are three -- are

18 the three types of products we're talking about now.

19   Q   Is there a reason why you considered these

20 products together?

21   A   Yes, there is. It's because the operating

22 system used in these are all from the iPhone operating

23 system, also known as iOS in the Apple documents.

24   Q   Thank you, Dr. Levy.

25   Let's turn now then to Claim 16. Can you

1 explain your opinion of how these products meet Claim

 2 16?

 3   A   Yes. Now, Claim 16 is, again, talking about a

 4 controlling and operating system utilizing subsystems.

 5   And in the iPhone iOS, there is a subsystem --

 6 let me see, we need to go through these on separate

 7 slides, right -- from another operating system, and I'll

 8 point that out in the layers in a moment.

 9   Anyway, Claims (a) through (f), which we've

 10 been through, and we'll show how these apply to each of

 11 the iPhone, iPod Touch, and iPad.

 12   Q   Thank you for that overview.

 13   Let's turn to limitation (a) then.

 14   A   Well, here's claim limitation (a):

 15 Controlling operating system utilizing subsystems from

 16 another operating system.

 17   And the iOS operating system also uses

 18 something called core OS, and this core OS is also

 19 derived from another operating system, just as the

 20 Darwin kernel was.

 21   That is documented in Apple's own manuals,

 22 and, therefore, it is using subsystems from another

 23 operating system.

 24   Q   Thank you, Dr. Levy.

 25   Shall we turn to the next limitation?

1   A   Yes. Claim limitation (b) is a

      2 document-organizing facility associating selected

      3 indicators with received or created documents.

      4   Now, remember, Witz is a software that

      5 organizes documents. The selected indicators are data

      6 structures that contain information that's like metadata

      7 and that a document is a data unit.

      8   In the -- now, we know that in the iPhone,

      9 iPod and -- I'm sorry -- iPod Touch, and iPad, among the

     10 many functions that are there is the ability to act as a

     11 music library.

     12   And at least for that, the iOS provides the

     13 iPod library with access to songs, and information about

     14 the song can be displayed, like title and artist. Those

     15 are some metadata associated with those documents, which

     16 are music tracks.

     17   And we know that the information associated

     18 with each song is stored as a data structure, which is

     19 why the selected indicators, and therefore, these

     20 systems meet this claim limitation.

     21   Q   Thank you, Dr. Levy.

     22   Let's go on to the next one then.

     23   A   This one is creating information specifying

     24 glance views and document representations.

     25   And as you can see in this example of the

1 Coverflow view of -- of the music tracks being shown,

2 this has a glance view in the center and the document

3 representations to each side, as we've seen before.

4   And, therefore, we know, since you display

5 them, of course, the information about them is in there,

6 and therefore, this is -- this claim limitation is met.

7   Q   Thank you, Dr. Levy.

8   One more question on this slide. Is that

9 center item just a glance view, or is it also a document

10 representation?

11   A   Well, in this case, it's overlapping both the

12 stack on the left and the stack on the right, and so

13 it's actually part of each stack because of that

14 overlap. So it's also a document representation.

15   Q   Thank you.

16   Moving on to limitation (d), can you explain

17 your opinion here?

18   A   Yes. Here we have the display facility

19 displaying at least selected runs of said document

20 representations.

21   We have multiple document representations

22 being shown here, and therefore, this limitation is met.

23   Q   And how about this limitation?

24   A   Claim limitation (e) is: Displaying a cursor

25 or pointer responding to the user's sliding without

1 clicking.

2   Now, we've seen this one before, and I've

3 described before how and why the Coverflow stacked

4 movement is equivalent to the sliding without clicking

5 over the stack in the Gelernter patents, and therefore,

6 under the Doctrine of Equivalents, Coverflow meets this

7 claim limitation.

8   Q   Was this your bathroom scale of earlier?

9   A   Yes. This is when I showed you the bathroom

10 scales. That's the kind of equivalence we're talking

11 about.

12   Q   Let's move on then to the next limitation,

13 limitation (f).

14   A   So here controlling operating system using

15 subsystems from another operating system, and it

16 mentions three functions here. The Core OS is the

17 bottom layer. It comes from another operating system,

18 and it contains these functions. So this claim

19 limitation is met.

20   Q   Thank you.

21   Dr. Levy, can we reflect this infringement on

22 your poster board?

23   A   Yes, please. This will be Claim 16 for the

24 iPhone, et cetera.

25   Only three to go.

1   Q   Dr. Levy, let's take a minute and back up to
    2 one limitation.
    3   Looking at the interface of the iPhone, iPod
    4 Touch, and the iPad, is that different than the
    5 interface on the Apple computers that you discussed
    6 earlier?
    7   A   Yes, it is. This interface uses a
    8 touchscreen. Where I talked to you about a touch-pad on
    9 a computer, this one, the screen itself is the touch
   10 sensitive.
   11   And so the way you move the stack is by
   12 putting your finger on it and dragging it, and that
   13 causes the stack to move just by doing that.
   14   Q   And when you drag your finger across the
   15 screen, is there clicking going on?
   16   A   No, there isn't. So that does meet the
   17 sliding-without-clicking limitation.
   18   Q   Thank you, Dr. Levy.
   19   Let's move then to the next claim, Claim 18.
   20   A   Claim 18 is a dependent claim, and it adds the
   21 receding foreshortened stack. We've already talked
   22 about how Coverflow meets this limitation, and here's an
   23 example.
   24   And here, although there's not the shading,
   25 there is the same perspective applied, and therefore, I

1   believe this meets this claim limitation, and Claim 18

2   is infringed.

3   Q   Okay. May I reflect that opinion on the

4   board?

5   A   Yes.

6   Q   Dr. Levy, the next one on your poster board is

7   for the Apple iPod Classic and Nano. Is it your opinion

8   that these products also infringe the Gelernter patents?

9   A   Yes, it is.

10   Q   Is it your opinion that they also infringe

11 Claims 16 and 18 of the '427 patent?

12   A   Yes.

13   Q   Before we get into your detailed analysis, can

14 you describe for us what these products are?

15   A   Yes. I have a photo of those -- examples of

16 those two products. These are just examples. There are

17 various models of each one. But on the left is the iPod

18 Classic, and on the right is the iPod Nano.

19   Q   Can you explain for us why you grouped these

20 products together and separately?

21   A   Yes. These both have this thing -- different

22 kind of interface where there's this thing here, which

23 is -- Apple calls a click wheel. And so that's the part

24 of the user interface for these devices.

25   Q   Dr. Levy, are you aware of any agreement

1 between the parties regarding infringement by the iPod

 2 Classic and Nano?

 3   A   Yes. Let me see if we can get this right.

 4 I understand that the parties have agreed that if the

 5 jury decides that the -- let's see, the

 6 sliding-without-clicking limitation is met and that this

 7 click wheel motion amounts to the same kind of sliding

 8 without clicking, then the -- these will be accepted as

 9 also infringing.

10   Q   So you're saying that if the iPod Touch

11 infringes Claims 16 or 18, that for the iPod Classic and

12 Nano to infringe, Mirror Worlds only needs to show that

13 the iPod Classic and Nano include the sliding

14 limitation?

15   A   That's right.

16   Q   And do you have an opinion as the whether the

17 iPod Classic and Nano do indeed include that sliding

18 limitation of Claim 16?

19   A   Yes, I do. I believe they do.

20   Q   And do you have a document that demonstrates

21 this?

22   A   Yes.

23   THE WITNESS: If you'll show the next

24 page, please.

25   A   Here is the claim limitation about sliding

1 without clicking. I believe that moving one's thumb or

2 finger around that circle without clicking, amounts to a

3 sliding-without-clicking operation, and therefore, it

4 infringes -- it meets this limitation on the Doctrine of

5 Equivalents, just like the others.

6   Q   (By Mr. DiBernardo) Thank you.

7   Dr. Levy, I have to ask you one more question.

8 You called it a click wheel. How can that meet the

9 limitation of sliding without clicking then?

10   A   Well, I think they call it a click wheel. I

11 have to speculate here. But I believe it's because

12 there are certain places around the circle where if you

13 do click on it, it does another operation.

14   But as far as the sliding goes, if you just

15 press down and move your thumb around it, then that's

16 what causes the sliding.

17   Q   Thank you, Dr. Levy.

18   Can we check off any boxes on your poster

19 board?

20   A   Yes, please, Claim 16.

21   Q   Thank you.

22

23   Q   Dr. Levy, the last unchecked box, Claim 18 of

24 the '427 patent, is it your opinion that this claim is

25 infringed by the iPod Classic and Nano?

1   A   Yes.

    2   Q   Would you explain that opinion?

    3   A   Yes. Again, we have here the receding

    4 foreshortened stack as the additional claim limitation

    5 in a dependent claim.

    6   And as I've shown, I believe Coverflow meets

    7 this claim limitation in the iPod Classic and Nano, and,

    8 therefore, this claim limitation is met.

    9   Q   Thank you.

   10   And may I check off that last box on the

   11 poster board?

   12   A   Yes, please. Thank you for your patience.

   13   Q   Okay. Dr. Levy, let's just switch topics for

   14 a couple of minutes.

   15   Do you know if Mirror Worlds has a damages

   16 expert in this case?

   17   A   Yes.

   18   Q   And who is Mirror Worlds' damages expert?

   19   A   Mr. Bratic.

   20   Q   Have you ever spoken with Mr. Bratic?

   21   A   Yes, I have.

   22   Q   What did the two of you discuss?

   23   A   We discussed the -- my opinion of the

   24 importance of the Gelernter technology and the patents.

   25   And we also discussed whether there was any

1 way for Apple to achieve the same functions with some

2 kind of work-arounds without using the patented

3 technology.

4   Q   What did you tell him about the importance of

5 the Gelernter technology patents?

6   A   I told him that I thought that the Gelernter

7 technology was a paradigm shift, which means that it

8 really will completely change the way people will use

9 their computers.

10   Q   And did you tell Mr. Bratic anything about

11 your opinion about whether or not there were

12 work-arounds?

13   A   Yes, I did. I told him that I thought that in

14 order to achieve the functionality that was delivered,

15 it would be next to impossible to not use this infringed

16 technology.

17   Q   Is it your opinion that it was impossible as

18 of the time Apple first infringed?

19   A   Yes. Yes, I do.

20   Q   Is it your opinion that there were no

21 work-arounds, as you call them, when the first Gelernter

22 patent was filed in 1996?

23   A   Yes.

24   Q   And did you convey this opinion to Mr. Bratic?

25   A   I did.

1   Q   Thank you, Mr. Levy -- Dr. Levy.

          2   MR. DIBERNARDO: Your Honor, we have no

          3   further questions.

          4   THE COURT: All right. Thank you.

          5   All right. Ladies and Gentlemen of the

          6   Jury, I think we're going to call it an afternoon.

          7   Again, I want to thank you for your

          8   attention today. It's been a long day, I know.

          9   We do need to make up some time tomorrow,

         10   so I'm going to ask you, would there be anyone that

         11   would have a problem with being here and starting at

         12   8:30 in the morning?

         13   Okay. We have one. 9:00 o'clock is as

         14   early as you can make it.

         15   JUROR: I have a son to drop off at

         16   school at 8:00.

         17   THE COURT: All right. We'll start at

         18   9:00 o'clock in the morning, and we'll see where we can

         19   get to tomorrow.

         20   And I will advise you that I have three

         21   sentencings that I have to do mid-morning tomorrow, and

         22   so I'm going to give you -- as quick as I can get

         23   through with them, I'll be -- we'll all be working on

         24   those while you're breaking, but you may have a little

         25   bit longer break in the morning. Instead of 15 minutes,

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 1  it may be as much as 30 minutes.

 2                   I think we can move through these fairly

 3  promptly in the morning, but I just want to make you

 4  aware of that.

 5                   We'll probably try to work until about

 6  5:30 tomorrow.  I will ask the parties to provide lunch

 7  for the jury tomorrow.  We'll plan to take a 30-minute

 8  lunch hour tomorrow and see if we can make up some time.

 9                   So with that, again, please remember my

10  instructions.  Go home; don't think about the case.

11  Clear your head; have a drink; watch TV, whatever you

12  want to do.  Maybe have two drinks depending on what you

13  feel is appropriate.

14                   So y'all have a good evening.  We'll see

15  you in the morning.

16                   COURT SECURITY OFFICER:  All rise for the

17  jury.

18                   (Jury out.)

19                   THE COURT:  All right.  Counsel -- you

20  may be seated.

21                   Do counsel from the time adjustments from

22  those depositions?

23                   MR. KELLEY:  Yes, Your Honor.  You want

24  it in minutes, percentages, or what?

25                   THE COURT:  Percentages.
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1   MR. KELLEY: Percentages. As far as on

          2 the Lindsay deposition, the exact percentages were 73.67

          3 percent for Mirror Worlds. That's how it's given to me.

          4 And 26.33 for Apple.

          5   THE COURT: All right.

          6   MR. KELLEY: And on the Serlet

          7 deposition, it was 87.54 percent for Mirror Worlds, and

          8 12.46 for Apple.

          9   MR. RANDALL: I think we've got to round

         10 them up and down.

         11   MR. KELLEY: Rounded up and down is fine

         12 with me.

         13   THE COURT: All right. Do you -- now let

         14 me have it by minutes.

         15   MR. KELLEY: Your Honor, Lindsay was 50

         16 minutes, and rounding it up, that would be 37 minutes

         17 for Mirror Worlds and 13 for Apple.

         18   THE COURT: Okay.

         19   MR. KELLEY: And we understand that

         20 Serlet was 35 minutes.

         21   Is that correct?

         22   THE COURT: Yes.

         23   MR. KELLEY: If that's the case, that's

         24 31 minutes for Mirror Worlds, and 4 minutes for Apple,

         25 again, rounding up.

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 1                    THE COURT:  Okay.  So you made up 17

 2  minutes, and it cost the Defendants 17 minutes.  So here

 3  are your times.

 4                    Plaintiff has used 6 hours and 43 minutes

 5  and 32 seconds.  And Defendants have used 3 hours and 32

 6  minutes of their allotted time.

 7                    So we're about -- that's 10 -- we're

 8  at -- we should be at 12 hours right now.  We're at --

 9  let's see.  We're at about 10 hours and 15 minutes.  So

10  we've got an hour and 45 minutes we need to make up

11  before the end of Thursday, which I think we can do.

12                    And I hope maybe y'all won't take the

13  full amount of time; but if you do, that's the

14  worst-case scenario.  So we'll see where we get

15  tomorrow.

16                    All right.  Anything further before we

17  adjourn for the day?

18                    MR. CARROLL:  Not from the Plaintiff,

19  Judge.

20                    MR. RANDALL:  Your Honor, the motion that

21  we filed I wished to make it clear to the Court that I

22  didn't -- I wasn't suggesting that the Court take it up

23  this morning.  I filed it as soon as we could, the

24  motion.

25                    THE COURT:  This is the waiver?
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1   MR. RANDALL: Yeah, that's right.

        2   THE COURT: Okay.

        3   MR. RANDALL: Whenever we can take it up,

        4   we'll take it up.

        5   THE COURT: All right. Is Plaintiff

        6   going to file a response, or do you want to be heard

        7   orally on that?

        8   MR. STEIN: We will file a response.

        9   THE COURT: All right. When will you

       10   have that filed? By 8:00 o'clock tonight?

       11   MR. STEIN: Yes.

       12   THE COURT: All right. 8:00 o'clock

       13   tonight, and I'll take it up at a break.

       14   When will this come up? During your

       15   case-in-chief, I guess?

       16   MR. RANDALL: Yeah. We're asking for the

       17   production of documents and some additional time with --

       18   with the witness.

       19   THE COURT: Okay.

       20   MR. RANDALL: And so we just wanted to

       21   get it on file as soon as we could.

       22   THE COURT: All right. Well, we'll get

       23   the response and take a look at that.

       24   Anything further?

       25   MR. RANDALL: No, Your Honor.

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 1                    THE COURT:  All right.  Let me see lead

 2  and local counsel in chambers, please.

 3                    COURT SECURITY OFFICER:  All rise.

 4                    (Court adjourned.)

 5

 6                    CERTIFICATION

 7

 8                    I HEREBY CERTIFY that the foregoing is a

 9  true and correct transcript from the stenographic notes

10  of the proceedings in the above-entitled matter to the

11  best of our abilities.

12

13

14  /s/_____
    SHEA SLOAN, CSR                    Date
15  Official Court Reporter
    State of Texas No.:  3081
16  Expiration Date:  12/31/10

17

18
    /s/_____
19  JUDITH WERLINGER, CSR              Date
    Deputy Official Court Reporter
20  State of Texas No.:  731
    Expiration Date  12/31/10
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