

Volume 2

Pages 257 - 544

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

BEFORE THE HONORABLE MARILYN HALL PATEL

REALNETWORKS, INC., a)
 Washington Corporation; et)
 al.,)

Plaintiffs and)
 Counter-Defendants,)

v.)

No. C 08-4548 MHP

C 08-4719 MHP

DVD COPY CONTROL ASSOCIATION,)
 INC., a Delaware nonprofit)
 corporation; et al.,)

Defendants and)
 Counter-Complainants.)

San Francisco, California
 Tuesday, April 28, 2009

TRANSCRIPT OF PROCEEDINGS

APPEARANCES:

**For Plaintiffs/
 Counter-Defendants:** WILSON SONSINI GOODRICH & ROSATI
 650 Page Mill Road
 Palo Alto, California 94304-1050
BY: LEO P. CUNNINGHAM, ESQUIRE
COLLEEN BAL, ESQUIRE
MICHAEL A. BERTA, ESQUIRE

(Appearances continued on next page)

Reported By: KATHERINE SULLIVAN, CSR, RPR, CRR
 BELLE BALL, CSR, RMR, CRR
 OFFICIAL REPORTERS

Katherine Sullivan, CRR and Belle Ball, CRR
Official Reporters - U.S. District Court
(415) 794-6659

APPEARANCES (CONTINUED):

**For Plaintiffs/
Counter-Defendants:** BARTLIT BECK HERMAN PALENCHAR & SCOTT
1899 Wynkoop Street, 8th Floor
Denver, Colorado 80202

BY: DONALD E. SCOTT, ESQUIRE

BARTLIT BECK HERMAN PALENCHAR & SCOTT
54 West Hubbard Street
Chicago, Illinois 60610

BY: MARK S. OUWELEEN, ESQUIRE

**For Studio Defendants/
Counter-Complainants:** MUNGER, TOLLES & OLSON
560 Mission Street, 27th Floor
San Francisco, California 94105-2907

**BY: BART WILLIAMS, ESQUIRE
ROHIT K. SINGLA, ESQUIRE
ASHLEY AULL, ESQUIRE**

MUNGER, TOLLES & OLSON
355 South Grand Avenue, 35th Floor
Los Angeles, California 90071-1560

BY: KELLY M. KLAUS, ESQUIRE

MITCHELL, SILBERBERG & KNUPP LLP
11377 West Olympic Boulevard
Los Angeles, California 90064

BY: ROBERT H. ROTSTEIN, ESQUIRE

**For Defendant/
Counter-Complainant
DVD CAA:** AKIN, GUMP, STRAUSS, HAUER & FELD, LLP
580 California Street, Suite 1500
San Francisco, California 94104-1036

BY: REGINALD D. STEER, ESQUIRE

AKIN, GUMP, STRAUSS, HAUER & FELD, LLP
2029 Century Park East, Suite 2400
Los Angeles, California 90067-3012

BY: STEPHEN R. MICK, ESQUIRE

WHITE & CASE LLP
3000 El Camino Real
Five Palo Alto Square, 9th Floor
Palo Alto, California 94306

BY: MARK F. LAMBERT, ESQUIRE

PROCEEDINGS

P R O C E E D I N G S

APRIL 28, 2009

9:36 A.M.

THE COURT: Good morning, everyone.

(Counsel greet the Court.)

THE COURT: We have the same cast of characters, so we don't need to have any new appearances placed on the record. Is that correct?

MR. MICK: Correct, Your Honor.

MR. WILLIAMS: Correct.

THE COURT: I trust everyone had a good weekend, well-rested. I'm not. I had a horrible, long calendar yesterday. We'll get started anyway.

Your next witness is?

MR. SINGLA: Is Mr. Robert Schumann, Your Honor.

THE COURT: Schumann. Okay. Are you ready to call him, then?

MR. SINGLA: Yes, Your Honor.

THE COURT: Okay. Fine.

MR. MICK: Your Honor, Steve Mick on behalf of the Copy Control Association. Before we start today, I would request a listing of the anticipated witness order from RealNetworks because I believe that the -- that our side will rest today.

I received a witness order on Sunday, but arriving

1 today, in court, I heard something to the effect that that
2 order will not hold. So to alleviate some confusion, I would
3 appreciate it if Mr. Cunningham or Mr. Scott would let us know
4 what they anticipate is their witness order.

5 **THE COURT:** Is there a new and different order?

6 **MR. CUNNINGHAM:** We don't think so, but there could
7 be. So, our first witness, regardless, is going to be the CEO,
8 Rob Glaser.

9 Our second witness, if it's today, is going to be an
10 expert, Mr. Dixon. If it's not, then, it's likely to be an
11 expert who's not available today, Dr. Bishop.

12 So the possible change is arising because we learned
13 late yesterday afternoon that the studios may not be calling
14 one of their experts. And that created a little bit of chaos
15 on our side. At 3:45 we learned that they may not be calling
16 an expert named Hollar. And that, then, created time gaps.

17 So the answer is, if it's today for sure it's going
18 to be Glaser, Dixon. If it's tomorrow, Bishop may precede
19 Dixon.

20 **THE COURT:** Is that clear?

21 **MR. MICK:** Understood. Thank you.

22 **THE COURT:** How many other witnesses are you calling?
23 Or is that it?

24 **MR. CUNNINGHAM:** No. Then there will also be one of
25 the engineers from the company, named Bielman. And we think

1 it's not very likely that we would call our last remaining
2 potential witness, whose name is Elizabeth Coppinger. We're
3 still keeping that option open, but I think it's highly
4 unlikely.

5 **THE COURT:** Thank you. So, now, Mr. Schumann.

6 **MR. SINGLA:** Your Honor, the studios call Mr. Robert
7 Schumann.

8 **THE COURT:** Mr. Schumann, please step up here and be
9 sworn, please.

10 **THE CLERK:** Raise your right hand, please.

11 **ROBERT SCHUMANN,**

12 called as a witness for the Studio Defendants herein, having
13 been first duly sworn, was examined and testified as follows:

14 **THE WITNESS:** I do.

15 **THE CLERK:** Please, state your full name. Spell your
16 last name for the record.

17 **THE WITNESS:** Robert W. Schumann, S-c-h-u-m-a-n-n.

18 **THE COURT:** You may be seated.

19 **THE WITNESS:** Thank you.

20 **MR. SINGLA:** Your Honor --

21 **THE COURT:** Yes.

22 **MR. SINGLA:** -- with respect to what Mr. Cunningham
23 was just speaking about, in terms of witness order, I wanted to
24 give the Court a sense of the presentation from the studios and
25 the DVD CCA today.

1 After Mr. Schumann, we do not expect to call
2 Mr. Hollar, as Mr. Cunningham indicated. We will have
3 videotape presentations from Ms. Hamilton and Mr. Barrett.

4 At that point, we would pass the baton to the
5 RealNetworks side.

6 **THE COURT:** Now, are there other witnesses whom
7 you're calling via video or deposition?

8 **MR. SINGLA:** Yes, Your Honor, there are other
9 witnesses we are calling by deposition. We had hoped to play
10 video excerpts for the Court, but we're very cognizant of the
11 time and we would like to finish Wednesday. So we've tried to
12 cut it down to two. If there is time, there are three or four
13 other of the engineers from RealNetworks whose short deposition
14 videos we would like to play.

15 **THE COURT:** Do we need to do that in court? Even
16 with respect to Hamilton and the other one, we have them on
17 video. You'll give them to me on video and we can play them.
18 We don't have to take court time.

19 **MR. SINGLA:** Your Honor, I understand very much what
20 the Court is saying. And that's one reason we tried to narrow
21 it down to these two witnesses.

22 The reason we picked these two, Ms. Hamilton and
23 Mr. Barrett, is that the Court had asked that this hearing be
24 focused on the RealNetworks products, how they operate, why
25 they were designed the way they were.

1 Now, RealNetworks has chosen not to call any of the
2 engineers for Vegas, the RealDVD product that's on the market.
3 And they're only calling one engineering for Facet, a
4 relatively junior engineer.

5 So we think it would be very helpful for the Court to
6 have before it, when it's hearing the rest of the testimony,
7 when it's hearing from RealNetworks' experts, when it's hearing
8 from Mr. Glaser, to have before it, at that time at least, some
9 insight into what was going on inside RealNetworks with their
10 engineers, with how they were designing the product and what
11 they were doing.

12 That's the reason we were proposing to play just
13 these two videos before we hand the baton and they bring their
14 experts and Mr. Glaser.

15 **THE COURT:** Well, we'll see where we are in the
16 process and where we're going.

17 **MR. SINGLA:** Thank you, Your Honor.

18 **THE COURT:** Otherwise, maybe we'll do it my way.

19 **MR. SINGLA:** Certainly, Your Honor. I understand.

20 **MR. SCOTT:** Your Honor, may I have a moment?

21 **THE COURT:** Yes.

22 **MR. SINGLA:** Here is some more water.

23 **THE WITNESS:** Thank you.

24 **MR. SINGLA:** Your Honor, I have a binder here with
25 Mr. Schumann's expert report and deposition, which I thought

1 might be helpful to the Court.

2 **THE COURT:** Yes.

3 **MR. SINGLA:** Can I hand that up?

4 **THE COURT:** Yes.

5 Do you have a copy, also, for the clerk?

6 **MR. SINGLA:** Of course, Your Honor.

7 **THE COURT:** Thank you.

8 **MR. SINGLA:** May I hand one to the witness?

9 **THE COURT:** Yes, you may.

10 **MR. SINGLA:** Thank you, Your Honor.

11 **THE COURT:** And are you using any video presentation
12 today, as well?

13 **MR. SINGLA:** We will during Mr. Schumann's
14 examination, have one very, very short video clip from one of
15 the engineers. Less than a minute, I think. And we will have
16 some graphics, some documents we would like to put up either
17 through the computer system or through the Elmo.

18 **THE COURT:** Okay.

19 **MR. SINGLA:** And I will also have copies for the
20 Court, at that time, that I can hand up if the Court would
21 like.

22 **DIRECT EXAMINATION**

23 **BY MR. SINGLA:**

24 **Q.** Good morning, Mr. Schumann.

25 **A.** Good morning.

1 Q. Now, Dr. Kelly -- were you here on Friday, Mr. Schumann?

2 A. Yes, I was.

3 Q. And you heard Dr. Kelly's discussion of the CSS technical
4 specifications?

5 A. Yes, I did.

6 Q. And did you agree with what Dr. Kelly said?

7 A. Uhm, yes, I did agree with what Dr. Kelly testified.

8 Q. And did you hear Dr. Kelly's explanation for why the
9 RealDVD products, Vegas and Facet, violate those
10 specifications?

11 A. Yes, I did.

12 Q. And did you agree with what Dr. Kelly said?

13 A. Yes, I agreed with the conclusions he came to.

14 Q. So, I don't want to go over that again with you today.

15 I'd like to turn to a slightly different issue, which
16 is the question of whether the RealDVD products, Vegas and
17 Facet, circumvent the CSS security system, okay, I would like
18 to focus on, not so much the material Dr. Kelly covered on
19 Friday.

20 A. Okay.

21 **MR. SINGLA:** Your Honor, one note. We're going to
22 try, during the examination, to stay away from the highly
23 confidential material either of the DVD CCA or of the ARccOS
24 and RipGuard technologies, to keep the courtroom open. But I
25 want to sort of admonish the witness.

1 BY MR. SINGLA:

2 Q. Mr. Schumann, if you think, to respond to either my
3 question or a question from Mr. Scott, that you need to get
4 into those details, if you could let us know, and we can try to
5 figure out what we need to do about it.

6 A. Okay.

7 Q. Does that make sense?

8 A. Yes.

9 Q. Now, sir, you've submitted expert reports in this case?

10 A. Yes, I have.

11 Q. And they have your CV?

12 A. Yes, they do.

13 Q. I don't want to go into your CV in detail with the Court
14 here.

15 Can you summarize your expertise in the area of DVD
16 technology and copy protection technologies?

17 A. Certainly. I've been working with copy protection
18 technologies and DVD technologies for -- since 1994. DVDs in
19 particular since about 1995-96, when the technologies came into
20 being.

21 Initially, I worked on the DivX -- the original DivX
22 system, which was an encrypted DVD system that added other
23 protections on top of the basic DVD protections, as well.

24 And, then, since 1999-2000, I also worked on
25 professional protection systems that included, also, DVD

1 players and associated technologies.

2 Q. And, so I understand, you helped design and develop two
3 DVD players?

4 A. That's correct.

5 Q. And these DVD players had, if I understood you correctly,
6 copy protection systems of their own that you and your teams
7 designed?

8 A. Yeah. In fact, actually, the first set, the DivX system,
9 was actually a set of technologies that were licensed to other
10 DVD player manufactures.

11 Q. And have you also been involved with watermarking?

12 A. Yes, I have.

13 Q. Can you summarize your experience there?

14 A. Certainly. Actually, also in the DivX days, but more
15 heavily in the Cinea days, I worked on watermarking, which is
16 another antipiracy technology to allow unique copies of
17 individual pieces of content.

18 Q. Mr. Schumann, if I could ask you to just slow down, just a
19 little bit. I think the court reporter would have an easier
20 time keeping up.

21 A. Very well.

22 Q. And watermarking is a form of copy protection for DVDs?

23 A. Yeah. Watermarking is a type of anti-piracy copy
24 protection.

25 Q. Now, can you describe your experience with the CSS

1 technology?

2 **A.** Certainly. Both of the DVD systems that I was involved
3 with also included CSS. In the DivX system, we did not use CSS
4 directly at all.

5 When Cinea created our player, we included CSS, was
6 one of the licensed technologies that we included in the player
7 we actually manufactured and sold.

8 **Q.** So, other than your work on these DVD players and security
9 systems that you designed, what else have you done in your
10 career relating to CSS?

11 **A.** Uhm, I've also been an expert witness in several cases
12 related to CSS, in the early 2000s.

13 **Q.** What cases were those?

14 **A.** Those were, I believe, the Corley case, the original DeCSS
15 case.

16 (Reporter interrupts.)

17 **A.** Corley, I believe. C-o-r-l-e-y, I think. And, then,
18 also, in the 321 Studios case.

19 **Q.** Those were the original cases relating to the
20 circumvention of the CSS technology?

21 **A.** Yeah. Those two cases related to circumvention, that's
22 correct.

23 **Q.** And, as I mentioned, we also will want to talk about
24 ARccOS and RipGuard later. Can you summarize your expertise
25 that relates to those technologies?

1 **A.** Certainly. The details of ARccOS and RipGuard I learned
2 during the process of this case. However, the background, in
3 terms of how DVDs work and all the interaction that those
4 technologies have with the DVD infrastructure, I have very deep
5 knowledge of all the DVD structures, as being able to
6 understand how the effects that those technologies do work and
7 exercise and become -- make it effective.

8 **Q.** Now, do you have any patents?

9 **A.** Yes, I do.

10 **Q.** What are the areas of your patents?

11 **A.** They're actually pretty broad. I have 17 issued and
12 pending U.S. patents. Some of them are very esoteric, around a
13 mailbox. But I have quite a few patents in the area of copy
14 protection and DVD processing technologies.

15 **Q.** Mr. Schumann --

16 **THE COURT:** You're going to have to slow down.

17 **THE WITNESS:** I'm sorry.

18 **THE COURT:** And every word distinctly, please,
19 because you ran over those last two words and I didn't
20 understand what they were.

21 **THE WITNESS:** I'm sorry, Your Honor. DVD processing
22 technologies. So, authoring systems for DVD content protection
23 systems for DVD as well as other content processing-type
24 systems like digital cinema and things like that.

25

1 BY MR. SINGLA:

2 Q. So let's make an effort, Mr. Schumann, both of us, to
3 speak slowly and try to enunciate.

4 A. Yes.

5 Q. That's an area of difficulty for myself, also.

6 Now, in this case what have you done to analyze the
7 CSS issues?

8 A. So, in this case I've actually done quite an extensive
9 amount of work. I have both reviewed the CSS specifications in
10 detail. I have reviewed the Real documentation, the Real
11 systems, the software, the operation of the systems, the
12 software itself in operation, as well as the various
13 documentation that's been made available both in terms of
14 depositions, declarations, as well as, obviously, the
15 specifications and other design documentation.

16 Q. So you reviewed the depositions of all of Real's
17 engineers, all the engineers that were deposed in the case?

18 A. I believe I did. I reviewed four or five different
19 engineers' depositions.

20 Q. And did you examine and study the source code for Vegas
21 and Facet?

22 A. Yes, I did.

23 Q. And did you inspect the Facet system itself?

24 A. Yes, I inspected the Facet prototype.

25 Q. Did you do any testing of the Facet system?

1 **A.** Yes. I also inspected the system itself, and also ran the
2 software and attempted -- and copied discs and things of that
3 nature, yes.

4 **MR. SINGLA:** Mr. Bales, slide one.

5 (Document displayed.)

6 **MR. SINGLA:** Your Honor, while that's coming up, I
7 want to introduce Ms. Ashley Aull -- also sitting at counsel
8 table -- will be assisting.

9 **THE COURT:** Good morning.

10 How do you spell last your last name?

11 **MS. AULL:** It's A-u-l-l.

12 **BY MR. SINGLA:**

13 **Q.** Mr. Schumann, can you see the slide on the screen?

14 **A.** Yes, I can.

15 **Q.** And can you describe what this slide depicts?

16 **A.** So, this slide shows the five primary protection
17 mechanisms that comprise the CSS protection envelope of
18 architecture.

19 **Q.** That's the left column?

20 **A.** That's correct.

21 **Q.** What is the right column?

22 **A.** The right column shows the effects of the Real system on
23 those protection subsystems or components.

24 **Q.** Does the right column show --

25 **THE COURT:** Can you hold just one moment, please.

SCHUMANN - DIRECT EXAMINATION / SINGLA

1 (Discussion held off the record.)

2 **MR. SINGLA:** Your Honor, I have an extra copy of the
3 slides, at least one, that I could give to the law clerk or the
4 court reporter. Can I give it to the law clerk?

5 **THE COURT:** That would help if the court reporter has
6 it, and that way Kassie can look at this. Is that all right?

7 **MR. SINGLA:** Will that work?

8 (Discussion held off the record.)

9 **THE COURT:** We're finished with all those details
10 now, I think.

11 **BY MR. SINGLA:**

12 **Q.** Let's try to go back to this now.

13 On the right side, if I understood you correctly,
14 you're talking about how, in your opinion, the copies of the
15 movies made by RealDVD remove certain kinds of protections that
16 are provided by CSS?

17 **A.** Yeah. The copies stored on the hard drive by RealDVD has
18 these protections removed; that's correct.

19 **Q.** Now, the first one says "drive locking." What does that
20 mean?

21 **A.** So, the CSS system is designed such that the drive that
22 reads the DVD disc will not release the data, the secure data
23 on that disc, until the drive is satisfied that it's talking to
24 a trusted other party. And so it locks the reading of the data
25 from the disc.

1 Q. Now, can you demonstrate drive locking for us?

2 A. Certainly.

3 MR. SINGLA: Your Honor, we have a laptop set up down
4 here. Could Mr. Schumann step down?

5 THE COURT: Surely.

6 THE WITNESS: So, Your Honor, here we have -- we have
7 two -- we have a laptop what has the external DVD-ROM drive
8 connected to the cable, the external bus, to the PC.

9 And, so, I have put into that drive a copy of the
10 "Wizard of Oz." No, I'm going to put it into the drive. A
11 copy of "Wizard of Oz." And so what happens now is I will put
12 the disc in.

13 And you'll see this is a familiar Explorer window
14 that you see to see the files and things that are available on
15 your computer. And you'll see that now it shows the "Wizard of
16 Oz" as a disc and shows it as existing file system.

17 And so, now, when I go into the "Wizard of Oz" it
18 will show me the VIDEO_TS directory. This is where all the
19 video is stored on a DVD.

20 So if I attempt to take that and copy it to my
21 desktop, as you would with any normal file, it immediately
22 fails with a file system error, because now Windows has
23 attempted to read from the drive, and the drive has refused to
24 release the content because it's still locked.

25

1 BY MR. SINGLA:

2 Q. Now, which components of the CSS system are involved in
3 enforcing that drive locking?

4 A. So the components are actually two components. It's the
5 drive itself, which has significant intelligence in it. And so
6 that when I put that disc in, the drive recognized that it was
7 a DVD disc; further recognized that it had the CSS protection
8 technology on it; and then had the intelligence from the
9 specifications and has the software in it to identify that I
10 can't release this data until I have gone through -- it can't
11 release the data until it has gone through the authentication
12 process.

13 Q. So, if I'm understanding correctly, the drive has some
14 amount of, like, intelligence in it about CSS?

15 A. It has extensive, extensive intelligence, yes.

16 Q. Now, what about RealDVD? So if you take -- if I
17 understand correctly, this thumb drive here has how many movies
18 on it (indicating)?

19 A. Seven movies, at this point.

20 Q. That you copied with RealDVD?

21 A. Yes, seven full DVDs.

22 Q. Okay. Now, does this thumb drive have -- the copies of
23 that thumb drive, are they protected by drive locking?

24 A. They are not, no.

25 Q. Could you show us?

1 **A.** Certainly. So, now, I am going to take the thumb drive,
2 plug it into the USB port of the computer. And I'm going to do
3 the same thing with Explorer.

4 You will see here, the thumb drive has now showed up
5 so we can recognize it. It's RealDVD. And if we go into the
6 structure inside that thumb drive, the RealDVD stores the data
7 in the "My DVDs" directory. And in there you'll see these are
8 the seven movies that have been copied.

9 And I have previously copied the "Wizard of Oz" using
10 the RealDVD software. And if I go into that, again they have
11 the VIDEO_TS, this folder with the video in it. If I now grab
12 this folder and try to copy it to the desktop, first of all --
13 sorry, little nuance here. But the previous copy actually
14 created the folder because that's not protected by CSS.

15 So, the folder now exists. Okay. So this is now
16 just warning me that that folder exists. So I want to allow
17 that to occur.

18 And now you'll see that the copy process has begun.
19 And rather than just beeping and stopping, it's now telling us
20 in nine minutes it will have copied all the video data. Not
21 locked.

22 **Q.** So that means that on -- if I understood correctly, that
23 on the copy made by RealDVD there is no drive locking?

24 **A.** That's correct.

25 **Q.** Now, just to make sure we all understand what you were

1 saying, that little window that came up saying, "Do you want to
2 replace the existing copy?" that's because when you had tried
3 to copy it off the DVD, the name of the folder had gotten
4 copied over but not the content?

5 **A.** Yes. Just the folder. If we had gone into that folder,
6 it would have been empty. There would have been none of the
7 video files in there.

8 Just to clarify, Your Honor, some of the files do not
9 have copy protection even on the DVDs. They do not have CSS on
10 them. So those you can copy even when the drive is locked.

11 But all of the files containing video are then
12 protected with CSS. And those are the ones that failed on the
13 copying.

14 **Q.** Now, the copy that RealDVD makes, as I understand, is
15 still encrypted, right?

16 **A.** That's correct.

17 **Q.** So why does it matter that there's no drive locking? If
18 it's still encrypted, why does that matter?

19 **A.** Because the -- with the drive locking gone, the drive
20 locking is integral to the -- in the spec, it's one of the key
21 techniques by which they tie the playback to the disc and to
22 the drive, and the requirement that it be played back from a
23 disc.

24 **Q.** Now, how do you unlock the drive?

25 **A.** Uhm, so the drive is unlocked through the authentication

1 process that Dr. Kelly described in more detail. But,
2 essentially, the drive ties to the playback software.

3 Q. And which components of the system are involved in
4 authentication?

5 A. So, authentication involves, again, obviously, the drive;
6 the intelligence that's in the drive. It includes data that's
7 on the disc itself. And then it includes the actual playback
8 software that resides on the computer.

9 Q. So can you authenticate in CSS without the physical DVD
10 itself?

11 A. No, you cannot.

12 Q. So does the copy on the thumb drive over there does -- is
13 it protected by an authentication sequence?

14 A. It is not.

15 Q. Now, Dr. Kelly explained --

16 MR. SINGLA: If we could, Mr. Bales, switch to
17 Dr. Kelly's slide 11.

18 (Document displayed.)

19 BY MR. SINGLA:

20 Q. Dr. Kelly explained that the keys on a DVD are kept in
21 hidden or lead-in areas. We'll get the slide up.

22 (Document displayed.)

23 This is the picture of the DVD, correct?

24 A. Yes, that's correct.

25 MR. SINGLA: Could we get the next slide, Kelly

1 number 12.

2 (Document displayed.)

3 **BY MR. SINGLA:**

4 **Q.** So what is this showing?

5 **A.** So, again, this is showing in the main disc this lead-in
6 area, which is at the center of the disc area, and then the
7 hidden sector header. So at the front of each data sector
8 there's the part that you can see with the file system, and
9 then there's data in front of that that's readable only by the
10 drive. And buried in that are the title keys and some other
11 information.

12 **MR. SINGLA:** SO, Mr. Bales, could we switch back to
13 the laptop.

14 (Document displayed.)

15 **BY MR. SINGLA:**

16 **Q.** So when you look at the copy in the file system of the
17 DVD, the physical DVD, can you see the keys?

18 **A.** No, you cannot. They don't appear. They are not in a
19 file. They are not readable through the normal Windows
20 processing.

21 **Q.** If I understood what you said, the only way to get at
22 those keys on a physical DVD is to authenticate directly with
23 the drive and ask for them?

24 **A.** So -- yes. So you have to go through the authentication
25 process. Then after the authentication has completed, then

1 there are specialized commands that you need to send to the
2 drive to specifically request the data that's hidden in these
3 lead-in areas and these hidden areas.

4 **Q.** Now, let's turn to the RealDVD system. Why don't you stop
5 the copying.

6 **A.** Okay.

7 **Q.** In the RealDVD system are the keys -- in the copy that
8 RealDVD makes, are the keys hidden in any kind of lead-in or
9 hidden area?

10 **A.** No. The keys are not hidden in any -- in any such hidden
11 area.

12 **Q.** Where are the keys?

13 **A.** The keys are contained -- there's a file here you can see,
14 associated again with this video, called VIDEO_TS.edf.

15 This file right here, Your Honor, that I have
16 highlighted (indicating).

17 **Q.** What's in that file?

18 **A.** That file contains the disc keys and the title keys that
19 were copied from the DVD, as well as some other control
20 information that Real uses.

21 **THE COURT:** Now, if you were to open that file, what
22 would we see in the display?

23 **THE WITNESS:** If you went to open it here, you would
24 see, essentially, gibberish, because this file is encrypted to
25 protect the reading, to add a further layer of protection on

1 it.

2 **BY MR. SINGLA:**

3 **Q.** So RealNetworks has itself encrypted that file with its
4 AES system?

5 **A.** That's correct. And it has done the same thing to the
6 files with the VIDEO_TS directory. They have also added AES
7 encryption on top of those files.

8 **Q.** So with the AES encryption that Real has added, can anyone
9 access the data other than RealNetworks software?

10 **A.** So, as you can see, you can certainly copy the data very
11 easily and anywhere you want to. But to play it back you need
12 to have the keys. And in this case, that would be controlled
13 by Real. And so you need the Real software to then access that
14 data.

15 **Q.** But can you copy the key file?

16 **A.** You can absolutely copy the key file.

17 **Q.** Can you show us?

18 **A.** Certainly. Copy it very quickly. Just take it, and it's
19 copied on the desktop (indicating).

20 **Q.** So isn't the encryption -- the Court asked about whether
21 you could look at the keys. And the answer I think you gave
22 is, no, because they are encrypted by RealNetworks' AES system,
23 correct?

24 **A.** That's right.

25 **Q.** So isn't the encryption that they put on this pretty much

1 the equivalent of this hidden sectors and lead-in area?

2 **A.** No, it actually serves -- it's a very different value, I
3 guess, to put it.

4 The hidden sectors in the lead-in area, again, are
5 tied to a requirement that you can't just casually use the
6 Windows in the normal processing available to copy this data.

7 Again, it forces you to have this specialized
8 playback environment in order to access and copy the data.

9 Again, realize, Your Honor, that the files as stored
10 on the disc, the title key and the disc key, even though they
11 are in this hidden area, are also encrypted by CSS, as well.
12 So it's not just the encryption that they wanted. They also
13 wanted this special access requirement.

14 **Q.** So on the DVD, the keys are protected not only with
15 encryption but, also, this drive locking and these hidden
16 areas?

17 **A.** That's correct.

18 **Q.** But on the RealDVD copy, it's protected by just
19 encryption?

20 **A.** That's correct.

21 **THE COURT:** Let me ask a question, then.

22 **THE WITNESS:** Certainly.

23 **THE COURT:** You have put these files on this thumb
24 drive --

25 **THE WITNESS:** Yes.

1 **THE COURT:** -- right? But you've put that into a
2 computer, not a RealNetworks DVD player, correct?

3 **THE WITNESS:** Well, there is a -- there is a
4 RealNetwork -- I use -- for this demonstration, I use their
5 Vegas system, which is software that is on regular PCs.

6 **THE COURT:** So you already have it loaded on?

7 **THE WITNESS:** I do, yes.

8 **THE COURT:** So that explains how you could then open
9 the files on the thumb drive; is that correct?

10 **THE WITNESS:** No. The parts I showed you here, where
11 I can access these files and copy them, makes no use of any of
12 the Real software. To actually play the movie requires the use
13 of the RealDVD software.

14 **THE COURT:** I see.

15 **THE WITNESS:** But, for example, I could take this
16 thumb drive and plug it into your personal computer, or give it
17 to you and you could copy these files onto the hard drive on
18 your personal computer at home.

19 **THE COURT:** So I would have all those files. But if
20 I didn't have a RealDVD player or that software I could not
21 play the movies --

22 **THE WITNESS:** Correct.

23 **THE COURT:** -- is what you're saying?

24 **THE WITNESS:** Or, importantly, the keys necessary to
25 decrypt the files.

1 BY MR. SINGLA:

2 Q. Which are in the RealDVD software?

3 A. That's correct. Which are protected by the RealDVD
4 software.

5 THE COURT: Thank you.

6 THE WITNESS: Uh-huh.

7 BY MR. SINGLA:

8 Q. Now, Dr. Kelly also explained bus encryption.

9 MR. SINGLA: Could we go back to slide 1, Shannon.

10 (Document displayed.)

11 BY MR. SINGLA:

12 Q. Where's the bus here. Can you show the Court?

13 A. Yeah, certainly.

14 So, there's actually two buses here. There's one in
15 the CSS side. There's the bus from the drive in the computer.
16 This is what's called the "bus." Essentially, a connection.

17 Q. When you have a DVD drive inside a computer, not an
18 external one, is there still a bus?

19 A. Yes. There's just a shorter version of that cable buried
20 inside.

21 Q. So on the RealDVD side, if you look at that thumb drive,
22 is there a bus involved?

23 A. Certainly. Again, it's the same thing. There's the
24 connection between the external -- in this case, an external
25 disc.

1 Q. Now, is there -- I don't want to get into the details of
2 bus encryption. Dr. Kelly covered that in quite some detail.

3 But are there keys flowing back and forth when you
4 play a movie off the thumb drive in RealDVD, going over that
5 bus?

6 A. Certainly. Again, the RealDVD system, obviously, when it
7 plays, goes out and reads the VIDEO_TS.edf file in order to
8 access the keys necessary to play the movie.

9 Q. That's a better speed.

10 A. Thank you.

11 Q. Now, on a DVD, can the bus encryption happen without the
12 DVD, physical DVD?

13 A. In a CSS system, no, it cannot. CSS bus encryption. CSS
14 bus encryption cannot work without the physical DVD as part of
15 the process.

16 Q. So, am I right that bus encryption, the required bus
17 encryption, also within it has a requirement of a physical DVD?

18 A. That's correct. The algorithm by which the bus
19 authentication is set up, the authentication process, and the
20 creation of the bus key, uses data that exists only on the
21 physical DVDs themselves.

22 Q. So does the requirement of bus encryption have within it
23 the requirement that the DVD be in the drive?

24 A. It's implicit to being able to complete the process.

25 Q. Now, the buses -- the bus keys or the bus encryption

1 system was described by Dr. Kelly as being time variable. What
2 does that mean?

3 **A.** So part of the algorithm of setting up the authentication
4 process and the creation of this bus key, one of the inputs to
5 that is a random number. And, so, the net result is every time
6 you do an authentication, the key that is created is different.
7 Okay.

8 Because of this random number input, the output is
9 always a different key that's created. And, therefore, the
10 data that's encrypted, even if it's the same data that's sent,
11 you will see something different on the bus every time after a
12 new authentication.

13 **Q.** So every time you play "Wizard of Oz," even in the same
14 computer, there will be a different key for the bus encryption
15 under CSS?

16 **A.** That's correct.

17 **Q.** And in the RealDVD system, when you play the "Wizard of
18 Oz" off their system, are there different keys generated every
19 time you play it?

20 **A.** No, there are not.

21 **Q.** I think you can take your seat, Mr. Schumann.

22 Now, the last item on this slide that we didn't talk
23 about is item number 5, content encryption?

24 **A.** Uh-huh.

25 **Q.** What is that?

1 A. So, content encryption is the actual CSS encryption where
2 they take their CSS algorithm, apply the key, and actually
3 encrypt the content. Encrypt the content.

4 Q. By "content" you mean the video itself?

5 A. The actual video itself, that's correct.

6 Q. And does the RealDVD system preserve that level of
7 protection?

8 A. Yes, it does.

9 Q. So what is the rest of this matter, if they've maintained
10 that level of protection?

11 A. Uhm, so, it's very important, when looking at security
12 systems, to remember that security systems comprise two parts.
13 They comprise what's called the cipher, such as CSS or AES,
14 which is the actual encryption algorithm by which you hide
15 something. And then there's the key management, which is how
16 you protect the keys, and use the keys, and operate with the
17 keys. And those are two completely different parts.

18 And in this diagram, essentially the last item,
19 content encryption has to do with the ciphering issue, in the
20 last protection stage. And the rest of it all has to do with
21 the key management problem, and the protection of the keys, and
22 the operational rules around how you can use those keys.

23 Q. You said cipher?

24 A. Cipher, yes.

25 Q. C-i-p-h-e-r?

1 A. Yes, correct.

2 Q. Now, could RealNetworks have made a system that copies
3 movies to a hard drive, and maintained all these levels, these
4 other levels, 1 through 4, of protection?

5 A. Not with standard hardware components you would find.
6 Because hard drives, external USB drives, et cetera, do not
7 have the intelligence to do this type of bus authentication or
8 any of these other stages. Neither for CSS nor, quite frankly,
9 for any other security system that I'm aware of.

10 Q. Now, you said you reviewed the CSS specifications?

11 A. Yes.

12 Q. That includes the license?

13 A. Yes, that's correct.

14 Q. Did you also review the procedural specification?

15 A. Yes.

16 Q. Did you review all the technical specifications that apply
17 to RealNetworks' products?

18 A. I reviewed a considerable amount of -- I assume most of
19 it, but everything that was produced that I'm aware of, yes.

20 Q. The authenticator specification?

21 A. Yes.

22 Q. And the descrambler specification?

23 A. Yes.

24 Q. And the general specifications?

25 A. Yes.

1 Q. Now, did you see anything in any of those specifications
2 that authorized RealNetworks to strip off these protections
3 from the copies that they make?

4 A. No, I did not.

5 Q. Did you review the reports and depositions of Real's own
6 experts?

7 A. I did.

8 I'm sorry. Can I clarify that previous answer?

9 Q. Please.

10 A. I did not see anything in the specifications that
11 authorizes them to strip these off for when the content is
12 stored on a hard drive.

13 Clearly, you need to remove these protections as part
14 of a normal playback process. And that's obviously authorized
15 in the specification.

16 Q. Now, you reviewed Real's experts' reports and depositions?

17 A. I did, yes.

18 Q. Did they identify any provision of the specifications that
19 authorized RealNetworks to strip off these protections from
20 copies it makes?

21 A. Not that I'm aware of, no.

22 Q. I want to change subjects.

23 MR. SINGLA: We can take the slide down.

24 BY MR. SINGLA:

25 Q. Real is complaining -- one of the things that Real

1 complains about is it did not get the specifications until
2 after it signed the license. Okay?

3 A. Okay.

4 Q. Now, have you ever licensed computer security systems?

5 A. Yes, I have.

6 Q. How about systems for DVDs?

7 A. Yes, I have.

8 Q. Have you licensed them to other parties, such systems?

9 A. Yes, I have.

10 Q. And have you licensed such systems from other people?

11 A. Yes, I have.

12 Q. In your experience, is it unusual to get the technical
13 specifications after signing the license?

14 A. It's actually not terribly unusual because, typically, the
15 technical specifications are trade secrets of some form. And
16 the core license or the highest level part of the license
17 agreement describes, very often, the protections that need to
18 be afforded to those details. And so it's not unusual that the
19 details are held back until the license is signed.

20 Q. Now, RealNetworks has made a couple of arguments that I
21 want to pass by you.

22 On Friday, we heard some discussion about the fact
23 that keys and video data are copied from the DVD into memory
24 when a DVD is played back. Do you recall that on Friday?

25 A. Yes.

1 Q. Now, why are the keys and video data copied into memory
2 during playback?

3 A. It's implicitly necessary in order to run the programs and
4 the algorithms. The algorithms, computer has to operate on
5 data in memory in order to implement any software. So it's
6 necessary, obviously, to bring that data into memory to
7 implement the algorithms described in the CSS specification.

8 Q. So in the specifications, if it asks you to do something
9 to the video data, is a computer capable of manipulating the
10 data as it sits on the DVD itself?

11 A. Not directly, no. It has to bring it into memory to do
12 anything with it.

13 Q. So did you see anything in the CSS specifications that
14 authorized the copying of video data and keys into memory?

15 A. Uhm, again, it's essentially implicit in the fact that
16 they authorize you to run the algorithms. And, therefore, you
17 have to bring it into memory.

18 Q. So when the specification says, you know, do X, Y and Z to
19 the key, to descramble the video data, that -- what you are
20 saying is that that's telling the computer scientist to bring
21 that stuff into memory?

22 A. There is really no other choice other than what that could
23 mean.

24 Q. Have you heard the term "buffering" applied to bringing
25 video data into memory?

1 A. Certainly.

2 Q. Now, Real says this buffering, bringing video data into
3 memory, is the same as what they're doing. Is it the same?

4 MR. SCOTT: Your Honor, I object. That's a
5 misstatement of what we have said. And I think it's an
6 improper form --

7 THE COURT: Why don't you just ask a question.

8 MR. SINGLA: Sure.

9 THE COURT: Rather than what may have been testified
10 to.

11 MR. SINGLA: Sure.

12 BY MR. SINGLA:

13 Q. Is what RealNetworks doing, copying movies to DVDs, is the
14 same as buffering?

15 A. Are you asking is the act of putting a copy on a hard
16 drive an act of buffering?

17 Q. Yes.

18 A. I would say no.

19 Q. Why not?

20 A. Buffering is a concept related to, essentially, short-term
21 usage of data. Typically in a mode where you're going to
22 overwrite it.

23 So in the example of processing a DVD, you would take
24 in a little bit of video; you would decrypt it; you would
25 decompress it; you'd show it on the screen. And you'd bring in

1 the next chunk of video. And you would take a buffer, and you
2 would kind of cycle the data through that buffer.

3 So that really is a completely different process than
4 taking the whole thing and writing it out to a hard drive.

5 **THE COURT:** If you were asked to give a definition of
6 "buffering," what is that definition?

7 **THE WITNESS:** So, I guess, I would define a buffer as
8 a temporary storage location used during the active processing
9 of data.

10 **THE COURT:** Implicit in that is storage into memory
11 on a temporary basis?

12 **THE WITNESS:** In the vast majority of cases,
13 absolutely. And, in particular, if you're talking about a
14 security specification, buffering is actually -- you view --
15 so, in a specification, general specifications tend to deal
16 with interoperability, how A can work with B without the two
17 people developing the code being the same.

18 Security specifications that add another layer on,
19 that's again implicit in the fact that you know you're working
20 on the security or with secure things, that you do only what's
21 specifically allowed, as opposed to what might be possible.

22 **BY MR. SINGLA:**

23 **Q.** Now, did you review -- one thing. When you buffer in a
24 video playback system, how much video is being buffered? How
25 much time? Five minutes worth of video?

1 A. In a typical DVD playback environment, it's several
2 seconds of video.

3 Q. A couple of seconds?

4 A. Yes. There is a minimum that's defined and required.

5 Q. Now, did you review the deposition testimony of
6 Mr. Brennan?

7 A. Yes, I did.

8 Q. Did you review his testimony about buffering?

9 A. Yes, I did.

10 Q. And did that help you understand or did you rely upon that
11 for your opinions?

12 A. Uhm, so I looked at his description of buffering and how
13 it might be applied to the problem of playing back and dealing
14 with CSS data, and it didn't really change my opinion of what I
15 think buffering means in this context.

16 Q. Let's take a look at what Mr. Brennan said about
17 buffering.

18 MR. SINGLA: If we could play Brennan clip 1, page
19 212 of his deposition, lines 3 to 17.

20 (Video deposition excerpt played in open court as
21 follows:)

22 "QUESTION: Right. So, my question is: The
23 retaining it on the hard drive, that has
24 nothing to do with the buffering, does it?

25 "MR. CUNNINGHAM: Objection.

1 **"ANSWER:** It does.

2 **"QUESTION:** (BY MR. SINGLA) Why?

3 **"ANSWER:** Because it's being used for
4 performance improvement.

5 **"QUESTION:** But the fact that you keep it
6 there has nothing to do with the buffering,
7 does it?

8 **"ANSWER:** That has nothing to do with the
9 buffering.

10 **"QUESTION:** Okay. And if a person puts the
11 movie in and just hits save -- not play and
12 save, just save -- that has nothing to do
13 with buffering either, does it?

14 **"ANSWER:** That's correct.")

15 **BY MR. SINGLA:**

16 **Q.** So Mr. Brennan there, did you understand him to agree that
17 saving the movie to the hard drive itself has nothing to do
18 with buffering?

19 **A.** That's correct.

20 **Q.** Now, the other thing that came up on Friday, that I want
21 to just touch on, is the suggestion that Mr. Scott made,
22 discussion about virtual memory, things going out to virtual
23 memory.

24 Do you remember that?

25 **A.** Yes, I do.

1 Q. And whether certain pages of the player containing keys
2 could be paged out?

3 A. Correct.

4 Q. Now, if the pages with the keys were paged out in virtual
5 memory, would they go across a user-accessible bus?

6 A. Absolutely.

7 Q. Okay. And what do the specifications say about allowing
8 keys to be paged out?

9 A. The specifications are very clear that keys may not be
10 passed over a user-accessible bus.

11 Q. How would a computer scientist engineer, reading the
12 specifications, understand what they're supposed to do with
13 respect to virtual memory?

14 A. So as an implementer of the security system, you would
15 ensure that your implementation didn't pass things over a
16 user-accessible bus, which in a general-purpose computer system
17 would imply that you would require that the memory be locked in
18 memory. And, also, there are other more edge cases, such as in
19 Windows you can do something called hibernation, where even
20 memory that's, quote, locked, essentially gets written out to
21 hard drives. You would also need to deal with that case, as
22 well, at minimum.

23 Q. And lock down the keys or make sure they don't get passed
24 into the hard drive?

25 A. That's correct.

1 Q. Now, let's turn to another subject. You've reviewed
2 Real's specifications, documents about Facet?

3 A. Yes, I have.

4 Q. Its Facet product?

5 A. That's correct.

6 MR. SINGLA: If we could put up Exhibit 232, just the
7 first page of it.

8 Your Honor, let me give the Court a copy.

9 (Document displayed.)

10 BY MR. SINGLA:

11 Q. Let me give you a copy also, Mr. Schumann, in case you
12 need the paper.

13 A. Thank you.

14 Q. Now, did you review this document?

15 A. Yes, I did.

16 Q. And this is an internal RealNetworks presentation, dated
17 September 2008?

18 A. That's correct.

19 Q. If I could ask you to turn to page 49, in that document.

20 A. Uh-huh.

21 Q. What is that showing there?

22 MR. SINGLA: Mr. Bales, is it possible to blow that
23 up?

24 (Document displayed.)

25

1 **BY MR. SINGLA:**

2 **Q.** What is that showing?

3 **A.** I'm sorry. I thought you were waiting. So what that's
4 showing is, it's showing the Facet box. So, their Facet
5 system. And it's connected to an ethernet, and then via that
6 ethernet out into the Internet.

7 **Q.** Is that the current design of the Facet system?

8 **A.** Yes, it is.

9 **Q.** If we could turn to page 51. Two pages later.

10 **MR. SINGLA:** And, Mr. Bales, again, if we could blow
11 that up.

12 (Document displayed.)

13 **BY MR. SINGLA:**

14 **Q.** Now, what is this showing?

15 **A.** So, this is showing an environment where there are
16 multiple Facet boxes connected to that Internet, as well as
17 external storage. This network-attached storage is kind of
18 like the equivalent of the thumb drive, only it's on your
19 Internet connection.

20 **Q.** Let's slow down and do one thing at a time.

21 **A.** Sorry.

22 **Q.** That will help the court reporter, also.

23 This is showing, you were saying, multiple Facet
24 boxes?

25 **A.** That's correct.

1 Q. What is the network-attached storage shown in the middle
2 there?

3 A. The network-attached storage is, essentially, a disk drive
4 that connects to your ethernet connection in your house.

5 Q. Did you review Mr. Brennan's testimony about these
6 documents?

7 A. Yes, I did.

8 Q. Could movies be stored on the network-attached storage?

9 A. Theoretically, absolutely.

10 Q. And, then, it's showing discless Facet boxes. What is
11 your understanding of what a discless Facet box would be?

12 A. So, my understanding, based on the documentation that I
13 reviewed from Real, is that that would be a Facet box that had
14 no internal storage of its own, but would play back stored
15 copies that are external to that box.

16 Q. So, if I understand correctly, you would use Facet to save
17 movies to this network-attached storage, and then watch them on
18 different boxes across this network?

19 A. That's correct.

20 So, in this diagram, that discless Facet box would
21 read the movies stored, for example, on the network-attached
22 storage, and then play them back on the attached TV, in this
23 case.

24 Q. Now, in the bottom it says, "Home network." Do you see
25 that?

1 A. Yes.

2 Q. Do you understand that to be a reference to the ethernet,
3 to an ethernet network?

4 A. Yes, clearly, an ethernet network.

5 Q. Now, is there any reason that that ethernet network would
6 be limited to a home network as opposed to an office or a
7 dormitory, something else?

8 A. No. The networking technology itself has no inherent
9 understanding of where it runs.

10 Q. It doesn't know that it's in a home?

11 A. That's correct.

12 It's the same ethernet, whether you run it in an
13 office, or here in this courtroom, or a college dorm. Same
14 thing.

15 Q. Now, is there any technological reason you know of that
16 Facet cannot be designed this way?

17 A. Uhm, there's no technological barriers to creating this
18 implementation.

19 Q. And is it your understanding that this is on what
20 RealNetworks describes as their future roadmap?

21 A. Uhm, so based on the documentation that I reviewed from
22 RealNetworks, they clearly were investigating and viewed this
23 as, yes, their roadmap of future products.

24 Q. Now, I want to turn to a different subject.

25 You've heard and seen in the documents reference to a

1 five-computer limit for Vegas?

2 A. That's correct.

3 Q. Now, does that mean you can only copy the movies five
4 times?

5 A. Uhm, no. That refers to that only five registered
6 computers or five computers and on one registered account can
7 play a copy of the movie.

8 Q. How many times can you copy a movie using Vegas?

9 A. Essentially, an unlimited number of times.

10 Q. Infinite number of times?

11 A. Yes.

12 Q. And is there any limitation on who those -- excuse me. Is
13 there any limitation on where those five computers are located
14 that can play back those copies?

15 A. No. They only have to be registered to the same account.

16 Q. So could be a neighbor?

17 A. Certainly.

18 Q. Someone who lives somewhere else?

19 A. Yeah. It could be somebody who's in the dorm room. Could
20 be anybody who you are willing to share your account with.

21 Q. Now, what enforces this five-computer limit?

22 A. The five-computer limit registered to an account is
23 enforced by Real's centralized computers, central computer
24 system.

25 Q. So Real has some central computer in Seattle, or

1 somewhere, that enforces this five-computer limit?

2 **A.** That's correct.

3 **Q.** How hard would that be for Real to change that to 15 or 50
4 or 500?

5 **A.** I haven't seen the actual code for those systems, but
6 presumably it's a constant that's very easy to change.

7 **Q.** "Constant." Do you mean a fixed number in the code?

8 **A.** Yeah, fixed number. So you change the number. You
9 recompile it. And, then, the number is changed. Or might even
10 be in a database.

11 **Q.** Now, what if Real wanted to remove that limitation
12 altogether, after this case was over it decided it didn't want
13 to have any limit on the number of people who could register
14 the same account, how hard would that be?

15 **A.** Uhm, to change the-- to change the number of people that
16 could be registered an account?

17 **Q.** No. To remove the limit altogether, so there was no
18 number.

19 **A.** So there was no number. They would need to change the
20 software, the actual Vegas playback software, itself, which
21 checks to see whether or not you belong to an account.

22 **Q.** So they could remove that?

23 **A.** Yes. That could be removed.

24 **Q.** What about all the people who have already bought Vegas,
25 how would they change it on all those people's computers?

1 A. So, Vegas, like most modern software programs, has the
2 ability to be updated over the Internet. So they could
3 download and give you, you know, the updated copy of the
4 program.

5 Q. Okay. Now, one of the questions the Court asked was
6 whether the copies -- you said that, for example, the movies
7 copied here could be copied onto another thumb drive?

8 A. That's correct.

9 Q. And then from there onto another thumb drive?

10 A. Again, using the Windows copy function we demonstrated
11 earlier.

12 Q. And from there onto another thumb drive?

13 A. Certainly.

14 Q. Now, will those copies of this first copy, will they play
15 in the current implementation of RealDVD?

16 A. No, they will not.

17 Q. Why won't the copies of this copy play in the current
18 version of RealDVD?

19 A. So, the current Vegas system compare -- checks the
20 identifier of the hardware it's playing back from, the disc
21 it's playing back from, with data stored in that EDF file, and
22 will only play back the movie from the hard drive on which it
23 was originally saved.

24 Q. So, in other words, right now Real makes sure that you can
25 only play back the movie from the place where you first copied

1 it?

2 **A.** That's correct.

3 **Q.** The place to which you first copied it?

4 **A.** That's correct.

5 **Q.** Now, how hard would it be for Real to change that, so
6 after this case --

7 **MR. SCOTT:** Your Honor, I object. I think we are
8 going far afield talking about things that this product is not
9 designed to do, doesn't do, or are possible technologically.
10 That's not the product we make or is not the product that we
11 designed.

12 **THE COURT:** The objection is overruled.

13 You may answer.

14 **THE WITNESS:** I'm sorry. Could you repeat the
15 question.

16 **BY MR. SINGLA:**

17 **Q.** Let me repeat the question.

18 How hard would it be for Real, after this case is
19 over, to change Vegas so that the copies made from here, from
20 this thumb drive, copied to another thumb drive, another hard
21 drive, another thumb drive, that you could play any of those,
22 how hard would that change be?

23 **A.** It's essentially removing one line of code from the Vegas
24 software.

25 **Q.** That's a good pace for your answer, right there. For both

1 of us.

2 And, then, how would they update or could they update
3 all the copies of Vegas already out there?

4 A. Again, through this update mechanism that they would use
5 just like any other software change they made, yes.

6 Q. So you've talked about two changes to the code, if I
7 understood correctly. One would be to change the software so
8 it allowed you to play back from copies of copies. And the
9 second would be so that it would not be limited to playing back
10 movies copied in the same account. Those are the two things
11 you described?

12 A. That's correct.

13 Q. And you said that there would be relatively simple changes
14 to make, and they could be propagated to all the existing
15 copies of Vegas, right?

16 A. Yes, using the update mechanism.

17 Q. Now, what would happen if Real made those changes?

18 A. The net effect of that would be that, essentially, any
19 copy of Vegas could play any movie stored by any other copy of
20 Vegas.

21 Q. Could people post these copies up on the Internet and
22 share them, use them?

23 A. Certainly. Wherever you could copy these files, which is
24 the Internet, wherever you copy them to you could use them.

25 Q. Okay. Let's change subjects. Let's talk about ARccOS and

1 RipGuard.

2 **MR. SINGLA:** Now, I'm going to keep this conversation
3 at a high enough level that we do not need to seek to close the
4 courtroom, nor try to do that, as I mentioned earlier.

5 But, Your Honor, I just want to note that these
6 technologies, the trade secrets, belong to third parties;
7 Macrovision and Sony DADC.

8 And so, again, we're going to try to keep the
9 conversation at a high enough conceptual level that we don't
10 need to get into trade secret material. But I want to let the
11 Court know that the witness is prepared to get into those
12 details if the Court has questions and wants to know more.
13 But, at that point, we may need to close the courtroom.

14 **BY MR. SINGLA:**

15 **Q.** Now, what did you do to learn about ARccOS and RipGuard?

16 **A.** So, I studied materials provided by both Sony and
17 Macrovision, that described how their systems worked and how
18 their technologies worked.

19 I reviewed and studied documentation that came from
20 Real, describing these technologies or included descriptions of
21 these technologies.

22 I studied some software that's available on the
23 Internet that rips or attacks these technologies.

24 And I also talked with engineers at Sony and
25 Macrovision about the technologies.

1 Q. You interviewed engineers at Sony DADC and Macrovision?

2 A. Yes, I did.

3 Q. And did you analyze the relevant code in Vegas and Facet?

4 A. Yes, I did.

5 Q. So you looked at the source code?

6 A. That's correct.

7 Q. For the code that handles ARccOS- and RipGuard-protected
8 discs?

9 A. Yes. That's one of the things I looked in their source
10 code at.

11 Q. And did you read the witnesses' and the engineers'
12 depositions about how they copy ARccOS- and RipGuard-protected
13 discs?

14 A. Yes. I read about how they try to handle ARccOS- and
15 RipGuard-protected discs, yes.

16 Q. Did you do tests of the Vegas or Facet system, trying to
17 copy ARccOS and RipGuard discs?

18 A. Certainly.

19 Q. Okay. So, now, again, let's try to keep this conversation
20 at a high level. And if I think you're venturing into details,
21 I'm going to stop you.

22 What are RipGuard and ARccOS?

23 A. At a very high level, RipGuard and ARccOS are
24 copy-protection technologies that are complementary to
25 something like CSS, that essentially take advantage of the way

1 that both DVD drives work, as well as the structures, the
2 higher level logical structures carried on those discs, to stop
3 programs that are attempting to copy the data off of the disc.
4 For example, using a Windows file transfer.

5 Q. So you said they use things like bad sectors?

6 A. Sorry. We keep adding new terminology.

7 So, yes, one of the core techniques they use is
8 they -- essentially, the data in the disc is broken up into
9 sectors, as has been shown. And so they, for example,
10 introduce errors, deliberate errors, into the sector data such
11 that when the disc goes to read that sector the disk drive will
12 be unable to read the sector and will return a read error to
13 the program, to the computer.

14 Q. Now, do these technologies replace CSS?

15 A. No, they're completely complementary to CSS.

16 Q. So they are placed on DVDs in some of CSS?

17 A. Yeah. Or in parallel with CSS, correct.

18 Q. Now, are there differences between RipGuard and ARccOS
19 that relate to the opinions you have in this case, the
20 conclusions you've reached?

21 A. So the two products have different sets of techniques.
22 There's actually quite a number of detailed techniques that are
23 used.

24 And the products are different in detail. But at the
25 conceptual highest level, they are very, very similar,

1 certainly in the net effect watching the impact from the
2 outside, in terms of that they effectively prevent you from
3 reading from the disc, or make the disc reading process very,
4 very slow.

5 **THE COURT:** Are they intended to be used together or
6 separately?

7 **THE WITNESS:** No, the two products are intended to be
8 used separately.

9 **BY MR. SINGLA:**

10 **Q.** Are they competitors?

11 **A.** They are absolutely competitors.

12 **Q.** They are competing products?

13 **A.** Yes. In fact, there's at least one other product that I
14 know that's in a similar vein, but is very rarely used. These
15 two are the main products of this type that exist in the
16 marketplace.

17 **Q.** Now, we talked about bad sectors, briefly. So without
18 getting into the trade secret details -- and I'm going to lead
19 just for this question, Your Honor -- do other similar -- do
20 other techniques used by these technologies include things like
21 obfuscating or hiding the way the menus are structured?

22 **A.** Yes. So, again, these products operate both in kind of
23 the physical domain, that is, they attack, like, the sector
24 read capabilities on the?

25 **Disc.** And, then, they also operate in the logical

1 structures on the disc. So, for example, one of the
2 technologies, if you looked at a directory listing of all of
3 the files on the DVD, which you can do, would show that the
4 DVD, you know, the directory listing shows the file name and
5 the size of the file, right.

6 And if you looked at one of these DVDs, it would show
7 that the DVD contains 64 gigabytes of data, okay. Well, the
8 DVD can't contain physically more than 8 gigabytes of DVD, of
9 data, okay. And, so, that's an example where they have
10 introduced deliberate errors into the directory structure,
11 okay, to try to confuse copy programs. Because a program
12 that's just copying files would then attempt to read 64
13 gigabytes of data that doesn't exist.

14 Q. Now, do DVD players take a license to ARccOS and RipGuard
15 the way they take a license to CSS?

16 A. They do not.

17 Q. Why not?

18 A. So, in -- these products are very carefully designed and
19 created so that in the normal playback of a DVD by a DVD
20 player, the errors are never -- the deliberate errors placed in
21 these structures are never encountered during normal playback,
22 so it's transparent to a player while the video is being played
23 back by a human being.

24 Q. So when a human being is watching a movie, they don't run
25 into any of these ARccOS or RipGuard techniques?

1 **A.** By design, they should not run into them, that's correct.

2 **Q.** Well, if when you watch a movie as a human being you don't
3 run into any of these techniques, how do these techniques,
4 again, at a high level, how do they stop rippers?

5 **A.** So, essentially, these technologies -- actually, very
6 clever technologies. Essentially, they take advantage of the
7 difference between kind of what the human perceives and sees
8 and what a computer system sees and perceives.

9 It's almost -- forgive the analogy, but it's almost
10 the difference between looking at the wall with your eyes, and
11 being able to see the blueprints that are behind the wall,
12 okay.

13 And they take advantage of those two, where the
14 ripper operates on the blueprints, and the human operating the
15 video while it's playing just sees the wall. And they drive a
16 wedge between that difference, this discordance between how the
17 video is viewed.

18 **MR. SINGLA:** Your Honor, to explain what Mr. Schumann
19 is saying in detail, we're happy to do that. We're prepared to
20 do that. But it would require closing the courtroom.

21 **THE COURT:** Let's proceed. That may not be
22 necessary.

23 **MR. SINGLA:** Okay. Thank you, Your Honor.

24 **BY MR. SINGLA:**

25 **Q.** Now, do RipGuard and ARccOS, to your knowledge, have any

1 function, any reason to put on DVDs other than copy protection?

2 **A.** No. I'm not aware of any reason you would use them other
3 than copy protection.

4 **Q.** Let's turn to your tests of the Facet system.

5 What did your test of the Facet system, with respect
6 to ARccOS and RipGuard, what did it show?

7 **A.** So, with the Facet system I copied discs that had only CSS
8 on them. And, then, I also attempted to copy discs that had
9 RipGuard and ARccOS protections on them.

10 **Q.** And what were the results?

11 **A.** Uhm, I was able to successfully copy all of the discs that
12 had only CSS. And I had mixed results with the ARccOS and
13 RipGuard discs. So, some of them copied fine, and other of
14 those copies failed.

15 **Q.** Other copies failed?

16 **A.** Other copy, yeah, attempts to copy discs would then fail
17 with some of the versions of RipGuard and ARccOS.

18 **Q.** Now, do you recall any problems watching these movies that
19 failed to copy?

20 **A.** No. I never had problems watching these movies. I only
21 watched a very small number on the actual Facet box, but
22 watched them on other DVD players without any problems.

23 **THE COURT:** The discs were both protected by CSS and
24 either ARccOS or RipGuard; is that right?

25 **THE WITNESS:** That's correct. As far as I'm aware,

1 all commercial releases from the studios used both CSS, and
2 then either nothing else, or CSS plus RipGuard, or CSS plus
3 ARccOS.

4 **BY MR. SINGLA:**

5 **Q.** How about the testing of the Vegas system, what did it
6 show?

7 **A.** So, I did a very similar testing with the Vegas system,
8 with, essentially, different results but similar net effect.

9 **Q.** Some ARccOS/RipGuard movies would copy, some protected
10 movies would not copy?

11 **A.** That's correct.

12 **Q.** Now, what did you conclude from the test results?

13 **A.** That the -- both Facet and Vegas were able to partially
14 overcome the techniques, overcome some of the techniques used
15 by ARccOS and RipGuard, but they still had some work to do to
16 finish ripping those copies.

17 **Q.** So, did it indicate to you that RealNetworks had designed
18 the capability into Vegas and Facet to circumvent at least some
19 versions of ARccOS and RipGuard?

20 **A.** Uhm, so the -- the -- certainly, my tests, in conjunction
21 with my review of the code and other documentation, absolutely
22 led me to the conclusion that they had succeeded in some --
23 against some of the techniques used but not all of the
24 techniques used by these technologies.

25 **Q.** And what did your results leads you to conclude with

1 respect to whether ARccOS and RipGuard are effective?

2 **A.** Uhm, they're clearly affected because some of these discs
3 couldn't be copied even after quite a bit of work by the teams
4 involved in Facet and RipGuard. I'm sorry, in Facet and Vegas.
5 Excuse me.

6 **Q.** You know, if you could move the mike a little closer, that
7 might help a little.

8 Now, can these products, Vegas and Facet, can they
9 detect or do they try to detect when they're dealing with
10 ARccOS and RipGuard discs versus regular CSS discs?

11 **A.** Certainly. In their -- in their processing flow, they
12 have very clear decision points where they, in the software,
13 make a decision and say, oh, this is an ARccOS disc.

14 And, just to be clear, Real settled into using the
15 term "ARccOS" to represent discs that had both of these
16 technologies on them.

17 So, if you look at most of their documentation in
18 their code, they'll say, "This is an ARccOS disc." In fact,
19 this might be ARccOS or RipGuard. The engineers at Real had no
20 real way to know the difference between what technique was with
21 what company.

22 But they are very clear, there are switches in the
23 code that say, oh, this is ARccOS, and take this path, and now
24 process the disc differently because it has this ARccOS effect
25 on it.

1 Q. I just wanted to make sure that was clear. I think what
2 you were saying is that, internally, in RealNetworks, they
3 refer to discs protected by ARccOS or RipGuard, they use the
4 term "ARccOS" for both of those?

5 A. They generally use the term "ARccOS" for both of those,
6 that's correct.

7 Q. Now, did you review the depositions of Real's engineers
8 with respect to ARccOS and RipGuard?

9 A. Yes, I did.

10 Q. Did the engineers, in their depositions, advance any
11 theory for why the products could copy discs with ARccOS and
12 RipGuard?

13 A. Uhm, so there was a theory raised that this type of
14 processing that was done was necessary to deal with
15 normally-occurring errors in a disc, like scratches, smudges
16 and other type of physical damage that would occur to a disc in
17 normal handling.

18 Q. Was this an explanation given by just one of the
19 engineers, or multiple of Real's engineers who were deposed?

20 A. There were several people who were deposed who discussed
21 this type of issue.

22 Q. So they said that the reason -- it's your understanding,
23 the explanation they gave for the separate code they had was
24 that it was to deal with scratches and smudges, and the like?

25 A. Uhm, it was an explanation advanced by them, yes.

1 Q. Now, so did you consider the possibility that RealNetworks
2 did not know about ARccOS and RipGuard, and so that the fact
3 that they can copy the discs was sort of an inadvertent result
4 of trying to deal with scratches and smudges?

5 A. Well, certainly, the idea of dealing with scratches and
6 smudges and read errors from a disc is something you want to
7 deal with and look at when you're building a playback product.
8 So the idea that you would want to handle that is absolutely
9 something you would want to look at and understand.

10 But in looking at the implementation done, and how
11 they went about it, is not consistent with actually dealing
12 with real errors or coming from scratches or smudges you would
13 find on the disc.

14 Q. Now, did you see documents from Real where they discuss
15 ARccOS and RipGuard as copy-protection schemes?

16 A. Yes, certainly.

17 MR. SINGLA: Mr. Bales, could we put up Exhibit 5.

18 (Document displayed.)

19 MR. SINGLA: And, Your Honor, I forgot to move for
20 the admission of --

21 THE COURT: 232.

22 MR. SINGLA: Thank you, Your Honor. 232.

23 THE COURT: That's this document?

24 MR. SINGLA: The September 2008 document.

25 MR. SCOTT: No objection, Your Honor.

THE COURT: 232 is admitted.

(Exhibit 232 received in evidence.)

MR. SINGLA: Your Honor, may I hand up a copy of Exhibit 5 for the Court?

BY MR. SINGLA:

Q. Now, Mr. Schumann, this is another presentation, internal presentation at RealNetworks?

A. That's correct. Do you have another copy?

Q. Yes. Am I right, this is dated April 2007?

A. That's correct.

Q. Do you remember -- do you remember Mr. Barrett talking about this document in his deposition?

A. Yes, I believe he did.

Q. And do you remember him saying that he had written this document?

A. Uhm, he was clearly among the authors, yes. He described being among the key authors of the document.

Q. Okay. Now if we could turn that document to slide 35.

(Document displayed.)

Now, the first line reads, "DVD Protection Schemes (ARccOS, RipGuard, others)."

What did you take from that?

A. That they had identified that these technologies existed. They had clearly done some research, because they already know the brand names. They're even spelled correctly. So they, at

1 this point in time, have already identified that three
2 copy-protection technologies are applied to DVDs.

3 **Q.** Is this the only time you saw ARccOS and RipGuard
4 discussed in Real's documents, in terms of being
5 copy-protection techniques?

6 **A.** No, no. There are many other examples.

7 **MR. SINGLA:** Can we put up Exhibit 233. Your Honor,
8 could we move the admission of Exhibit 5, if I did not already?

9 **THE COURT:** Any objection?

10 **MR. SCOTT:** No objection, Your Honor.

11 **THE COURT:** Exhibit 5 is admitted.

12 (Exhibit 5 received in evidence.)

13 **MR. SINGLA:** This is Exhibit 233.

14 Mr. Bales, could you put up Exhibit 233. I can use
15 the Elmo, if it's a problem.

16 Could you switch the Elmo on.

17 (Document displayed.)

18 **BY MR. SINGLA:**

19 **Q.** Can you read that on the screen?

20 **A.** Yes, I can.

21 **Q.** So now this is an e-mail, August 22, 2007, from
22 Mr. Barrett.

23 Now, do you understand this is an e-mail from
24 Mr. Barrett to himself?

25 **A.** Uhm, it appears to be that, yes.

1 Q. And I would like to point you to the first paragraph
2 there. It reads, "ARccOS. Is this an effective copy
3 protection scheme? I believe the answer is no since it is
4 possible to copy without understanding ARccOS at all, though at
5 a speed penalty."

6 Now, is Mr. Barrett correct, that you can copy ARccOS
7 discs without understanding them?

8 A. Uhm, not in my opinion, no.

9 Q. Why not?

10 A. This under -- or this comment assumes an extremely
11 simplistic understanding of what ARccOS is, and the effects.
12 So, in some cases the technologies allow you to complete a
13 copy, but albeit at a very, very slow rate. So, while the copy
14 might normally take an hour, it takes 20 or 15 hours to do the
15 copy.

16 The technique that enables that is actually only one
17 technique of this array of techniques. And that one technique
18 this statement might be correct for. But there's a whole host
19 of other techniques they employ, both ARccOS and RipGuard
20 employ, that without understanding the techniques and taking
21 affirmative action to overcome that issue you can't accomplish
22 a copy.

23 Q. Now, let's turn to your analysis of Vegas. Now, did you
24 conclude one way or the other whether the code that you saw in
25 Vegas, that copies ARccOS and RipGuard discs, was there to deal

1 with scratches?

2 **A.** So, there is code in Vegas which is intended to deal with
3 scratches, and is probably quite effective in dealing with
4 scratches.

5 **Q.** Was there code that you found that was not there to deal
6 with scratches?

7 **A.** Absolutely. Again, in the -- in all of this code is in
8 the handling of read errors from the disc. And so the code
9 makes a clear distinction between error handling, scratch
10 handling, and ARccOS. I'm going to use "ARccOS" in quotes
11 here, to represent both technologies.

12 **Q.** Does the code itself actually mention in the code ARccOS
13 or RipGuard?

14 **A.** Absolutely. The term "ARccOS" is mentioned in the
15 comments.

16 **Q.** It's used in the source code itself?

17 **A.** Absolutely.

18 **Q.** Now, let's talk about, for a second -- let's step back for
19 a second and talk about how Vegas deals with read errors from a
20 disc when playing back a DVD.

21 So you play back a DVD in Vegas. How does Vegas deal
22 with a read error, then?

23 **A.** So during normal playback, just straight playback directly
24 from the DVD, when a read error is encountered from a disc, it
25 hops forward a small number of sectors, just skips over a

1 couple of sectors, and then continues reading, and essentially
2 continues the playback process.

3 Q So in playing back a DVD, it does a little hop when it
4 hits the read error. What does Vegas do when it copies a DVD,
5 and it hits a read error?

6 A So when it's copying a DVD, in -- in -- for most of the
7 data on the DVD, it skips actually quite a bit ahead, it does a
8 larger hop forward, and attempts to do another read, a second
9 read.

10 If that second read succeeds, then it just continues
11 copying, from that point on. So that's -- essentially, it
12 says, "Oh, that was a scratch," and continues copying.

13 If that second read fails, then it makes the decision
14 that, "Oh, this must be ARccOS" -- and I'll use "ARccOS" again
15 to represent the generic terminology -- "This must be ARccOS."

16 And so, a -- a key design feature or a key feature of
17 both ARccOS and RipGuard is that there's a unit called the cell
18 on a DVD. And a cell is essentially a chapter of video. It's
19 kind of the smallest set of video that you play contiguously,
20 okay?

21 And the way these technologies work is that they
22 create dummy -- one of the things they do is they create dummy
23 cells. Okay, so that they put a bunch of errors in a cell.

24 And so, what -- the decision is made is, "Oh, I
25 skipped -- I had an error, I skipped forward, I got another

1 error. This must be one of those ARccOS cells." And so, it
2 skips immediately to the complete end of the cell, skipping all
3 of the data in the cell, and then continues reading.

4 Q Let me stop you.

5 A Uh-huh.

6 Q And we'll try to do this in little bites.

7 So, if that was a scratch, had been a scratch, what
8 would it mean that it jumped ahead to the end of the cell?

9 A Right. So, again, the cell is the kind of smallest
10 playback unit. While the cell can theoretically be very small
11 on typical DVDs, these are chapters. So you might be skipping
12 three or four minutes of video because you encountered a,
13 quote, scratch.

14 Q Now, is there any reason to treat these read errors
15 differently in playback versus copying?

16 Why would they have one set of code for playback and
17 a different set of code for copying?

18 A Again, you, you -- the -- during playback, none of --
19 during normal playback, ARccOS and RipGuard are designed to not
20 be seen by the player. So as the player -- as you play it
21 back as a human, you will never hit these sectors, so you never
22 have to deal with it.

23 But of course, the copy code is now encountering the
24 ARccOS and RipGuard pieces, and therefore has to deal with them
25 very differently than you would during playback.

1 Q Now, couldn't it be that a scratch lined up with a cell, a
2 scratch that went all the way along a cell, isn't that
3 possible?

4 A Not really. I mean, scratches are typically the -- the
5 cell structure, right is a big circular structure, right? It
6 goes around in these concentric circles (Indicating).

7 And so, if you were going to have a scratch that
8 was -- followed a cell, you would basically have to have a
9 scratch that followed this microscopic curve around a disc.
10 And those scratches are probably almost impossible to make,
11 even for a highly skilled lab, to create a scratch that
12 followed exactly that nature. It's just not real-world
13 scratches.

14 Q Now, we have been focusing on how Vegas deals with bad
15 sectors. But are there other parts of the Vegas code that deal
16 with some of these other techniques that you have mentioned?

17 A Certainly. There are also portions of the code that deal
18 with detecting. I talked earlier about these strange file
19 structures, so there are codes to deal with that.

20 And there are a few other examples that we can talk
21 about offline, if appropriate.

22 Q By "offline" you meant in a closed courtroom?

23 A I'm sorry, in a closed --

24 THE COURT: I gathered that's what --

25 THE WITNESS: In a closed courtroom.

1 **MR. SINGLA:** Confusion of the Record on that point.

2 **By Mr. Singla:**

3 **Q** Can we look at Exhibit 50?

4 Now, did you review the technical specifications for
5 Vegas?

6 **A** Yes, I did.

7 **MR. SINGLA:** I want to hand up an excerpt from
8 Exhibit 50. And Your Honor, I think it makes sense to number
9 this 50A, now that I think about it, because it's just an
10 excerpt.

11 **THE COURT:** Fine, 50A.

12 (Exhibit 50A marked for identification.)

13 **MR. SINGLA:** Your Honor, could we move for the
14 admission of Exhibit 233, the e-mail from Mr. Barrett to
15 himself?

16 Yes.

17 **MR. SCOTT:** No objection.

18 (Exhibit 233 received in evidence.)

19 **THE COURT:** And did you move in 5?

20 **MR. SINGLA:** I think I moved that, Your Honor.

21 (Off-the-Record discussion)

22 **THE COURT:** 5 is admitted also.

23 **MR. SINGLA:** Thank you, Your Honor.

24 **BY MR. SINGLA:**

25 **Q** And if we look at 50A here, what is this document?

1 **A** This is a design document for the overall Vegas product.

2 **Q** Called "Specification RealDVD"?

3 **A** That's correct.

4 **Q** Do you remember how long this document was?

5 **A** I think it was about a hundred pages, roughly.

6 **Q** Okay. So, if we could turn to the, like, fourth page of
7 the excerpt, which is Page 80 of the original document.

8 **MR. SINGLA:** Mr. Bales, could you blow out the
9 paragraph beginning 9.4.1?

10 **BY MR. SINGLA:**

11 **Q** Now, what does this specification tell you about ARccOS
12 and RipGuard and the way Vegas deals with them?

13 **A** So, this is the -- the design section that's describing
14 both how to deal with ARccOS -- again, this is the generic
15 ARccOS -- and then also talks about normal reader handling as
16 well.

17 **Q** And, if we could go to the paragraph at the bottom of that
18 page.

19 Does that describe the code that you mentioned in
20 Vegas that you saw that distinguished during copying between
21 scratching and ARccOS cells?

22 **A** Yeah. This is essentially the logic that it follows.
23 That's correct.

24 **Q** So, now, the testimony of the engineers at Real that the
25 code was there to deal with scratches, did you conclude that

1 the evidence supported that idea?

2 **A** Again, in Vegas, there is some code that does deal with
3 scratches. But it also, in this logic, clearly differentiates
4 between the scratch handling versus the handling it does to
5 deal with ARccOS or RipGuard type of errors it encounters.

6 **Q** Let's turn to Facet. Now, when Facet is playing back a
7 DVD, physical DVD, playing it back like *The Wizard of Oz*, how
8 does deal with errors on the disc? A scratch or anything else?

9 **A** Well, so Facet, Facet, when it's playing back from the
10 DVD, if it encounters any error at all, any read error from the
11 drive, it will terminate the playback of the DVD.

12 **Q** How about when copying a movie?

13 **A** So, when copying a movie, Facet starts the same way that
14 ARccOS -- or excuse me, that Vegas does, where it does just
15 sort of a linear copy, it's a little nuance, that it copies
16 ISOs instead of files, but essentially, linearly starts copying
17 the movie again.

18 **Q** Lets stop, one at a time, to make sure we understand what
19 we are hearing. So, a linear copy is -- it just kind of
20 spirals around the disc, and copies just the whole disc?

21 **A** That's correct. And the nuance, to be clear, is that
22 Vegas copies one file at a time. So it goes to a certain point
23 in the spiral and then starts copying that file in that kind of
24 linear fashion around the spiral.

25 And, Facet doesn't work on files, it works on the

1 lower-level structure of the DVD. And so, it actually just
2 kind of starts spiraling from the beginning of the DVD sector
3 zero, and working its way outward.

4 Q So it's spiraling around, and it hits a bad sector or read
5 error.

6 A That's correct.

7 Q What does Facet do on copying?

8 A So, now, on copying, when it's spiraling along and it hits
9 a read error, then it makes a determination that it's dealing
10 with an ARccOS disc, and jumps to a completely different copy
11 mechanism.

12 It abandons this spiral copy mechanism, and goes to a
13 completely different copy mechanism.

14 Q Does the Facet code also reference ARccOS explicitly?

15 A Yes, it does.

16 Q Inside the source code?

17 A That's correct. Inside the source code.

18 Q Now, what is this alternative method called?

19 A So in the Facet system, this is a mechanism or a
20 subroutine called DVD Walk.

21 Q DVD Walk.

22 A DVD Walk.

23 Q Now, again, what's the 15-second, 30-second version of how
24 DVD Walk works?

25 A So, what DVD Walk does is DVD Walk essentially starts

1 reading all of the DVD structures that make up the DVD
2 description. And starts essentially traversing and kind of
3 spidering out, and trying to follow all of the possible paths
4 that are in the DVD.

5 Q So instead of copying the discs sort of in a spiral, it
6 actually tries to follow all the different avenues the video
7 takes?

8 A Yes. So the net effect is that -- is that it does a part
9 of the spiral, and then it will jump somewhere else into
10 another part of the spiral, and will eventually come back to
11 the part it was at later on.

12 So it's kind of hopping all over the discs. A little
13 bit like what happens during the playback of a DVD.

14 Q Now, could that jumping around, this DVD Walk traversal,
15 spidering, you called it, could that be to avoid scratches?

16 A It's really not effective against scratches, no.

17 Q Why not?

18 A Again, because the scratches happen randomly all over the
19 discs. And so, the fact that you're hopping around isn't going
20 to help you avoid the actual scratches, in any form.

21 Q If a disc -- let me put it this way. If a disc is not
22 protected by ARccOS and RipGuard -- not protected by ARccOS and
23 RipGuard -- is the spiraling linear copy and the jumping around
24 copy, the DVD Walk, are they going copy the same parts of the
25 disc, just in a different order?

1 A Yeah, they will end up with almost the identical -- the
2 identical effect, that the same data will have been copied to
3 the same place. Yes.

4 Q So if there's a scratch on the disc, both methods of
5 copying are going to get -- hit that scratch.

6 A Absolutely correct.

7 Q So, what is the point of this DVD Walk? Why jump around
8 everywhere?

9 A The only purpose, in my opinion, is to try to overcome the
10 protections from ARccOS and RipGuard.

11 Q Now, Real has suggested that the DVD Walk is merely
12 following something I think I heard them call the DVD playback
13 protocol.

14 What is a DVD playback protocol?

15 A I'm not sure what they mean by that term.

16 Q Do you know of any such protocol?

17 A No, I don't. And I don't know what that term means in the
18 DVD context.

19 Q Now, is DVD Walk the same as a DVD player?

20 A No. It's not the same.

21 Q Does it play video?

22 A No, it does not play video.

23 Q What are the other differences, some of the other
24 differences between a player and the way DVD Walk functions?

25 A So, a core difference is that DVD player reacts to the

1 interaction of the human with the menus that are presented on
2 the screen.

3 Q So when a player -- a human being decides "I want to watch
4 a trailer or watch the Spanish-language audio" or whatever --
5 is that right?

6 A That's correct.

7 Q What does DVD Walk do?

8 A DVD Walk, again, just essentially analyzes -- again, this
9 is -- I apologize for using analogies. But DVD Walk looks at
10 the blueprints behind the wall, and tries to understand what's
11 happening in front of the wall, and then react, and pretend to
12 be a person.

13 Q Now, does DVD Walk read the sectors on the disc? You said
14 it jumps around. Does it read it the same order as when
15 someone watches the movie?

16 A No. It does not. In fact, it has no way of knowing the
17 order in which somebody might watch a movie.

18 Q Now, we have been talking about the order in which Facet
19 copies sectors. It jumps around when it finds an
20 ARccOS/RipGuard disc. Right?

21 A Uh-huh.

22 Q Are there other things in the Facet code -- other than the
23 DVD Walk itself, that it's jumping around -- better designed to
24 deal with techniques used by ARccOS and RipGuard to protect
25 DVDs?

1 A I'm sorry. Can you reask that question?

2 Q Sure. Other than the DVD Walk, are there other provisions
3 or other parts of the code other than simple jumping around,
4 designed to deal with protections put in place by ARccOS and
5 RipGuard?

6 A Well, there's clearly the number one, the decision to
7 encounter and go into this whole stage, right, and then -- in
8 the copy process.

9 Q Right. And then, as it's trying to do this walk, is there
10 code in the Facet system that looks for other kinds of errors
11 or obfuscations that RipGuard or ARccOS have added to the DVD?

12 A Well, the process of DVD Walk is not just kind of
13 following the trails. But these technologies bury landmines,
14 almost, if you will, in these structures.

15 And so, DVD Walk is, in fact, a highly sophisticated
16 piece of software which attempts to detect these landmines and
17 skip these landmines. Okay.

18 And again, I would be happy to talk about some of
19 those techniques in detail, but I'm pretty sure we would need
20 to close the courtroom for that.

21 Q Now, did you review Mr. Dixon's deposition?

22 A I did, yes.

23 Q And do you remember he claimed in his deposition that
24 Macrovision had some program that they had written that could
25 go out and copy any ARccOS or RipGuard-protected disc?

1 A I remember he -- he described that he believed there was
2 such a thing, yes.

3 Q To your understanding, is there such a program?

4 A To -- there is, to my knowledge, no program that
5 Macrovision has that can read RipGuard or ARccOS-protected
6 discs.

7 Q And is that based on your interviews with the engineers at
8 Macrovision?

9 A Yes. So, after I reviewed Mr. Dixon's testimony or
10 deposition, I started thinking about this. And it didn't make
11 sense to me that they would have this.

12 And so, as I talked with the Macrovision engineers, I
13 walked through it. And in fact what they have matches what I
14 would believe they have.

15 Q What do you believe -- what did you think they would have
16 that is actually what they have?

17 A So, Macrovision does have an authoring tool to create
18 these RipGuard effects that in fact does a similar spidering
19 process, that it goes and follows all of these chains.

20 And it does that to figure out where it can add these
21 Macrovision effects, and how it needs to modify these changes
22 to kind of add in the landmines.

23 Q But if you give that program, that program that
24 Macrovision has, if you give it an ARccOS or RipGuard-protected
25 disc, can the Macrovision program copy those discs?

1 A No, it can't. And it didn't make any sense to me that it
2 would. And I specifically asked the Macrovision engineers
3 about that.

4 And they confirmed that in fact if you fed a
5 RipGuard-protected disc into their system, it would fail on the
6 read of that disc.

7 Q So even Macrovision doesn't have a program that can read
8 its own protected discs, and copy them.

9 A No purpose for them to have such a program.

10 Q Now, Real also argues that ARccOS and RipGuard are not
11 effective copy protection. What's the best evidence that you
12 have seen in this case about whether ARccOS and RipGuard are
13 effective?

14 A Probably the best direct evidence is that even after
15 pretty significant development efforts, both Vegas and Facet
16 are still incapable of copying a variety of discs that have
17 ARccOS and RipGuard on them.

18 Q Well, how much time -- from your understanding of the
19 record and the deposition testimony -- and effort did the Facet
20 team put into designing their -- their circumvention algorithm?

21 A So, they spent man-months of development efforts on this
22 process. And at least as of, I think, January, it was still
23 ongoing.

24 Q How about the Vegas team?

25 A Again, they also spent, I believe, man-months and included

1 outside contractors to resolve this issue.

2 Q What do you mean, outside contractors?

3 A They hired -- there's an external company that their
4 documents show them having worked with, around the ARccOS and
5 RipGuard issue.

6 Q I want to show you Exhibit 76.

7 Are these e-mails relating to the outside contractor
8 you were referring to?

9 (Witness examines document)

10 A Yes, this is one of the e-mail chains, yes.

11 Q And what is this -- this e-mail chain is dated December
12 11, 2007, but actually started, I guess, back in November?

13 The chain covers a few weeks?

14 A Yeah. That seems correct.

15 Q And who was the chain between?

16 A It was between Jeff Chasen, who was one of the senior
17 members of the Vegas team, and Anton, I'm sorry, I can't
18 pronounce his last name, who is the CEO of this contractor,
19 Rocket Division Software.

20 MR. SINGLA: Mr. Bales, actually, can I get the ELMO?

21 BY MR. SINGLA:

22 Q So Mr. Schumann, if you could turn to the
23 second-from-the-last page, it's Bates numbered 77781.

24 And there's an e-mail there, from Mr. Chasen to the
25 computer programmers in -- I think the Ukraine, that they had

1 hired. And, I've underlined some language there.

2 This is from Mr. Chasen. One thing, who is
3 Mr. Chasen?

4 **A** He is the kind of lead senior -- VP or something of the
5 Vegas design team.

6 **Q** The head of the Vegas team?

7 **A** The head of the Vegas team, that's correct.

8 **Q** And he says (As read):

9 "Any more word on the estimated work to
10 allow for saving of ARccOS DVDs, this turns
11 out to be one of the more urgent one for
12 us."

13 Now, what did you take from that?

14 **A** That again, that the two sides were working -- in
15 particular, Jeff was looking for this outside group to help
16 him, and was expecting them to help develop code for the ARccOS
17 issue.

18 **Q** And if we could turn to the response from -- from the
19 programmer that they had hired, that they were talking to.

20 And his response is, at least part of it is -- I've
21 underlined it, here, --

22 And this is on which page?

23 **MR. SINGLA:** I'm sorry. It's the prior page. 77780.

24 **THE WITNESS:** About halfway down?

25 **BY MR. SINGLA:**

1 Q Yeah. And he says (As read):

2 "With ARccOS the task appeared to be a
3 little bit harder than we though."

4 I think it means "thought."

5 "That's why no update. We have been
6 F...okay, fighting with it for two weeks
7 and no big success yet."

8 So, what did you take from that?

9 A Again, that this team was essentially starting from
10 scratch to understand ARccOS, and hadn't made a lot of progress
11 yet in overcoming the protection.

12 Q And then, do you remember what happened next?

13 MR. SINGLA: I'm sorry. Your Honor, could we move
14 for the admission of Exhibit 76?

15 MR. SCOTT: No objection, 76.

16 THE COURT: 76 is admitted.

17 (Exhibit 76 received in evidence.)

18 BY MR. SINGLA:

19 Q What do you remember happening next?

20 A I believe that, at least based on the documentation, the
21 next key event was that the group at Rocket Division discovered
22 an open source set of software which had a bunch of code to
23 attack ARccOS and RipGuard.

24 MR. SINGLA: Your Honor, can I pass up Exhibit 229?

25 THE COURT: Yes.

SCHUMANN - DIRECT EXAMINATION / SINGLA

1 **MR. SINGLA:** Let me put that on the ELMO.

2 **BY MR. SINGLA:**

3 **Q** I think this is an e-mail chain in January. Again,
4 between the same programmers and Mr. Chasen, is that right?

5 **A** Yes, that's correct.

6 **Q** Okay. If we could turn to the second page. Bates
7 No. 78034.

8 Now, what did Mister -- I can't pronounce the last
9 name, I apologize. But, the programmer they retained from
10 overseas, what was his response? What did he tell Mr. Chasen?

11 **A** So --

12 **MR. SCOTT:** Pardon me. Your Honor, I'll object.
13 This is not proper expert testimony.

14 He's reading through documents and (Inaudible)
15 technical terms, but it's not expert testimony.

16 **MR. SINGLA:** Your Honor, if I could respond, I
17 understand what Mr. Scott is saying.

18 We are actually just getting to the technical terms
19 right here that Mr. Schumann will explain, the implication of
20 this document for his conclusions, and some of the code that he
21 looked at.

22 **THE COURT:** Well, it's admitted not for the truth of
23 the matter, or allowed to testify about the truth of the
24 matter, but in fact, what -- what forms the basis for his
25 opinion.

1 And, and you can go into it on cross-examination, is
2 the best way.

3 **MR. SINGLA:** Thank Your Honor.

4 **THE COURT:** So, what line are you talking about? 034
5 and --

6 **MR. SINGLA:** And the language that I was --

7 **BY MR. SINGLA:**

8 **Q** Well, Mr. Schumann, you tell me. What did you learn from
9 this document?

10 **A** So, so, again, this, this e-mail chain describes this
11 software they found, this PSL2 plug-in.

12 **Q** PSL2 plug-in?

13 **A** PSL2 plug-in.

14 **Q** Okay.

15 **A** I believe that's the name of it, was what it was. Yeah,
16 PSL2.

17 And this is open source software that integrates with
18 rippers, or a particular ripper type that is out in the -- was
19 out in the -- still in existence in the field.

20 And this plug-in is designed -- and I looked at the
21 source code that's referenced by it -- is designed to in fact
22 attack and try to overcome -- analyze the discs, and overcome
23 ARccOS and RipGuard discs.

24 **Q** Now, it says here it's around 200K of source, greater than
25 5K lines. First, what does that mean?

1 **A** So, so that means that the source file for this is over
2 200,000 bytes long, and has more than 5,000 lines of source
3 code.

4 **Q** Is that big or small?

5 **A** That's about a hundred pages of source code. It's quite a
6 bit of source code.

7 **Q** Well, do you know, did you ever see that source code?

8 **A** Yes, I did.

9 **MR. SINGLA:** Your Honor, can we move for the
10 admission of Exhibit 229?

11 **MR. SCOTT:** No objection.

12 **THE COURT:** 229 is admitted.

13 (Exhibit 229 received in evidence.)

14 **BY MR. SINGLA:**

15 **Q** Do you recall seeing e-mails in which a file called
16 ARccOS.zip was sent from these programs to Mr. Chasen?

17 **A** Yes.

18 **Q** And then, do you recall seeing e-mails were circulated
19 internally?

20 **A** Yes, that's correct.

21 **Q** Now did you review this ARccOS.zip -- well, first, what
22 was ARccOS.zip? Is it a file?

23 **A** It's a collection of files.

24 **Q** Did you review the files inside the ARccOS.zip?

25 **A** I reviewed at a high level, I looked at the files, and I

1 reviewed essentially this particular, this PSL2 one in detail.

2 Q Can I show you Exhibit 230? Can you tell us, what is
3 that?

4 A This is the source code file for this PSL2 plug-in that
5 was in this ARccOS.zip.

6 Q And what did you conclude from this, reviewing this file?

7 A I think this, this file helped reinforce the complexity,
8 and how hard it is. It talks about various techniques, again,
9 that ARccOS and RipGuard use, and the complexity of code it
10 takes to actually overcome these.

11 Q Does that suggest to you that ARccOS and RipGuard are
12 effective?

13 A Again, it absolutely comes to the effectiveness, it's a
14 non-trivial problem to overcome these technologies.

15 Q "Non-trivial" by computer science terms means "hard"?

16 A Yeah.

17 Q I think, a lot of us, "non-trivial" doesn't necessarily
18 mean "hard."

19 A It's non-trivial for a skilled engineer to create this
20 type of code.

21 Q Now, could the Vegas Facet teams have learned how to
22 circumvent ARccOS and RipGuard from studying these files they
23 got from these overseas programmers?

24 A It -- it certainly could have helped them in that process,
25 in that it helped provide some background to the techniques

1 that were used.

2 Q Can you show us in the document? Is there somehow you
3 could show us some of the things they could have looked at?

4 A So -- yeah. If you turn to Page, I think, starting on
5 Page 3, and going I guess until Page 7, the -- the document
6 which is actually pretty well -- the code which is pretty well
7 done has a version history, which is common in source code,
8 that describes every version and kind of the changes that were
9 made to that version.

10 So you will see this software has gone through quite
11 a bit of versions, actually. And in those versions, some of
12 the comments talk about effects that come from ARccOS/RipGuard
13 that they have encountered and are now able to fix.

14 Q I might have asked you this, but I'm not sure, so I'll ask
15 it again, just in case.

16 If you had to point the Court to a single piece of
17 evidence about the effectiveness, whether these are really copy
18 protection technologies, what would that be?

19 A Yeah. I think you did. And again, it comes back to that
20 the -- the systems, the Facet and Vegas systems are essentially
21 unable in some cases, even today, to be unable to copy discs
22 protected with ARccOS and RipGuard. Despite significant
23 efforts to that effect.

24 Q And what have you concluded about whether Vegas and Facet
25 circumvent ARccOS and RipGuard protections when they are

1 copying DVDs?

2 **A** So, so a little bit similar --

3 **MR. SCOTT:** Your Honor, I'll object. This is
4 utilizing legal terminology, goes beyond expert opinion. This
5 is now a form objection. Asking for a legal opinion.

6 **MR. SINGLA:** Let me rephrase the question, Your
7 Honor.

8 **THE COURT:** Okay.

9 **BY MR. SINGLA:**

10 **Q** What have you concluded about whether Vegas and Facet
11 bypass the protections offered by ARccOS and RipGuard when
12 Vegas and Facet copy a DVD?

13 **A** So they -- they clearly implement code that goes, goes
14 around and is cognizant and understands the protections that
15 are there, and works to avoid those protections.

16 If that's bypass, I guess you could use the word
17 "bypass," yes, they bypass their protections.

18 **Q** Now, the copies that Vegas and Facet make on a thumb drive
19 or on a hard disc from an ARccOS or RipGuard-protected DVD, --

20 **A** Uh-huh.

21 **Q** -- what did you conclude about whether those copies have
22 had ARccOS and RipGuard removed from them?

23 **A** So, the -- based on the source code, again, I can't look
24 inside the copies because they are encrypted with Real's AES.

25 **Q** I'm sorry, with Real's AES --

1 **A** With Real's AES encryption, so there's no way to look at
2 what actually got written. But based on the source code and
3 how the system effectively has to function, they absolutely
4 remove the protections.

5 So, for example, the sector errors that exist on the
6 DVD do not exist in the copy made on the hard drive.

7 **Q** So the copy made on the hard drive with the thumb drive
8 are no longer protected by either the CSS layers that we looked
9 at earlier, or the ARccOS and RipGuard protections, if they
10 were on the DVD.

11 **A** That's correct. There are actually a few protections that
12 might still be there, but the bulk of the protections from
13 ARccOS and RipGuard have been removed. That's correct.

14 **MR. SINGLA:** I'll pass the witness, Your Honor.

15 **THE COURT:** When you say "the bulk," you're saying
16 that in fact there are some protections that still remain on
17 there, that have not been able to be removed?

18 **THE WITNESS:** Yeah. Again, there are some techniques
19 that are used that might actually survive the copy process.
20 And, would show up later.

21 Okay, and again I would be happy to explain that a
22 little bit more, but I think we would need to close the court
23 for that discussion.

24 **THE COURT:** Okay. Maybe we should take ten minutes,
25 and then we will proceed with your cross-examination. Or are

1 you conducting examination a little bit also?

2 **MR. MICK:** I have a couple of questions I would like
3 to ask. I'll defer to Mr. Scott as to what order he would
4 prefer.

5 **THE COURT:** No, that's all right. I think you should
6 go ahead. That's fine.

7 I'm sorry, I just forgot all about you over there.

8 **MR. MICK:** That's perfectly all right, Your Honor.

9 **CROSS EXAMINATION**

10 **BY MR. MICK:**

11 **Q** Good morning, Mr. Schumann.

12 **A** Good morning.

13 **Q** In your testimony a few minutes ago, you described how
14 RealDVD makes copies of movies. And in fact, I think you
15 illustrated that with one of these flash drives (Indicating).

16 Do you recall that?

17 **A** Yes.

18 **Q** And, there was -- you may have called this a thumb drive,
19 but it's the same thing. Those are interchangeable terms,
20 right?

21 **A** That's correct.

22 **Q** There was some testimony about whether or not the flash
23 drive copy could be copied, itself. Do you recall that?

24 **A** That's correct.

25 **Q** And in fact, there may have been some discussion about the

1 flash drive copy capable of being shared with other people who
2 are running RealDVD, if the copy of RealDVD was registered to
3 the same user who made the copy on this hard drive.

4 Is that accurate?

5 A To the same account.

6 Q The same account.

7 A Correct.

8 Q And there was some testimony about there being a limit of
9 five copies of RealDVD capable of being registered to a single
10 account?

11 A That's correct. The RealDVD system today can register
12 five copies.

13 Q And, you testified a little bit about whether or not that
14 was a -- a limitation that was difficult to change. Do you
15 recall that?

16 A That's correct.

17 Q I would like to ask you a different question. And that
18 is, let's suppose I have a really great DVD like *The Wizard of*
19 *Oz* (Indicating), and you borrowed my copy of *The Wizard of Oz*,
20 and put it on your version of RealDVD running on your laptop.

21 In that case, would the RealDVD software care about
22 whether your version of RealDVD was registered to my account?

23 A No. It has, in fact, no way to know.

24 Q In fact, I wouldn't even need to have RealDVD, myself.

25 You could borrow my copy of *The Wizard of Oz* and put it on your

1 RealDVD, running on your laptop, anywhere?

2 **A** Absolutely. Absolutely.

3 **Q** Now, let's suppose that Mr. Steer wanted to borrow my copy
4 of *The Wizard of Oz*, and put it on his version of RealDVD on
5 his laptop over there (Indicating).

6 Would it, would Mr. Steer's version of RealDVD need
7 to have the same account as yours?

8 **A** No. Again, his RealDVD has no idea this disc has already
9 been copied elsewhere.

10 **Q** Okay. So, the account checking, if you will, that you
11 testified earlier, wouldn't have any application to my passing
12 around a copy of *The Wizard of Oz* and it being copied by you or
13 Mr. Steer.

14 **A** No. Again, I think, as I discussed, you could essentially
15 make an infinite number of copies of that DVD, either in your
16 own account or with, you know, millions of your best friends,
17 if you can pass it around that much.

18 **Q** So I could actually pass it around to everyone in the
19 courtroom here (Indicating), who's running a laptop -- I see
20 seven or eight of them here -- and they could all make a copy
21 of *The Wizard of Oz* using RealDVD on their laptops, and the
22 five-copy limit that you testified wouldn't apply in that
23 instance.

24 **A** That's correct.

25 **Q** And at the end of the day, they would all leave the

1 courtroom with the permanent playable copy of *The Wizard of Oz*?

2 **A** Yes, they would.

3 **Q** And I would still have my original?

4 **A** Unless you lost it in the process of handing it to
5 everybody in the courtroom, yes.

6 **THE COURT:** Are you assuming, for the purposes of
7 these questions, that the copy that he's holding there is one
8 that was copied on a RealDVD copier?

9 **THE WITNESS:** No, no. He's, I believe, referring to
10 the original DVD, itself.

11 **THE COURT:** Just the original?

12 **THE WITNESS:** Just the original DVD, yes.

13 **THE COURT:** Okay.

14 **THE WITNESS:** That's my understanding of the
15 question.

16 **THE COURT:** Is that correct?

17 **MR. MICK:** That was the intent of my question, Your
18 Honor.

19 **THE COURT:** Okay. Fine.

20 **BY MR. MICK:**

21 **Q** And, all of the copies that could be made by all of the
22 people in the courtroom on their own laptops with RealDVDs, the
23 owner of *The Wizard of Oz* would not receive a penny for those
24 copies. Correct?

25 **A** Not to my knowledge.

1 **MR. MICK:** That's all, Your Honor.

2 **THE COURT:** Okay. How long do you expect you will be
3 with your cross-examination?

4 **MR. SCOTT:** I'm anticipating about an hour, hour and
5 a quarter, Your Honor.

6 **THE COURT:** Uh-huh.

7 **MR. SCOTT:** Happy to begin before lunch and split
8 over if that's your preference.

9 **THE COURT:** How about take ten minutes, and then come
10 back, and finish up with his examination before lunch? It may
11 be a little early to take lunch now.

12 Is that all right?

13 **MR. SCOTT:** Fine with me, Your Honor.

14 **THE COURT:** So, we will take ten minutes now. And
15 you may step down.

16 See you in ten minutes. Thank you.

17 **THE WITNESS:** Okay, thank you.

18 (Recess taken from 11:38 to 11:53 a.m.)

19 **MR. MICK:** Your Honor, one point before we begin, if
20 I may.

21 **THE COURT:** Yes.

22 **MR. MICK:** The direct examination of Mr. Schumann did
23 not delve into trade secret information from the specification.

24 I obviously don't know whether Mr. Scott's
25 examination will address trade secret information from the

1 specifications. If that happens, with my apologies, I may have
2 to stand up and address the closing of the courtroom issue
3 again. I hope not, but I wanted to apologize in advance.

4 **THE COURT:** Mr. Scott, can I give you an alert, that
5 you give us a heads-up in advance?

6 **MR. SCOTT:** You certainly may, Your Honor.

7 **THE COURT:** And, you'll follow through on that? Not
8 just may I tell you that, but will you follow through on it,
9 right?

10 **MR. SCOTT:** Not only do I always obey a Court's
11 direction, but --

12 **THE COURT:** Always a good idea.

13 **MR. SCOTT:** -- to the best of my ability. But also,
14 it's not my intention to go beyond the matters that were
15 covered.

16 **THE COURT:** And I'll remind you also that if you get
17 into that area -- you've been pretty careful, I guess, about it
18 -- sounds as if you have been -- that you will also give us a
19 heads-up if you think you're getting into that area, or an
20 answer requires that you do so.

21 **THE WITNESS:** Okay, absolutely.

22 **THE COURT:** Thank you.

23 You may proceed.

24 **MR. SCOTT:** Thank you, Your Honor.

25

CROSS EXAMINATION

BY MR. SCOTT:

Q Mr. Schumann, we have not met before this morning. I thank you for coming.

At the current time, your job is one of being a consultant in the media industry. Is that correct?

A Yes, that's correct.

Q You have a consulting firm called -- is it "Kay" or "Key" Consulting? Q-U-A-Y?

A I pronounce it "Quay," but you're correct, "Key" is one of the correct pronunciations.

Q And it is through that consulting firm that you currently are serving as a consultant and testifying expert witness for the studios.

A That's correct.

Q As you mentioned, your background with the studios goes back nearly a decade, however. Isn't that true?

A At least a decade, yes.

Q At least a decade, because in the past they were customers of you in previous business relationships.

A Yes. That's correct.

Q And it was after knowing the studios as your customers that you were hired by them to testify at the -- in the early 1990s, in earlier litigation.

A Prior to that litigation, they were actually essentially

1 indirect customers, but I still had relationships with them,
2 certainly.

3 Q And then you were hired by the studios to testify for them
4 in the *Reimerdes Corley* case?

5 A That's correct. I was an expert witness there.

6 MR. SCOTT: I'll spell that later.

7 BY MR. SCOTT:

8 Q In about 1990?

9 A Yeah, it was around 1990.

10 Q And then again, in the three --

11 A I'm sorry, 19 -- 2000. Not 1990. It would have been
12 around 2000, I think.

13 Q I'm sorry.

14 MR. SCOTT: I'm showing my age, Your Honor. The
15 decades kind of blur on me sometimes.

16 THE COURT: They do tend to run together after a
17 while.

18 BY MR. SCOTT:

19 Q I meant 2000, about nine years ago.

20 A Yeah, roughly in that time frame.

21 Q Okay. I'll come back in a little while, I have a few
22 questions about the facts involved in those cases.

23 I want to begin with ARccOS and RipGuard, because
24 it's fresh in mind from the sequence on the direct examination.
25 And in particular, the ARccOS.zip code, that is what Exhibit

1 230 is (Indicating), isn't it? Is it not?

2 A Hmm.

3 Q This is ARccOS.zip?

4 A Well, it's not all of ARccOS.zip. It's one of the files
5 in ARccOS.zip.

6 Q Okay. It is a file code from ARccOS.zip?

7 A That was contained -- yes, in that zip file. This was one
8 of the files in there, yes.

9 Q You were answering questions from Mr. Singla concerning
10 ARccOS.zip?

11 A Yes, I was.

12 Q Are you aware from your readings in this case that RealDVD
13 never used ARccOS.zip in its project?

14 A To, to my knowledge, none of the code from ARccOS.zip is
15 in any of the code of RealDVD, yes, I think that's true.

16 Q In fact, you've read the deposition of Jeff Chasen,
17 C-H-A-S-E-N, of RealNetworks?

18 A Yes, I have.

19 Q And you recall from his testimony, in fact, he was being
20 examined by one of the studios' lawyers, talking about
21 ARccOS.zip.

22 Do you remember that exchange? Do you remember that
23 such an exchange happened?

24 A I remember that such an exchange happened, yes.

25 Q This is from Page 188, beginning at Line 20, I would like

1 you to confirm this sounds familiar and tell us if you believe
2 it's accurate (As read):

3 **"QUESTION:** That link ends with ARccOS.zip?

4 **"ANSWER:** Yes."

5 **MR. SINGLA:** Your Honor, I'm sorry. I'm not sure
6 exactly what Mr. Scott is doing, reading the transcript into
7 the record. It's not impeaching. And, he hasn't said --

8 **THE COURT:** What is the objection?

9 **MR. SINGLA:** Hearsay. It's his own witness's
10 testimony at a deposition, Your Honor.

11 **MR. SCOTT:** Your Honor --

12 The objection is overruled. I assume it's for the
13 purpose of informing what, you know, his opinions are.

14 **MR. SCOTT:** Yes.

15 **THE COURT:** Or opining further in that respect, and
16 offered only for that purpose.

17 **MR. SCOTT:** Yes. And Your Honor, I'm going to end by
18 asking if he's familiar with it, and if it's accurate, to his
19 knowledge.

20 **THE COURT:** Okay. You may do so.

21 **MR. SCOTT:** (As read):

22 **"QUESTION:** Did you ever look at that link,
23 the document that's found at that link
24 (referring to ARccOS.zip)?

25 **"ANSWER:** I believe I downloaded it.

1 **"QUESTION:** Did you look at it and read it?

2 **"ANSWER:** I believe I downloaded it, unzipped
3 it, and did a cursory look, and then might
4 have handed it off to Buzzard. I don't know
5 how much time I spent on it, with it.

6 **"QUESTION:** Do you know if Buzzard used it
7 in his work?

8 **"ANSWER:** This was never used in any of our
9 work.

10 **"QUESTION:** That ARccOS.zip file was never
11 used in any of your work at all?

12 **"ANSWER:** That's correct. We might have
13 looked at it, but it was not part of our
14 RealDVD project."

15 **BY MR. SCOTT:**

16 **Q** Do you remember seeing that testimony in preparing your
17 opinions for this case?

18 **A** I remember testimony like that. I would have to look at
19 the document in detail, but --

20 **Q** And do you have any reason to tell this Court that
21 Mr. Chasen testified inaccurately?

22 **A** No --

23 That gets to --

24 **MR. MICK:** I think that's --

25 That gets to the heart of the problem, then. I mean,

1 whether he relied on it or not is another matter. But whether
2 he testified accurately seems to me gets to the -- the earlier
3 objection.

4 **MR. SCOTT:** I'll reframe the question, Your Honor.

5 **THE COURT:** The answer is stricken, then, to the
6 extent there was an answer.

7 **BY MR. SCOTT:**

8 **Q** Did you, yourself, find any use by RealNetworks of the
9 ARccOS.zip file?

10 **A** I found -- again, I found -- all I found or what I found
11 was in the record, that this was delivered to them by the
12 contractor, and that they certainly at least opened the zip and
13 started to look at the files.

14 Beyond that, there's nothing in the record that would
15 indicate to me one way or the other what actually occurred.

16 **Q** So you did not mean to suggest to the Court that
17 RealNetworks actually used that file.

18 **A** No. I believe you asked me if I had evidence that it got
19 used in the source code. And it's clearly not in the source
20 code.

21 **THE COURT:** Mr. Scott, how are you using the term
22 "use," in that question?

23 **MR. SCOTT:** That the code was utilized any way in
24 RealDVD, or otherwise informed their work.

25 That would seem to me those are two different

1 questions.

2 **MR. SCOTT:** Yes, Your Honor.

3 **THE COURT:** So, let's break it up, then.

4 **MR. SCOTT:** I think the first one he already
5 answered, that it was never used in their code.

6 **BY MR. SCOTT:**

7 **Q** Is that correct?

8 **A** Not to my knowledge, no.

9 **Q** And do you have any knowledge that it informed the work
10 that RealNetworks did on RealDVD?

11 **A** Again, other than to the degree that they clearly received
12 the file, and testified that they at least looked at it and
13 passed it on to an engineer. But that's the extent of my
14 direct knowledge, one way or the other, correct.

15 **Q** Basically what Mr. Chasen said, same as he said?

16 **A** I have no reason, one way or another, to be able to
17 validate whether or not that testimony is accurate.

18 **Q** Okay. Now, on the ARccOS and RipGuard technologies,
19 focusing on that, I would like to begin with the Facet product,
20 which is the box that implements RealDVD within its own box, as
21 opposed to a Windows program. Are you with me?

22 **A** I think I'm with you.

23 **Q** Okay. In the implementation of Facet that you have seen,
24 is it true that in dealing with -- well, in the first place,
25 software programming does need to deal with error correction,

1 error recovery in some way, does it not?

2 **A** Certainly, dealing with errors is a fundamental part of
3 programming. Absolutely.

4 **Q** And we know in this case that when these programs were
5 designed, that RealNetworks had awareness of ARccOS and
6 RipGuard being -- being there in the field. Correct?

7 **A** Based on what I've seen, it seems pretty clear that they
8 understood that these techniques existed, yes.

9 **Q** Yes. Now, in Facet, when it attempts to perform a copy,
10 the first thing it does is to perform what you called spiraling
11 or linear copying, to see if that works. Is that right?

12 **A** That's correct.

13 **Q** And, you have characterized that so far, that linear
14 copying or spiraling is a simple and efficient way of
15 performing the copying. True?

16 **A** Yeah. In fact, it's what Windows copy program does.
17 Similarly.

18 **Q** It's what Windows does.

19 **A** Similar to what Windows does when it copies a file. It
20 starts a mean file, and works it way through the file, from
21 beginning to end. Yes.

22 **Q** And then if Facet encounters an unreadable sector on the
23 DVD, for any reason, it will stop and abandon that approach.
24 True?

25 **A** I believe it's a single error. There may have been a

1 variable, that they needed to see two or three errors. But
2 it's effectively a single error, yes.

3 Q Whether the error is something intentional by an ARccOS
4 product or it's a different kind of an error, a non-intentional
5 error.

6 A Same net effect, yes.

7 Q Same net effect. They'll stop, Facet will stop the copy
8 and abandon that process. Is that correct?

9 A It will abandon using this linear process during the copy,
10 yes.

11 Q That's what I meant. And that's when it will switch to a
12 different process that you discussed with Mr. Singla, it's
13 called DVD Walk.

14 A Yes. Correct.

15 Q Now, my next series of questions are going to focus on
16 this question of what DVD Walk does in comparison to a user
17 playing back the video. Fair enough?

18 A Okay. Yes.

19 Q Okay. Now, Mr. Singla asked you a question to which I
20 believe you said yes, I know you said yes. Whether what DVD
21 Walk does is that it takes all the avenues the video takes.
22 And that is correct. Isn't it?

23 A No, I don't think that's precisely what I said. If I did,
24 I misspoke.

25 Q Actually, he asked you that question, and you said yes.

1 Do you remember that?

2 **A** I remember an exchange around that. And I believe you,
3 that I said exactly that answer. But --

4 **Q** Let me go to it, then. The record is what it is.

5 In DVD Walk, the Facet product then will go down the
6 various video pathways that are available to the viewer. True?

7 **A** DVD Walk will go down the various pathways described by
8 the DVD structures. So, like, there's a menu structure, that
9 says here's a menu.

10 The menu has, for example, say, two buttons. Right?
11 And so it will say, oh, there's two buttons and they can be --
12 when you press a button go here, and when you press this button
13 go here, and it will see those two buttons, and then will
14 follow those buttons as -- as if a human had pressed or
15 selected those buttons.

16 **Q** That's where I was going to go next. But, it does follow
17 the pathways that are available to the viewer.

18 **A** It follows the pathways that are described in the DVD
19 structures.

20 **Q** And for example, as viewers, we all know that the DVD will
21 offer us choices along the way.

22 **A** That's correct. But -- and again, without closing the
23 courtroom, there's a critical distinction, as I discussed
24 earlier, that these technologies take advantage of the
25 difference between kind of what a human sees and what a program

1 might see.

2 Q I don't want to close the courtroom. Let me try to stay
3 at this level.

4 A Okay. Yes.

5 Q That the -- that the viewer might chose between play the
6 movie or play the trailers, for example.

7 A Exactly. That's an example of those menu choices, yes.

8 Q And what DVD Walk might do or does do that's different is
9 it will take both pathways, and copy that video. Correct?

10 A That's correct.

11 Q And so, when we envision the difference between the viewer
12 watching and making choices at a fork in the road, the DVD Walk
13 will actually execute the copy on each one of those pathways.

14 A Again -- and I apologize for hesitating here, but I -- I'm
15 highly reluctant to characterize that as Walk doing what the
16 viewer does.

17 And I would love to illustrate this, but I'm afraid
18 we would go into territory I know you'd prefer not to.

19 Q I'm not trying to take you there.

20 A No, I understand.

21 Q I'm talking about what DVD Walk and what our product does.

22 A And I understand that.

23 Q So, I believe in one of your answers, you characterized
24 this about DVD Walk, as a process of DVD Walk, following the
25 trails that are there in the DVD.

1 A Uh-huh.

2 Q Yes?

3 A Yes.

4 Q The playback trails.

5 A The playback trails, that's correct.

6 Q And you would agree that if RealDVD were -- I'm sorry, if
7 the DVD were actually playing, Real would never even see ARccOS
8 or RipGuard or a product like that. Correct?

9 A During playback from the DVD, a DVD player should not see
10 any effects from RipGuard and ARccOS. They should be
11 transparent to a player during the playback process, yes.

12 Q Now I'm changing to the question of following those
13 navigational trails in DVD Walk.

14 When it does so, at least conceptually, DVD Walk
15 should not see ARccOS or RipGuard as it walks to follow all the
16 navigational trails on the DVD.

17 A So, I don't agree with that.

18 Q To make sure we're communicating, do you agree,
19 Mr. Schumann, that a system that walks through the DVD by
20 following all of the available navigational paths should not
21 see ARccOS or RipGuard?

22 A No, I don't agree with that.

23 Q Do you agree, in concept, that that should not happen?

24 A No. In fact, the design of ARccOS and RipGuard is to
25 prevent exactly that. Not just -- part of the design.

1 **MR. SCOTT:** May I show him his deposition, Your
2 Honor?

3 **THE COURT:** Yes.

4 **BY MR. SCOTT:**

5 **Q** And I'm on Page 304, at Line 11.

6 **MR. SCOTT:** Your Honor, would you like a copy of the
7 deposition?

8 **THE COURT:** Yes, I would, please. I thought they had
9 maybe already been lodged with the Clerk, but -- fine. Thank
10 you.

11 **BY MR. SCOTT:**

12 **Q** Now, I'm going to begin at Line 10. And we will go down
13 to your answer, which actually has two parts to it (As read):

14 **"QUESTION:** So you would agree with me" --

15 **MR. SINGLA:** Your Honor?

16 **THE COURT:** This is -- these are the exhibits, it
17 looks like, to the deposition.

18 **MR. SCOTT:** Oh, I'm sorry.

19 May I just approach, for speed --

20 Sure, yes.

21 **MR. SINGLA:** I would like know what line --

22 **MR. SCOTT:** I'm about to say that.

23 **THE COURT:** I thought he said Line 10.

24 **MR. SCOTT:** I'll repeat it, Your Honor. Page 304,
25 Line 10. Through -- I'll read through, and then I'll stop.

1 BY MR. SCOTT:

2 Q (As read):

3 "QUESTION: So you would agree with me that
4 setting aside purpose, that a system that
5 walks through DVD by following all the
6 available navigational paths" --

7 And you say "Uh-huh."

8 Question continues:

9 -- "would not see ARccOS and RipGuard, correct?"

10 There's an objection, and you continue, give your
11 answer at Line 18:

12 "ANSWER: Conceptually they should not.

13 Actually, that may not be 100 percent true."

14 And my question to you before was conceptually, if
15 RealDVD follows all the available navigational paths, should
16 they not encounter ARccOS and RipGuard.

17 MR. SINGLA: Objection, Your Honor. If this
18 testimony is going to be read in, we request that the following
19 question and answer, which -- literally, "Why not" should be
20 read into the Record.

21 MR. SCOTT: I'm just trying to break it down, and
22 take it one step at a time, Your Honor.

23 THE COURT: Well, would you read, though, the next
24 segment before any followup questions, so we have it all in
25 context.

1 **MR. SCOTT:** Sure.

2 **"QUESTION:** Why not?

3 **"ANSWER:** There are techniques in ARccOS and
4 RipGuard, at least one of them, that
5 depending on how you read that data, you may
6 or may not. You may in fact hit some of the
7 protection mechanisms."

8 And I think going down to "techniques" might be going
9 a little too deep, Your Honor, for --

10 **THE COURT:** I think that's fine.

11 **MR. SCOTT:** Yes. Thank you.

12 **BY MR. SCOTT:**

13 **Q** Now, Mr. Schumann, was that your testimony in the
14 deposition?

15 **A** Clearly, that's my testimony, that's correct.

16 **Q** And my question to you is why is it, in concept at least,
17 that following those navigational paths should not encounter
18 ARccOS or RipGuard?

19 **A** So, I think we explained earlier, and again, it's
20 important to differentiate here that ARccOS and RipGuard are
21 not one thing. They are a group of techniques.

22 Okay. So, in this context here, the primary
23 technique used by ARccOS and RipGuard is -- maybe it's even the
24 original technique they started from was creating these
25 physical sector errors on the disc.

1 Okay. And so, if you follow all the navigational
2 paths on the original release of one of these technologies, you
3 would in fact avoid these bad sectors. Okay.

4 But as the pirates began to understand that, and
5 people who wanted to copy began to understand that, more
6 sophisticated techniques were developed.

7 And so, these techniques exist to attack exactly this
8 problem. Of -- of -- something that's trying to follow all the
9 logical paths will in fact encounter paths that effectively are
10 never used during normal playback. Okay?

11 So, imagine you could create a hidden menu. So, a
12 menu that the user never knew existed, therefore it never knew
13 to hit a button. But the software that's kind of walking down
14 all the paths sees that there's a menu, assumes it's visible,
15 and starts following all those paths.

16 Well, those paths lead to landmines. They lead to
17 data you can't read. They lead to all kinds of strange places.
18 Okay. So, that's an example where a spider that's walking is
19 very different from, kind of, what the human sees. And, we can
20 go into more detail, if appropriate.

21 **BY MR. SCOTT:**

22 **Q** Are you talking there about so-called invisible buttons?

23 **MR. SINGLA:** Your Honor, this is the kind of subject
24 matter that we think should only be discussed under a closed
25 courtroom. And, this is not the trade secret information of

1 the studios. It's trade secret information of Macrovision and
2 Sony DADC.

3 **THE COURT:** I think this question can be answered,
4 but I think you have to be careful how you answer it. Okay?

5 **BY MR. SCOTT:**

6 **Q** Did your prior answer use the term "invisible buttons"?

7 **A** No, it did not.

8 **Q** I thought it did. I misheard you, then.

9 **A** I'm sorry, my prior question talked about you could
10 conceptually create invisible menus, which is very different
11 from hidden buttons.

12 **Q** Conceptually, you could create them. Is that what ARccOS
13 and RipGuard do?

14 **MR. SINGLA:** Your Honor, again, I think this is the
15 kind of questioning -- and I have no objection --

16 **THE COURT:** It's very general, it's very general.
17 So, I note your objections, just in case you have to worry
18 about protecting yourselves there, that the objection is noted.

19 But, you may answer the question, if you can answer
20 it without getting into landmines here. All right?

21 **THE WITNESS:** Again -- Your Honor, I'm very close to
22 landmines, okay?

23 **THE COURT:** Okay.

24 **THE WITNESS:** These -- and again, I'm not trying
25 to -- be happy to talk about this in a closed context. But,

1 these types of niques are very highly confidential, and
2 completely based on trade secret, to be effective.

3 **THE COURT:** Uh-huh.

4 **THE WITNESS:** But -- I'm sorry.

5 **BY MR. SCOTT:**

6 **Q** I just want to make sure, it's a very narrow question,
7 that your prior answer referred to invisible menus; is that
8 what ARccOS and RipGuard do?

9 **A** The concept of something like an invisible menu is a
10 technique known to the developers of those technologies, yes.

11 **Q** You would agree that if -- if DVD Walk, if RealDVD is
12 walking through a DVD -- that's getting a little too long.

13 If RealDVD were going through a DVD as if playing it,
14 you -- and doing that correctly, they should not encounter
15 ARccOS or RipGuard. Do you agree with that?

16 **A** If, if the -- again, this comes to -- you almost have to
17 have artificial intelligence. You have to act like a human.

18 They're designed, and they're very carefully crafted
19 to wedge into that space between how a human perceives and
20 interacts with the technology and the data carried in the
21 technology, and how a program can interact with that
22 technology.

23 **Q** If DVD Walk is going through a DVD, as if playing it, and
24 doing that correctly, you would agree they should not encounter
25 ARccOS or RipGuard?

1 **A** Can you define "as if playing"? In this regard --

2 **THE COURT:** A playback.

3 **MR. SCOTT:** Yes, a playback.

4 **THE COURT:** A playback. Not copying, playback.

5 **MR. SCOTT:** Well, no. Copying during playback, for
6 example.

7 **THE COURT:** Oh, well, that's different, isn't it?
8 Then --

9 **MR. SCOTT:** That's --

10 **THE COURT:** So, which is it? Is it just straight
11 playback? Or is it copying while playing back?

12 **BY MR. SCOTT:**

13 **Q** Mr. Schumann, if, if someone, if RealDVD is copying during
14 playback, it should not encounter ARccOS or RipGuard. Isn't
15 that true?

16 **A** Playback by a human?

17 **Q** Yes.

18 **A** Controlled by a human? That's -- if it copied only the
19 sectors referenced as a human hit buttons and moved around and
20 interacted with the DVD, that's correct. It should not
21 encounter ARccOS and RipGuard.

22 **Q** The whole point is not to interfere with playback, right?

23 **A** That's correct. That's correct.

24 **MR. SCOTT:** Your Honor, I'm not proceeding as quickly
25 as I thought I would. I believe I will probably need to go

1 past lunch and so forth. Whenever you wish to break -- I'll
2 continue now, or whenever you wish to.

3 **THE COURT:** No, that's fine. I'm considering
4 everybody else. And so, why don't you go ahead, and we'll go
5 for a little longer, and we'll see how we do.

6 **MR. SCOTT:** Sure, uh-huh.

7 **BY MR. SCOTT:**

8 **Q** Now, when Mr. Mick asked you questions, he showed you a
9 copy -- I think it was *The Wizard of Oz*.

10 **MR. MICK:** It was *Wizard of Oz*.

11 **BY MR. SCOTT:**

12 **Q** Great movie. And, asked you about someone passing that
13 DVD around to friends. Remember that?

14 **A** Yes, correct.

15 **Q** And, one thing, one thing that RealDVD cannot do at this
16 time is identify whether that particular DVD has been copied
17 before. And, I think you've testified to that. Correct?

18 **A** Yes, that's correct.

19 **Q** Because --

20 **A** To my knowledge.

21 **Q** Because to do so, to do so, it would need to have an
22 identifier, some unique number on the DVD. Correct?

23 **A** That is a potential technique.

24 **Q** Right. And you recognize that that is something that
25 would need to come from the studios, in making the DVD. Isn't

1 that true?

2 **A** That would be your mechanism, to -- to potentially get
3 information like that, correct, yes.

4 **Q** Yes. And, you were answering a number of questions from
5 Mr. Singla, to which I objected at one point, about -- about
6 things that could be done in the future with RealDVD's
7 technology, that the product doesn't currently do.

8 Remember that?

9 **A** Yes. Correct.

10 **Q** And, similarly, something that can be done with a DVD is
11 to put an identifier on it when it's made. Right?

12 **A** Yes, that's possible.

13 **Q** Uh-huh. Let's turn to the Facet and Vegas products, as
14 they actually exist.

15 You were shown a thumb drive with copies of a movie.
16 And, you would agree that in the Facet product, the movie can
17 only be played from whatever drive it's copied to on that one
18 machine. Isn't that true?

19 **A** I'm sorry, Facet or Vegas?

20 **Q** Facet.

21 **A** That's -- yes, I believe that's the correct understanding
22 of Facet. In fact, I don't believe Facet, as I saw it,
23 supports external thumb drives. It would only be from internal
24 hard drives.

25 **Q** It would actually be an internal hard drive, and that

1 could only, then, be played by that machine, as the product
2 exists now?

3 A I believe that's correct, yes.

4 Q And that limitation is enforced by AES, correct?

5 A No. That limitation is enforced by the software, the firm
6 or software running the Facet software enforces that
7 limitation.

8 Q There's a coding process that must be gone through, or a
9 decoding, to be able to play it back on that machine. True?

10 A Are you referring to the decryption of the contents?

11 Q No, I'm talking about the identification of the machine.

12 A Oh, yeah. The software identifies the -- the hardware
13 that it was recorded on. That's correct.

14 Q And, Facet does not store movies to external storage,
15 true?

16 A The prototype I saw did not -- in the testing I was able
17 to do, did not record to external storage.

18 Q And whether they are playable or not playable, it does not
19 store movies to outside external storage. True?

20 A Again, not in the version I saw, no.

21 Q All right. And, it would not play movies from any kind of
22 attached network storage, will it? Facet?

23 A Again, not -- not in the version I saw.

24 Q That's the version that currently exists. Right?

25 A Well, I don't know what currently exists. I know what I

1 saw on the day I was given access to it.

2 Q Now, on Vegas or RealDVD, that's the software
3 implementation that plays on a Windows operating system, right?

4 A Yeah. The version that was released, I believe, played
5 only under Windows.

6 Q And, I believe this was explained to the Court earlier,
7 anyway, but this is where we come to the -- the five authorized
8 players, is with respect to Vegas or RealDVD on a Windows
9 operating system. Isn't that true?

10 A Correct. The -- the five-player limit as it exists today
11 is related to the Vegas product. That's correct.

12 Q And in Vegas, in Vegas, the DVD can be copied in playable
13 form with encryption, it can be -- it can be copied in playable
14 form to a single hard drive. True?

15 A I don't believe that's true.

16 Q It can be copied to the internal hard drive of the PC.
17 Right?

18 A You -- that's one of the places you could copy movies,
19 certainly.

20 Q Or to an external drive, like a thumb drive?

21 A That's correct.

22 Q But not both, you would agree?

23 A I don't know why you couldn't copy it to another external
24 thumb drive.

25 Q Are you talking in playable form? Capable of playback?

1 **A** Yes, I'm talking about the -- if I take the Vegas
2 software, and I take the movie and I store it to a thumb drive
3 on this computer, on Computer A, and I store the movie to a
4 thumb drive, I take that thumb drive away, and I restart the
5 software and I put another thumb drive in, I can copy another
6 copy onto a second thumb drive. And I could do that with a
7 stack of thumb drives.

8 **Q** You say that -- you're testifying that's what it does?

9 **A** In fact, I'm pretty sure I've done it in my testing.

10 **Q** Well, we'll come back and address the product.

11 **A** Okay.

12 **THE COURT:** This is by -- excuse me, this is by
13 virtue of having the DVD in if computer or drive, whatever, and
14 not by virtue of it be of it being on the hard drive, is that
15 correct.

16 **THE WITNESS:** That's correct. And, let me
17 short-circuit a little bit of what I think Mr. Scott is going
18 here, which, in my testing of the product, a version of Vegas
19 which already sees the movie in its library, essentially
20 already on discs that are attached to it while it's running,
21 won't try to make another copy of it because it already sees
22 it. It says, "Oh, that's in my library," so it won't try to
23 make another copy.

24 So if I've copied it to the hard drive, then if I put
25 a fob in and I try to copy it again to my remote, then it

1 wouldn't copy that because it says "Oh, I already have a copy."

2 But if it's not on a hard drive when it starts up,
3 when Vegas starts, it looks around and says, "What, what movies
4 do I have?"

5 **THE COURT:** And it looks at the various drives,
6 whether it be a thumb drive or some other kind of attached
7 drive?

8 **THE WITNESS:** Exactly. And it shows you -- the
9 library. Shows you a nice screen --

10 **THE COURT:** Everything. A through Z.

11 **THE WITNESS:** A through Z, exactly. It looks at
12 whatever, okay, it says, "Oh, here's the movies you have
13 available."

14 So if I copy the movie only to a thumb drive, and
15 then take the thumb drive away, the next time the movie's not
16 there when it rebuilds the library, and now it can copy it to
17 another thumb drive.

18 But if it's on the hard drive, it'll say "Oh, the
19 movie's already there, so therefore I can't copy it again,"
20 just because it would make no sense to copy it again, because
21 it's already in that library on that machine.

22 **BY MR. SCOTT:**

23 **Q** I'm going leave that subject, and we'll come back to it
24 through a technical person?

25 **A** Okay.

1 Q So, that's what you believe happened.

2 A Based on my -- again, I haven't tested this recently. But
3 based on my recollection, I was testing it, that was what it
4 did, yes.

5 Q You're saying you put in multiple thumb drives, and it
6 copied it, a playable copy, each time you did that?

7 A I believe I did, yes.

8 Q And, was that thumb drive then playable to that machine --
9 let's say you put in and copied it to two different thumb
10 drives.

11 A Yes.

12 Q Are you with me?

13 A Yes.

14 Q Having done so, that same machine could play each of those
15 thumb drives.

16 A Yes. That same machine could play each of those thumb
17 drives. That's correct.

18 Q And if there were up to five authorized machines to -- to
19 play on that user's account, you're saying that every one of
20 those could play to each one of those thumb drives?

21 A I -- that should be the net effect. I don't -- I didn't
22 create five copies on five machines, but there's -- based on
23 what I know, I don't see any reason why that shouldn't work.

24 Q Could any of those thumb drives be played outside of the
25 five registered machines?

1 A No. Again, as the software exists today, that those thumb
2 drives will only play on registered -- players registered to
3 that user or registration account.

4 Q I want to go to your knowledge of a different kind of
5 technology that you looked at in connection with the *Reimerdes*,
6 *Corley* case. Do you remember that?

7 A Yes.

8 Q Okay.

9 A Well, it's been nine years, but --

10 Q In broad terms, do you recall that the technology, the
11 DeCSS technology at issue in that case, was one that removes
12 CSS protection from the DVDs?

13 A Yes, that's correct.

14 Q And, it left the movie data from the DVDs unscrambled, in
15 the clear, to be played. Correct?

16 A Yes, it did.

17 Q And in that form, it could be uploaded on the Internet and
18 played by anybody.

19 A Certainly. With any player. Yes.

20 Q With any player, okay. And, here -- now, I take it that
21 the -- in the *Reimerdes*, *Corley* case, the data was all stored
22 in unscrambled decrypted form, too.

23 A The copy that was saved was saved unscrambled, yes. CSS
24 had been removed. Including that last layer in the diagram, I
25 should -- they removed all five layers. Yes.

1 Q I'll be getting there in just a little bit.

2 A Okay.

3 Q And also in the *321 Studios* case, factually, the
4 technology involved there similarly created unscrambled,
5 in-the-clear copies of the movies from DVD.

6 A That's correct, yes.

7 Q And in *321 Studios*, also, the data representing the movie,
8 the A/V data, was stored in unscrambled, unprotected form.

9 A Yeah. If I recall correctly, that's correct.

10 Q And capable of distribution on the Internet, in
11 unscrambled, unprotected form.

12 A Yes.

13 Q Turning though to these products by RealNetworks, you
14 would agree that when either version of the RealDVD product
15 saves a movie from a DVD. It stores the movie content in
16 scrambled form.

17 A It's -- the -- the video content, itself, is still
18 protected with CSS encryption, as well as, obviously, the AES
19 encryption that Real applies as well. Yes.

20 Q Great. Okay. So CSS is still on there, the movie's not
21 been descrambled when it is stored, and AES-128 is added as
22 well.

23 A The CSS encryption is still on there, and AES encryption
24 is added on top.

25 Q Yes. And the keys are stored with encryption, correct?

1 **A** Correct. The -- the keys stored in the .edf file, the
2 disc key is still protected by the master key, and the other
3 keys are still stored encrypted. And then, that set is
4 encrypted with AES. Yes.

5 **Q** And, the products by RealNetworks that you have seen
6 cannot be copied from storage in playable form, can they?

7 **A** The -- yeah, as I discussed earlier, you can copy the
8 data, but the Vegas and in fact Facet, when they see that, they
9 do a software check to compare -- in Vegas's case it checks the
10 hard-drive ID against the drive that the data is on, and if
11 they don't match, it won't play it.

12 And in Facet's case, it checks the machine ID it was
13 stored under, and won't play it. (Inaudible)

14 **Q** It cannot be copied from that hard drive in playable form.

15 **A** Not with the current versions of Vegas and Facet, no.

16 **Q** The products you've seen.

17 **A** The products that I have seen, that's correct.

18 **Q** Okay.

19 **A** Actually, can I amend that answer slightly?

20 **THE COURT:** Excuse me. Does that go to playing on a
21 RealDVD player?

22 **THE WITNESS:** That's correct. So, these copies,
23 the -- the -- the original copies that were made from this DVD
24 require a RealDVD player, obviously, to play.

25 But if you then drag those files to a different hard

1 drive, so drag them from your internal hard drive to an
2 external flash drive, and then try to play it only from the
3 flash drive, Vegas will refuse to play that.

4 But, but I would like to just clarify that the -- to
5 Mr. Scott's question about the versions I've seen, or the --
6 and I don't remember the exact wording of your question, but I
7 want to clarify that the software I saw running does not enable
8 this, but clearly, in the documentation, Real has thought about
9 and anticipated playing from other mechanisms as well.

10 **BY MR. SCOTT:**

11 **Q** In the documentation that you've seen, do you know what
12 conditions or thoughts they have for how that might occur?

13 **A** So, one example was the diagram that came up earlier,
14 where they were talking about roadmap versions where, for
15 example, the Facet box would play not just from its internal
16 hard drive, but also from network-attached storage, for
17 example.

18 **Q** I want to -- and those are not the implementations you've
19 seen; those are just what you have read in the papers?

20 **A** Again, the running versions of software I've seen, I want
21 to be very clear, only play under the -- the tightly-controlled
22 circumstances we've discussed. I'm talking now about the
23 documentation and the design discussions around other future
24 capabilities or other potential capabilities of the software.

25 **Q** Sort of a technological capability, if that decision were

1 made?

2 **A** Absolutely. That require a business decision to do that.
3 Correct.

4 **Q** And permitted by the Court.

5 **A** It's a whole different -- way beyond my pay grade.

6 **Q** I want to turn to this diagram.

7 **MR. SCOTT:** Your Honor, do you want me to continue or
8 -- I'm changing subjects.

9 **THE COURT:** That's fine. That's fine.

10 **MR. SCOTT:** Good.

11 **THE COURT:** I don't hear stomachs growling, so -- we
12 will be fine for a while.

13 **BY MR. SCOTT:**

14 **Q** I want to look at this Slide 1 of yours, with the five
15 protections of which you say four were removed by RealDVD. Are
16 you in context with me?

17 **A** I am.

18 **Q** Okay. And I won't put it back on the screen.

19 **MR. SCOTT:** Your Honor, do you have a physical copy
20 of this?

21 **THE COURT:** I don't know if I have a physical copy,
22 but I can see the one you have, and I have --

23 **MR. SINGLA:** Your Honor, we provided a copy.

24 **MR. SCOTT:** I can, I guess, advance up here where
25 it's easily seen.

1 **THE COURT:** Thank you.

2 **BY MR. SCOTT:**

3 **Q** Now, just for clarity here, No. 1 is:

4 "DVD Drive locks and will not access
5 the encrypted files."

6 That happens because the DVD drive is in use, to play
7 back the DVD. Right?

8 **A** I'm sorry, I don't follow the question. Can you rephrase
9 that or something? I'm not --

10 **Q** If the movie is being played back from hard drive, the DVD
11 drive is not being used. Correct?

12 **A** Well, the -- if you're -- are you asking me what CSS
13 specifications say about that?

14 **Q** No, no, I'm asking about what you are describing here
15 (Indicating), on the right-hand side: "Hard drive does not lock
16 to prevent access."

17 Do you see that?

18 **A** Okay, yes.

19 **Q** That's because the drive is not being used in playback
20 from hard drive. The disc drive is not being used.

21 **A** Your -- well, okay, yeah, I admit the DVD and the DVD
22 drive is clearly not being used when the movie's being played
23 back from the hard drive.

24 **Q** Yeah. Yes. And, now, RealDVD, in either version, has
25 done the process in Step One of inserting a DVD, locking the

1 hard drive, and going through, then, the authentication process
2 in Step Two.

3 It's done that, hasn't it?

4 **A** Not at the point where you're playing it back from the
5 hard drive.

6 **Q** It's done that, it did that originally when it first
7 inserted the DVD disc to access the data. Correct?

8 **A** When it created the copy, it wrote to the hard drive. It
9 did that. But at the point where it's playing it back from the
10 hard drive, it's not performing any of those functions.

11 **Q** Mr. Schumann, does your little chart here of five steps, I
12 mean, does this reflect anything more than the fact that --
13 that in one instance on the left, the movie is being played
14 from the disc in the drive, and on the right it's being played
15 from hard drive?

16 **A** It reflects that the -- it seems -- your comment seems to
17 be missing the core point, which is that when it's being played
18 back from the hard drive, all of those protections afforded by
19 the requirements and the operations on the left side no longer
20 exist in the system. They've been removed.

21 **Q** We're going to protections in one second.

22 Actually, I think you testified that for playback --
23 get this right -- let me go to --

24 One thing you did tell us about this little chart
25 here is that in RealDVD, Real maintains the CSS encryption when

1 stored to hard drive. Correct?

2 **A** Yes. The copy stored on the hard drive has the CSS
3 encryption still on it, and in fact, adds a level of AES
4 encryption on top of that. That's correct.

5 **Q** Yes. And, in doing your work for this case, Mr. Schumann,
6 have you made any comparison of the security of a movie on a
7 DVD in a regular player with the security of that same movie
8 when saved to RealDVD with AES encryption? Have you made that
9 comparison?

10 **A** I've spent some time thinking about the comparison, in the
11 context of the security environment. And I think I was asked
12 some questions in my deposition around it, as well.

13 **Q** Do you remember that you told us there that you -- Let me
14 ask it straight up. You did testify in your deposition, isn't
15 it true, that you have no opinion whether RealDVD is more or
16 less secure than a regular DVD player like Windows?

17 **A** I'm sorry, can you show me in my deposition? I'm not sure
18 I totally understand your question, so perhaps it will help me
19 understand.

20 **Q** Procedurally, I need to just ask you the question first.

21 **A** Okay. Can you repeat the question?

22 **Q** Yeah, happy to. Happy to.

23 Have you made any comparison or formed any opinion
24 whether RealDVD is more secure or less secure than a regular
25 DVD player?

1 **A** During playback of a -- in the process of providing
2 playback from a DVD?

3 **Q** Security for the movie.

4 **MR. SINGLA:** Objection. Vague, Your Honor.

5 **THE COURT:** Objection is overruled. You may answer.

6 **THE WITNESS:** So, I'm not trying to evade here, but
7 there are three or four different things involved here.

8 One is the question of what CSS, the specification,
9 the license require implementation to do in order to protect
10 the movie and the keys and all the other things. And that
11 includes a requirement on a player during playback.

12 There's, I think, a different question in here,
13 related to is the protection as a movie is stored by Real on
14 the hard drive more or less secure, theoretically, than how
15 it's stored on the DVD.

16 And, I guess -- do you want me to take those in
17 order? What exactly are you asking? I'm sorry.

18 **THE COURT:** I think you need to rephrase the
19 question.

20 **MR. SCOTT:** Yes.

21 **BY MR. SCOTT:**

22 **Q** Would you agree -- no. Is it right that you do it not
23 have an opinion whether RealDVD is more or less secure than any
24 other DVD software player in RealDVD's operating form?

25 **A** In -- in the form where RealDVD is playing directly from

1 the DVD and not storing to a hard drive, I think I would agree
2 with that statement, that I haven't -- I didn't look in-depth
3 at RealDVD and how they protect the keys and memory as they're
4 actually operating only during playback. In fact, some of the
5 software we didn't have source code, so you couldn't look at
6 it.

7 But whether or not it's -- the fact that it stores
8 the movie to the hard drive? I think I do have an opinion that
9 it's significantly less secure than a regular DVD player,
10 because they don't store the movie to the hard drive.

11 Q In a regular DVD player, the movie is protected by CSS,
12 correct?

13 A That's correct. And, well, from the CSS protection, yes.
14 Certainly CSS describes their protection mechanism. That's
15 correct.

16 Q Would you agree that CSS has been significantly weakened
17 over the last ten years?

18 A Can you describe "weakened"? In what sense?

19 Q Do you remember using that term in your deposition?

20 A I don't remember using exactly those words, but --

21 Q Is it true, is it true that the algorithm for CSS has been
22 available on the Internet for the last ten years?

23 A Yes. Certainly, the algorithm for the -- the encryption
24 algorithm, and certainly some of the keys have been available
25 on the Internet, yes.

1 Q Let's talk about this "some of the keys." Some of the
2 master keys for CSS have been available on the Internet for the
3 last ten years. Right?

4 A I believe that same is true, yes.

5 Q Uh-huh. Some of the keys. Would you agree that it takes
6 one master key to open all the DVDs?

7 A So, it -- in the CSS system --

8 Q That's my question. CSS.

9 A I understand that. In the CSS system, as designed, it
10 takes one master key to open or unlock all of the discs that
11 were published up until the time that key became known.

12 Q And so the Court hears this, in fact, there are a number
13 of master keys for CSS.

14 A That's correct. There's a set of 400 or something.

15 Q And the way the industry works is that -- is that DVD CCA
16 will give a key or two keys to a manufacturer to use.

17 A That's definitely correct, yes. My understanding.

18 Q Which then will work for all DVDs.

19 A Correct. So the -- the disc keys are protected by the
20 master keys, which is in fact the set of keys. And the reason
21 they do that is security has a concept of revocation. So,
22 everybody assumes all security systems will be broken. That's
23 kind of a core design principle when you are creating a
24 security system.

25 And what gets broken typically is the key management

1 system, somebody loses a key. And the question becomes, what
2 happens when the key is lost? Okay? And, so, "revocation" is
3 the term used to describe the process that happens when a key
4 is lost.

5 So, the CSS specification had a revocation mechanism
6 that said, "Okay, you know, you, Manufacturer A lost your key,
7 therefore we have to stop using that key, and now we're going
8 to give you a new key. You have to fix your software so it
9 can't get gotten again, and we'll give you a new key."

10 And then for, obviously, the movies that have already
11 been published, you can't go back and change the bits that are
12 on the disc, so you can't fix those. But going forward, what
13 they do is they just then would -- the concept was that they
14 would not encrypt the disc key with that set of master keys
15 that are lost. Okay.

16 So, and, and again, can I take my indulgence with a
17 short analogy? Okay? It's the equivalent of having realtor
18 locks on the door of a house for sale. Right? In CSS, there's
19 a realtor lock system, and there's 400 different keys.

20 And when the realtor loses his key, the locks are
21 modified so that the realtor can no enter -- you can't use
22 those keys in new locks as they're put on the houses, in the
23 process. And that's the process of revocation, which I believe
24 we're getting at here.

25 **THE COURT:** And when you're talking about

1 manufacturers, you're talking about manufacturers of the
2 software that would operate on these various systems? Or the
3 player? For the players?

4 **THE WITNESS:** Absolutely. Both the software and the
5 hardware players.

6 **THE COURT:** And the hardware.

7 **THE WITNESS:** That's correct.

8 **BY MR. SCOTT:**

9 **Q** And, and the -- what's happened ten years ago is that some
10 of the master keys are out there in the public domain, and have
11 been for a long time.

12 **A** That's absolutely correct.

13 **Q** And, those master keys, you just need one to make it work,
14 right?

15 **A** Again, by -- by the design of the system, there is this
16 revocation mechanism that exists, that in theory you could,
17 going forward, not use them.

18 **Q** Uh-huh. Have the -- have the keys that are out in the
19 public domain, have they all been revoked?

20 **A** I believe they have not been revoked.

21 **Q** Have not been revoked.

22 **A** That's correct.

23 **Q** And, if a hacker has one of those keys available from the
24 Internet, one of those master keys, bus key encryption doesn't
25 do you much good either, does it?

1 A That's actually not true at all, because --

2 Q Let me ask you this question. The -- the hacker who has
3 one master key can just pretend that he's an authorized
4 recipient, and negotiate the disc -- the bus keys with the disc
5 drive, can't he?

6 A So, the -- the software created by the hacker that
7 implements the algorithms could certainly do that, yes.

8 Q Not could; that's what's being done, isn't it?

9 A That's essentially what the DeCSS program did that I
10 testified about nine years ago, did exactly that. Yes.

11 Q So, that is the -- that is the story about key management
12 for CSS as it currently exists in the real world, isn't it?

13 A I'm not sure I understand your word "story," but --

14 Q I'm sorry, bad question. The algorithm's public,
15 unrevoked master keys are public, and the software for anyone
16 with one of those master keys to negotiate bus keys, all that's
17 out in the public domain right now.

18 A I hesitate to use the word "public domain," because it's
19 got legal connotations that I'm probably not qualified to make
20 commentary on.

21 Q I agree. And I did not mean it that way.

22 It's on the Internet.

23 A I agree that there's certainly software out there that
24 implements those things, and there are documents out there that
25 describe those things. I believe that's true.

1 Q Have you studied the strength of the AES-128 encryption
2 system?

3 A I am well aware of AES as an encryption algorithm, yes,
4 through my work.

5 Q Do you realize it's one of the highest-security forms of
6 encryption used in the commercial world today?

7 A I absolutely agree. AES is probably the strongest cipher
8 that's known out there today, or among the strongest ciphers,
9 that's correct.

10 Q And, nothing in the CSS specs requires Real Networks to
11 use it?

12 A No. There's definitely nothing that anticipates why you
13 would want to use it, but there's also nothing that tells Real
14 to use it. That's correct.

15 Q Uh-huh. And, would you agree, is it a fair
16 characterization, Mr. Schumann, that AES ensures that a hacker
17 or other third party cannot play a copy of the movie?

18 A No, I wouldn't agree to that characterization.

19 MR. SCOTT: I think probably the expert report was
20 provided by Mr. Singla, Your Honor.

21 THE COURT: Yes.

22 MR. SCOTT: This is the principle expert. I think
23 there was the expert report, the rebuttal, and a deposition.

24 And I'm going to the expert report, which is
25 Mr. Singla's first tab.

1 **THE COURT:** Yes. And which page is that, that you
2 are referring to?

3 **MR. SCOTT:** Let me get to my note here. I'm
4 referring to -- I have a note, by paragraph number. I'm
5 looking at Paragraph 41, which is on Page 8.

6 **THE WITNESS:** Page 8.

7 **BY MR. SCOTT:**

8 **Q** Yes. And, let me -- this is your report, isn't it, sir?

9 **A** Yes, this appears to be my report, yes.

10 **Q** In Paragraph 41, do you write (As read):

11 "The resulting copy, although it has
12 been reencrypted using Real Networks AES
13 encryption (which ensures no third-party
14 players can play the copied movies) is a
15 bit-for-bit copy of all the readable
16 sectors of files that Vegas copies..."

17 And it continues. Did you write that, sir?

18 **A** Yes, I did.

19 **Q** Would you turn two pages forward, to Paragraph 51.

20 (Request complied with by the Witness)

21 **Q** In Paragraph 51, do you repeat your statement, that:

22 "Real's AES encryption ensures no
23 third-party players can play the copied
24 movies"?

25 **A** Absolutely. But realize, this is in the normal operation

1 of Real's AES system. This does not assume that Real's key
2 management has been hacked.

3 This is the same as saying that CSS ensures that no
4 non-CSS player can play the movies. It's the same statement.
5 Same effective statement.

6 **Q** Well, you're saying that it assumes that AES has not been
7 cracked.

8 **A** No, it assumes that Real's key management has not been
9 hacked -- you --the odds that somebody would hack AES? If
10 AES -- if the cipher of AES gets hacked, the Federal Government
11 has a big problem.

12 The issue in almost every system, as I discussed
13 earlier, is not -- cipher strength is an issue, of course, but
14 in today's world the ciphers are so powerful, the issue is all
15 about key management.

16 What do you do with the keys? Do you leave them
17 under the mat? Or do you put them in lockboxes, or do you put
18 them in safe deposit boxes? Because the doors are all made of
19 titanium today.

20 **MR. SCOTT:** Your Honor, I have a little bit of time I
21 need to spend on CSS. I would propose doing that after the
22 lunch break.

23 I can continue now, if you prefer it.

24 **THE COURT:** That's fine. And how long, how long do
25 you think you're still going to need?

1 **MR. SCOTT:** I think I'm at about 15 to 20 minutes.
2 Not terribly long.

3 **THE COURT:** Okay, fine. Then we will take -- let's
4 see, can we come back here at 1:45?

5 **MR. SCOTT:** Whatever you want, Your Honor. I'm going
6 to be here, so --

7 Okay. Well, we'll all have to be here then, right?
8 1:45. Okay?

9 **MR. SCOTT:** Not going to Denver soon.

10 **THE COURT:** Okay. You may step down, and we will see
11 you at the close of the recess. Thank you.

12 **THE WITNESS:** Thank you, Your Honor.

13 (Recess taken from 12:58 to 1:51 p.m.)
14
15
16
17
18
19
20
21
22
23
24
25

PROCEEDINGS

P R O C E E D I N G S

APRIL 28, 2009

1:51 P.M.

THE COURT: I trust you had some lunch?

MR. SCOTT: I did, Your Honor. It was quite good.

THE COURT: Didn't give you much time, did we?

MR. SCOTT: I have a bad habit of holding my food, so
it serves me well in this business.

THE COURT: Okay.

MR. SCOTT: Thank you.

THE COURT: You may continue.

CROSS EXAMINATION (RESUMED)

BY MR. SCOTT:

Q. Mr. Schumann, I want to go back for a few moments to the
question of how RealDVD operates -- and not long, because we
spent time on it this morning -- and specifically focus on
Vegas.

And I'm having in mind the demo that you did with
Mr. Singla with the, I think you said, seven movies on the
thumb drive.

A. Yes, correct.

Q. If you have a movie DVD and the Vegas version of RealDVD,
you can then copy -- make a copy, a playable copy of the DVD to
a disc like a thumb drive, correct?

A. Uhm, yeah. Again, playable, obviously, with the Real

1 software.

2 Q. Yes, playable with the Real software?

3 A. Yes.

4 Q. And under current technology, from the DVD itself,
5 other -- other PCs with Vegas, with RealDVD, could also make a
6 copy of that DVD, correct, a playable copy?

7 A. That's correct, yes.

8 Q. And that's because they don't have any unique identifiers
9 at this point in time?

10 A. That's correct.

11 Q. Can't be identified as a DVD that's already been copied?

12 A. Uhm, not -- I don't know any obvious mechanism that could
13 be used, no.

14 Q. Now, I want to set the DVD aside, and think of the thumb
15 drive on which you've made a copy of the movie.

16 Would you agree that you cannot make a playable copy
17 of the movie from the thumb drive?

18 A. So, if I'm taking a movie that's already been copied from
19 the DVD to the thumb drive --

20 Q. Correct.

21 A. -- and then further copy it from the thumb drive to
22 another thumb drive or the hard drive?

23 Q. Yes. For example, a copy of the copy.

24 A. Yeah, the copy of the copy, again, with today's software,
25 the running software cannot -- it's not playable. That's

1 correct.

2 Q. It is only from the original DVD that the copy -- the
3 playable copy can be made?

4 A. That's correct, yes.

5 Q. And, for example, in the demo you had the thumb drive
6 containing movies. You plugged it into your PC. Do you recall
7 that?

8 A. Yes, correct.

9 Q. Again -- and then a listing of movies popped up on your
10 screen, as far as I could tell from where I was sitting. Is
11 that right?

12 A. Yeah. It was the directory structure.

13 Q. The directory showed it. And then you -- you did a -- a
14 drag and drop of the copy from the thumb drive into the hard
15 drive. And that was a process that was running when you took
16 your seat. Do you remember that?

17 A. Uhm, yeah. I don't know if it was still running, but kind
18 of left it running. Didn't want to take the time to stop it,
19 but, yes.

20 Q. In fact, by that process you would not actually make a
21 playable copy of the movie by taking the copy from the thumb
22 drive and dropping it back into -- into a computer hard drive,
23 would you?

24 A. Yeah, again, correct. Absolutely. So that the copy
25 that's made is not playable with the current Vegas software,

1 would identify that it was a different drive than where it was
2 originally copied. And the logic would stop the playback.
3 That's correct.

4 Q. All right. And so from the thumb drive itself, bearing a
5 copy of the DVD, no playable copy can be made under current
6 technology to any other -- any other device, no copy of the
7 copy, be it a hard drive or a thumb drive?

8 A. I'm not sure I understand the current technology. The
9 software as it's running today --

10 Q. As you've seen it.

11 A. -- doesn't allow the playback. Certainly technologically
12 possible to do so, but software does not do it today.

13 Q. Any playable copy must come from the original DVD?

14 A. Exactly. In the versions that exist today, yes.

15 Q. Now, I want to return to your chart showing various
16 security features as you described them of CSS, okay.

17 And I won't spend long on CSS, but I -- because you
18 didn't spend long on it. But I want to -- I want to talk a
19 little bit about what's on this chart.

20 On this chart you actually show the operation of a --
21 of DVD playback within the PC, correct? You show a PC on the
22 right-hand side?

23 A. Uhm, yes. Again, this is just to clarify, this is largely
24 a chart that's been used in this case before. And, so, as I
25 prepared how to discuss, it seemed to make sense to basically

1 try to use the same documents so we weren't introducing yet
2 another set of pictures into the equation.

3 Q. Sir, I'm not yet criticizing.

4 A. It's clearly the chart I testified to, yes.

5 Q. My point is different, that here you list -- there's an
6 external drive, there's DVD authentication, DVD -- there's bus
7 encryption. Do you see that?

8 A. Yes.

9 Q. Now, you recognized that under the CSS specifications
10 there's another class of devices besides the PC environment.
11 There are those that are called the DVD player?

12 A. So, I'm sorry, to come back to your other question, you
13 were trying to ask: Does that chart illustrate playback in a
14 PC or a computer environment?

15 Q. Yes.

16 A. Yes, it does.

17 Q. Okay. And you recognize in the CSS specifications there's
18 another class of devices called DVD players?

19 A. Yes, there are, certainly.

20 Q. And the DVD players, in fact, are ones that do not involve
21 authentication or bus encryption, right?

22 A. Uhm, that's correct. Inside of the DVD player there's no
23 need to have the authentication or the bus encryption.

24 Q. I just want to focus, for a few minutes, on these other
25 players, for context.

1 A. Uh-huh.

2 Q. You would agree that interpretation of a specification
3 like CSS should look at the specifications in their entirety?

4 A. Uhm, I would agree with that, yes.

5 Q. Now, in this board that the Court has seen previously --

6 MR. MICK: Your Honor, we've got to be careful with
7 the board, I'm afraid.

8 THE COURT: Let's just direct it this way, so it can
9 only be seen.

10 MR. SCOTT: Sorry, Steve. Okay. Is that angled
11 about right?

12 MR. MICK: Fine as is.

13 MR. SCOTT: Yeah.

14 BY MR. SCOTT:

15 Q. Now, this -- this device, sir, is playback on a PC; is
16 that right?

17 A. So, yes, this describes playback on a PC in the context of
18 PC as it's used in the DVD specification -- or the CSS
19 specification, correct, yes.

20 MR. SCOTT: I think it may be helpful, for just a
21 moment I'm going to the general specifications. And I believe
22 they should be taken off of the public screen. I will just be
23 there for a moment.

24 THE COURT: Take it off.

25 MR. SCOTT: It's a page that's been discussed before.

1 **THE COURT:** Yes.

2 **MR. SCOTT:** That's a pretty generalized page, Your
3 Honor.

4 **THE COURT:** That's fine.

5 **MR. SCOTT:** May I proceed now?

6 **THE COURT:** You may.

7 **MR. SCOTT:** So I know Your Honor has your own set.

8 **THE COURT:** Yes, I do.

9 **MR. SCOTT:** I'm going to advance a few questions I
10 wanted to ask, just so you have context, before I spend a
11 little time on some pictures.

12 **THE COURT:** Yes.

13 **MR. SCOTT:** Okay.

14 **BY MR. SCOTT:**

15 **Q.** We're looking at -- at least it's identified as Chasen
16 Exhibit 513. I think it has various names. But it's the
17 general specs.

18 And, in particular, on page 1, GEN1, and what the
19 Court has seen previously, Mr. Schumann, but I want to discuss
20 at this moment, the Court has seen the language "to prevent --
21 "The objective: To prevent digital-to-digital copying in a
22 personal computer environment."

23 And I want to discuss with you the last part of that,
24 possibly to be of assistance to the Court in interpreting the
25 first part, which we've already discussed through other

1 witnesses.

2 **MR. SCOTT:** Okay. That's the context, Your Honor.

3 **BY MR. SCOTT:**

4 **Q.** Now, the reference to the personal computer environment
5 there, you'd acknowledge, is in contrast to the other set of
6 devices called "DVD players," that are also covered by the
7 specifications?

8 **A.** Uhm, I think in general I agree with that. But you need
9 to be careful here because the specification -- this is not a
10 defined term in here. And there are other sections that use
11 defined terms to make much clearer distinctions about what
12 identifies the different types of devices.

13 **Q.** If we go, for example, to page GEN19 and GEN20, on 19
14 there's the architecture of a DVD video player. Are you with
15 me, sir?

16 **A.** I am, yes.

17 **Q.** And this, for example, describes, in terms of
18 descrambling, certain functions that are on the page. I will
19 not review them in a public. There's no need for me to go
20 through that, since the Court has that. But you see there are
21 certain steps described there, and then a reference to Figure
22 3. Is that true?

23 **A.** That's correct. Along with the rest of the paragraph, the
24 beginning of that section.

25 **Q.** Yes. I'm just not reading something publicly unless I

1 need to.

2 **A.** I agree. But that paragraph is important in the analysis.

3 **THE COURT:** You're talking about the paragraph -- at
4 2.4, paragraphs 1, 2 and 3?

5 **THE WITNESS:** Yes. In fact, the intro paragraph
6 there is also important.

7 **MR. SCOTT:** Your Honor, may I --

8 **THE COURT:** Proceed.

9 **MR. SCOTT:** You have them, so I think that --

10 **THE COURT:** Yes, I have them.

11 **MR. SCOTT:** If there's something he wishes to comment
12 on, I'm happy to have him do so.

13 **THE COURT:** That's fine. I'm looking at them. I
14 wanted to make sure we are talking about the same thing.

15 **BY MR. SCOTT:**

16 **Q.** What I really want to do is progress to the graph on the
17 next page, which is different from the one that's in the book,
18 Foam Core.

19 Would you agree, Mr. Schumann, that Figure 3 is an
20 architectural diagram of the DVD video player system?

21 **A.** Correct. It is missing, again, the bus authentication and
22 the bus encryption components. That's correct.

23 **Q.** That's what I wanted to highlight here.

24 **MR. SCOTT:** Because, Your Honor, I'm going between
25 the screen and the board.

1 BY MR. SCOTT:

2 Q. Mr. Schumann, would you agree that the portion that I'm
3 marking here in red is what is present in a PC environment but
4 is absent in the DVD player, in terms of the architecture?

5 A. I think I disagree with that a little bit. It's clearly
6 absent in a DVD player, which is a defined term in the
7 specification.

8 And by the other parts of the specification it is
9 required if you are not a DVD player. Generally, that's --
10 could be considered a PC. But there are -- the spec doesn't
11 define things -- specs doesn't say that a DVD player is not a
12 PC. It says anything that is not a DVD player is effectively
13 a, quote, PC.

14 Q. Let's see if I can --

15 A. I'm not sure that was clear.

16 Q. Let's work on this a little bit.

17 A. Yeah.

18 Q. We were understanding the specs the same way.

19 A. Okay.

20 Q. Just try to clarify.

21 In the definitions, the DVD player -- which is the
22 other diagram, not this one -- DVD player is defined as one
23 that does not require the bus authentication or the bus key
24 encryption procedure?

25 A. That's correct.

1 Q. And then the residual are the other ones that do require
2 it?

3 A. Actually, let me -- can you read back that first question?
4 Because I'm not sure the wording is exactly correct.

5 THE COURT: The last question?

6 THE WITNESS: Yeah, the previous one that I said yes
7 to.

8 MR. SCOTT: Whatever you wish.

9 THE COURT: Can you go back and read the question
10 preceding the last question, please.

11 (The record was read by the reporter as follows:

12 "QUESTION: In the definitions, the DVD
13 player -- which is the other diagram, not
14 this one -- DVD player is defined as one that
15 does not require the bus authentication or
16 the bus key encryption procedure?")

17 THE WITNESS: Uhm, no, that's actually not accurate,
18 according to the specifications. That wording is not accurate.
19 It's different.

20 BY MR. SCOTT:

21 Q. Do you want to correct my wording?

22 A. The wording of your question is accurate, but that is not
23 what the spec says, is what I'm questioning, yes.

24 Q. You'd agree that, as defined, the DVD player in the CSS
25 specifications does not involve bus authentication?

1 **A.** I agree that a DVD player, as defined in the CSS
2 specifications, does not require bus authentication and
3 encryption.

4 What I do not agree with is that a DVD player is
5 defined as something that does not require that. Different
6 issue.

7 **Q.** Okay. I'll go with the first.

8 **A.** Okay.

9 **Q.** So, now, that takes us, then, back to the Figure 3 on the
10 screen, which is -- which is the video player does not show any
11 architecture for bus authentication or bus key encryption,
12 right?

13 **A.** That's actually correct, because the player does not need
14 to have those technologies.

15 **Q.** Now, in fact, the video player can have a hard drive,
16 right?

17 **A.** Uhm, there's -- I'm sorry, according to the
18 specifications?

19 **Q.** A video player can have a hard drive?

20 **A.** In what context? Give me a little context here.

21 **Q.** Have you ever known of a video player that has hard
22 drives?

23 **MR. SINGLA:** Objection. Vague as to DVD "video
24 player."

25 **THE WITNESS:** CSS video player or --

1 **THE COURT:** What do you mean by a "video player"?

2 **BY MR. SCOTT:**

3 **Q.** A regular video playback machine that's not in the PC
4 environment does not do bus authentication, does not do bus
5 encryption.

6 **A.** You mean like a TiVo box? I don't understand. Are you
7 talking about a CSS video player, or are you talking --

8 **Q.** Yes, sure.

9 **A.** I'm trying to understand context. I'm sorry.

10 **Q.** Are there CSS video players that have hard drives?

11 **A.** Uhm, I'm -- I have no personal knowledge of a CSS video
12 player that has a hard drive as -- again, using video players
13 as defined in the specifications, to my knowledge.

14 At least not that you see in relationship to CSS
15 content. It's -- it's possible to have a -- a device that
16 might be a DVD player and also have a hard drive. That's
17 permitted in the specifications, provided that those are
18 different functions that happen to reside in the same box.

19 **Q.** So the CSS video player can have a hard drive residing in
20 the same box?

21 **A.** Yes. So, for example, let's say I made an integrated TiVo
22 box with a DVD player. I could make one box that has both of
23 those functions. The spec would allow that. Wouldn't allow
24 those functions to inter-operate with each other, but would
25 certainly allow those two functions to exist on one box,

1 certainly.

2 Q. And you, in fact, know there are such devices?

3 A. Uhm, again, the devices that separate function, that's
4 certainly possible, yes.

5 Q. Going back to our --

6 THE COURT: Well, would you go back to paragraph 2.4
7 and that introductory paragraph --

8 THE WITNESS: Yes.

9 THE COURT: -- and complete the sentence by saying
10 "without standardized digital interface."

11 THE WITNESS: Correct.

12 THE COURT: What does that mean?

13 THE WITNESS: So, you've cut to the core of the
14 definition of the DVD video player.

15 So, what that means is that standardized digital
16 interface refers to, essentially, these buses these,
17 user-accessible buses.

18 THE COURT: All we've been talking about.

19 THE WITNESS: All we've been talking about. Exactly.

20 And that's exactly why in those environments, because
21 they are standardized digital interfaces that you can easily
22 snoop and watch on, right, that's why the spec requires the
23 authentication and the additional protection measures because
24 they are, in fact, standardized.

25 So what the specs says is, okay, if you want to build

1 a player that doesn't use those standardized interfaces, and
2 all it's going to do is, you know, play back DVDs coming off a
3 drive but not a -- a custom drive, right, with special
4 electrical interfaces, then you may make such a device and not
5 include the authentication mechanisms.

6 But it's tied explicitly to this standardized digital
7 interface, yes.

8 **BY MR. SCOTT:**

9 **Q.** Then, going back to the page concerning -- on Section 1.2,
10 the page talking about the objectives of the video content
11 system then are referring to the personal computer environment
12 in subsection 2.

13 My question to you, is it your understanding that the
14 reason they focus on the PC environment is because of those
15 accessible buses that exist in a PC?

16 **A.** Again, so, at the time this spec was written, that was
17 the -- if you look back in context, this was written 15 years
18 ago now, okay.

19 And the environment at which these types of drives
20 with standardized interface would be used was typically in a PC
21 environment because it was, in fact, cheaper to build the
22 custom, specialized drives, because they were cheaper to make.
23 And that's what you put in a DVD player, which is cheap.

24 So the spec uses the term "PC." In fact, in today's
25 world there are many DVD players that use the same DVD-ROM

1 drives as are in PCs, because I think they are actually cheaper
2 today than trying to make a different type of drive, just
3 because the volume of manufacturing is so high in the PC
4 environment.

5 So, in fact, there are many, quote, DVD players that
6 would appear to me and you as a DVD player, that in the
7 parlance of a specification are, in fact, personal computers,
8 in that they use these standardized interfaces and, in fact, do
9 these operations behind the scenes.

10 **Q.** And when you look at page GEN1 in front of you there,
11 where it says, "In support of objective two," this is focusing
12 on the bus authentication and bus encryption that you've
13 described as being part of the architecture for the PC
14 environment specifically, correct?

15 **A.** The architecture where a drive -- a DVD-ROM drive, this is
16 a defined term, the DVD drive is a defined term, which is a
17 drive with a standardized -- a device capable of reading a DVD
18 disc that has a standardized interface. That's what that is
19 referring to, devices that incorporate that.

20 Also uses the term "PC." But the critical
21 terminology, in the context of the spec, is this "DVD video,"
22 "DVD drive," and "DVD-ROM drive" terminology.

23 **Q.** Here is my last question. Just in terms of what's on this
24 page, the discussion of the -- the discussion here of bus
25 authentication and bus encryption is the difference between the

1 personal computer environment within the CSS specs and the DVD
2 drive environment; isn't that true?

3 A. Uhm, the --

4 Q. DVD player. Pardon me. DVD player?

5 A. Uhm, yes. Effectively so, because if you -- but, again,
6 technically, it's a question of whether or not you use this
7 standardized interface on the device that reads the actual DVD
8 disc. That's the critical differentiator that defines the
9 terms that have meaning in this paragraph, yes.

10 Q. Let's be clear. Appreciate the explanation. Let's be
11 clear for the Court's sake here.

12 In looking at this page, the focus we see in the
13 yellow paragraphs, on bus authentication and bus encryption,
14 those two subjects, those are precisely the difference in -- in
15 the CSS specs between, on the one hand, the PC environment and,
16 on the other, the DVD player environment?

17 A. Uhm, I think they're an effective difference. It's not a
18 definition -- the definition of the difference is elsewhere.

19 This talks about that when you are using one of these
20 standardized interfaces, then you have to use bus encryption
21 authentication. That's clearly what this describes.

22 Q. Which you do not have to use in the DVD player
23 environment?

24 A. If you are not using, again, a DVD-ROM drive. Again, the
25 player is a device that does not use a standardized interface

1 to pass the data from the disc into any other processing
2 module. I'm sorry, to -- I'm not trying to obfuscate, but the
3 terms matter here.

4 **MR. SCOTT:** That's all I'm going to do with this
5 document, at this time. I don't want to go beyond the scope of
6 your direct.

7 **THE WITNESS:** Okay. Thank you.

8 **MR. SCOTT:** Your Honor, I pass the witness.

9 **THE COURT:** Thank you.

10 Mr. Singla.

11 **MR. SINGLA:** Yes, Your Honor.

12 Just a few questions, Your Honor.

13 **REDIRECT EXAMINATION**

14 **BY MR. SINGLA:**

15 **Q.** So, I was going to ask you about the standardized
16 interfaces, but the Court beat me to it, to explain the
17 difference between DVD player and everything else under the CSS
18 specifications.

19 Facet -- let's start with Vegas.

20 **A.** All right.

21 **Q.** Vegas, under the specifications, is a -- how did it come
22 out in the specification? Does it need to do bus encryption
23 authentication?

24 **A.** Yes. It is a PC in the parlance of the spec, yes.

25 **Q.** It's not a DVD player quote/unquote in the specification

1 terms?

2 A. No, it's not.

3 Q. How about Facet, how does Facet break down?

4 A. Again, in the versions and all the specifications I saw
5 for Facet, it also is a PC device in this parlance.

6 Q. Why do you say that?

7 A. Because the Facet uses standardized -- certainly, the
8 version I took apart, uses standardized DVD-ROMs with --
9 regular PC DVD-ROMs, to read the drives, or read the discs.

10 Q. You took it apart and looked at it?

11 A. Absolutely.

12 Q. Under the hood?

13 A. Yes, I did.

14 Q. And is there a standardized interface there?

15 A. Yes; there is. In fact, I -- just to check, I bought a
16 disc at Fry's -- I think it was Fry's -- and a regular PC disc
17 drive, and actually plugged it in. And it worked just fine and
18 read the disc.

19 Q. So, the Facet box would need to do these steps?

20 A. Absolutely does these steps.

21 Q. And you looked at the source code for Facet?

22 A. Yes, I have.

23 Q. And does the source code for Facet support that it is a
24 quote/unquote PC under the CSS specifications?

25 A. Certainly.

1 Q. Now, the CSS security system is more than -- am I right,
2 from what you spoke this morning -- more than just these two
3 steps, correct?

4 A. Oh, absolutely. These are just one component, again, of
5 the overall security on both.

6 Q. So do DVD players have security requirements that they
7 have to meet, also?

8 A. Absolutely.

9 Q. Okay. Now, Mr. Scott asked you about -- he asked you
10 about the document we saw with the --

11 MR. SINGLA: Could we see Exhibit 232.

12 BY MR. SINGLA:

13 Q. Well, I'll just ask my question. The talk about the
14 different future plans for Facet, do you remember that?

15 A. Correct, yes.

16 Q. When you were answering his questions, I noticed you kept
17 saying that in the running version of RealDVD, there are all
18 these limitations on Vegas and on Facet. Why do you keep
19 saying "running versions"?

20 A. Again, I'm trying to be very precise. In the code and in
21 some of the documentation, for example, there is -- there's the
22 beginning or the work that was under development in what I saw
23 for allowing Facet devices to play back Vegas,
24 content-recorded, saved copy, if you will, with Vegas. So,
25 there's -- the development of code had already begun. There

1 were clear design documents that talked about what would be
2 necessary to do this.

3 But that code development had not been complete. So
4 the box did not do those functions, so I'm trying to be very
5 clear between what I actually saw it do versus what it might be
6 capable of doing.

7 **Q.** So I want to make sure we're understanding what you're
8 saying. In the source code you looked at, you saw code under
9 development for sharing of movies between Vegas and Facet; is
10 that what you're saying?

11 **A.** Correct. So it was Facet code -- code in a Facet tree
12 targeted at enabling playback of movies saved with the Vegas
13 product. That's correct.

14 **Q.** And if that code were finished, at least as you understood
15 it from the code and from the specifications and technical
16 documents you reviewed from Real, what would that allow a
17 consumer to do with the Facet box?

18 **A.** There was an extensive design, significant design document
19 that's associated with this process. And the design was that,
20 essentially, the Facet box would become one -- you could then
21 effectively register the Facet box as one of this group of
22 players registered to the account. So it would kind of look
23 like another Vegas device in the account set.

24 **Q.** So you could start using movies copied with Vegas on a
25 Facet box. Is that the upshot?

1 A. That's correct, yes.

2 Q. And then, finally, Mr. Scott asked you, actually at the
3 very beginning of his examination, about whether the ARccOS.zip
4 file contents had been, quote, used in the Vegas and Facet
5 products. The source code. Do you recall that conversation?

6 A. I do, yes.

7 Q. Now, is it true, from your review of the code and the
8 products, the documents, the depositions, that after they got
9 this ARccOS.zip file and looked at it, that after that they
10 developed technologies to circumvent ARccOS and RipGuard?

11 MR. SCOTT: Objection. Leading, Your Honor.

12 THE COURT: Objection is overruled.

13 You may answer.

14 THE WITNESS: They certainly completed or made
15 progress on the development. There's nothing -- again, I
16 didn't see any record, specific reference, but clearly
17 continued development and completed -- or attempted to complete
18 development, yes.

19 MR. SINGLA: Just one moment, Your Honor.

20 BY MR. SINGLA:

21 Q. Now, I want to make sure we're clear on this.

22 The ARccOS.zip file dates from when? Do you remember
23 when it was circulated at RealNetworks?

24 A. I have to look. I think it was late in 2007, I believe.

25 Q. Late 2007. And when you looked at the products and the

1 code in January of this year --

2 **A.** Yes.

3 **Q.** -- could they circumvent ARccOS and RipGuard?

4 **A.** So, when -- I think I first saw the Vegas product in,
5 probably, December of this year. And, again, absolutely both
6 Vegas and Facet absolutely copy -- some discs today are able to
7 bypass ARccOS and RipGuard on quite a number of discs.

8 There are a few discs left that they are unable to
9 copy at this point, but they can copy a significant number of
10 ARccOS- and RipGuard-protected discs today, yes.

11 **Q.** And from the definitions and documents that you looked at,
12 was there development work going on, on circumventing ARccOS
13 and RipGuard between December 2007, when the ARccOS.zip file
14 was circulated, and December of 2008, when you first looked at
15 Vegas?

16 **A.** There's, essentially, continuous development going on
17 either by trying to write the original routines or by trying to
18 fix the additional problems they found and adding to their
19 skill set in terms of overcoming the different techniques they
20 discovered, yes.

21 **MR. SINGLA:** No further questions, Your Honor.

22 **RECROSS EXAMINATION**

23 **BY MR. MICK:**

24 **Q.** Good afternoon, Mr. Schumann.

25 **A.** Good afternoon.

1 Q. This morning we talked a little bit about my copy of the
2 *Wizard of Oz*. Remember that?

3 A. Yes.

4 Q. And Mr. Scott asked you about whether or not -- well, I
5 think what he said was that it would be possible, in some
6 sense, to place an identifier, a code of some kind, on a DVD.
7 Do you recall that?

8 A. Yes.

9 Q. Whatever code you might want to place on a DVD in the
10 future, would that have any effect on the copy of the *Wizard of*
11 *Oz* that I already own and am holding in my hand?

12 A. No. There's no way to change any of the -- how many
13 billions of DVDs have been pressed, no.

14 Q. So the -- whatever might happen in the future with respect
15 to new versions of RealDVD, it wouldn't have any effect on
16 RealDVD's ability to copy existing DVDs; is that right?

17 A. There would certainly be no additional data on any of
18 those discs that doesn't exist today, that's correct.

19 Q. There was something about Mr. Scott's question that
20 puzzled me, because he seemed to be suggesting that placing an
21 identifier, a code, if you will --

22 THE COURT: Just ask the question. Let's not have
23 the prologue.

24 MR. MICK: Okay.

25

1 BY MR. MICK:

2 Q. Is there already a code on commercial movie DVDs, that is
3 placed there by the studios?

4 A. There are certainly flags that are placed on the DVD, yes.

5 Q. Can you tell me what the CGMS code is, sir?

6 A. CGMS is one of the set of flags and informational codes
7 that is on the DVD. Stands for "Copy Guard Management system,"
8 which is a early copy-detection technology that existed. And
9 these are the bits that describe how to make use of stuff.
10 They convey information about the copy states of content.

11 Q. Is it a 2-bit code?

12 A. Yes, it's a 2-bit code.

13 Q. Placed on sectors throughout the DVDs?

14 A. Yes, it is, among other places.

15 Q. Do all commercial DVDs have the CGMS code?

16 A. Yes, to my knowledge.

17 Q. Do the CSS specifications tell you how to interpret the
18 CGMS code?

19 A. Yes, they certainly do.

20 Q. How do you interpret the CGMS code binary 1, 1?

21 A. That code basically is defined as saying "copy never."

22 THE COURT: Copy what?

23 THE WITNESS: "Copy never."

24 BY MR. MICK:

25 Q. Does "copy never" mean that no copying is permitted?

1 A. The way I understand that phrase, yes.

2 Q. Does the RealDVD program pay any attention to that code,
3 sir?

4 A. Uhm, it copies those codes but doesn't do anything with
5 them.

6 Q. It still makes copies of the movie; is that right?

7 A. Absolutely. And, in fact, makes copies of those codes.

8 Q. So my copy of the *Wizard of Oz*, in fact, already has a
9 code on it, placed by the studios, and RealDVD ignores it and
10 makes a copy anyway; is that right?

11 A. Correct. DVD ignores the contents of those flags, that's
12 correct.

13 MR. MICK: Thank you. Nothing further.

14 THE COURT: Let me ask you a couple of questions.

15 Is there any reason why, if you know -- do you know
16 if there is any reason why the studios or those producing movie
17 DVDs have not gone to using AES encryption?

18 THE WITNESS: So, in fact, they have.

19 The newest technology, Blu-ray, which is kind of the
20 follow-on technology to DVDs, in fact, makes use of the AES
21 encryption algorithms, to protect its content, as well.

22 Again, AES itself as a cipher is, to my knowledge,
23 not broken. The MSA may know how to break it, but for all
24 practical purposes it is unbreakable in today's world.

25 And, in fact, the Blu-ray disc has a much more

1 sophisticated key management system than is on the DVD disc.
2 Even more sophisticated. But even in that environment --
3 again, you crack the keys, not the cipher.

4 So you can't just -- saying it's AES encrypted is
5 saying like I put a titanium door on my house. That's all it
6 tells you. Doesn't tell you whether you left the key under the
7 mat.

8 So it's all about the key protection. And this key
9 protection is really difficult, okay. So Blu-ray, which is now
10 a two-, three-year-old technology, okay, in fact, the keys
11 there have already also been broken. Okay.

12 But in -- in the Blu-ray version, this revocation
13 mechanism is much more -- the original one on CSS was not
14 sophisticated enough, which is why they never used it, to the
15 earlier question of: Have these keys ever been revoked? Okay.
16 Turns out it was not effective because the number of keys was
17 too small, partially, okay, because there were only 400.

18 And so Blu-ray has already been broken. The keys are
19 known. But the revocation mechanism is much more robust. And,
20 in fact, keys have been revoked on a continual basis as they
21 get found. And the hackers have to go find new keys. And it's
22 this cat-and-mouse game in the process.

23 **THE COURT:** Can the Blu-ray disc be played on
24 RealDVD's player?

25 **THE WITNESS:** The RealDVD system does not play

1 Blu-ray discs, at this time, to my knowledge, no.

2 **THE COURT:** And, then, earlier you testified, I think
3 it was about Facet, that while a disc is in playback mode or
4 being played it also can copy the contents; is that correct?

5 **THE WITNESS:** So they -- the product has a mode
6 called "play and save."

7 **THE COURT:** Okay. And then where can you save that
8 to? Do you have to save it to a hard drive? Or do you save it
9 to -- can you save it to some kind of external memory? Or
10 where do you save it?

11 **THE WITNESS:** So, there when you -- when the product
12 does play and save, it actually saves it to the hard drive,
13 same as if you said "save only."

14 But I want to clarify something about how that
15 program works versus what the name would imply, okay.

16 So, when -- when you first put a disc into the Facet
17 box, okay, it actually immediately starts copying the disc.
18 Before you do anything, before even a menu shows up on your
19 screen, it's already starting to copy the disc, okay.

20 And so when you say "play and save," what it actually
21 does is it starts playing from the hard drive. Okay.

22 **THE COURT:** That which it has already saved, then?

23 **THE WITNESS:** Well, that which it has already saved.
24 And, then, if the play goes somewhere that hasn't already been
25 saved -- so it's a pretty sophisticated process, actually.

1 So it's starting the linear save, right. So you're
2 kind of going along. And then if the play causes a jump out
3 here, right, then it will start reading out here, and it will
4 start saving out here (indicating).

5 Okay. But it's always reading ahead of what the
6 player is actually asking for. So, it's always getting further
7 and further. Because it can save much faster than you watch
8 it, okay. So it's always getting further and further ahead.

9 And, so, it has a mechanism to keep track of what you
10 have and haven't filled in. And anytime it goes somewhere
11 that's not filled in, then it starts there and starts filling
12 in. If it jumps to somewhere it's already saved, then it just
13 plays from the hard drive.

14 So it's not -- the impression that might have been
15 left was that, oh, while I happen to be following around all
16 these chains, it saves only exactly where you went.

17 In the case of Facet in this play-and-save mode, it's
18 actually much more -- it plays from the hard drive and happens
19 to skip ahead to where you need to be in case it hasn't gotten
20 there yet.

21 Does that make sense?

22 **THE COURT:** Yes. I understand what you're saying.

23 **THE WITNESS:** Okay. Good.

24 **THE COURT:** Whether technologically it makes sense,
25 I'm not the way to say.

1 **THE WITNESS:** It's actually very smart, if that's
2 what you're trying to accomplish.

3 **THE COURT:** Now, if you remove the disc you still
4 have that saved on your hard drive; is that correct?

5 **THE WITNESS:** Absolutely, yes.

6 **THE COURT:** Can you, then, without the disc, save
7 what's on the hard drive to a thumb drive or an external drive,
8 or some other drive?

9 **THE WITNESS:** So, in the -- the Facet system that I
10 saw, the hard drive was inside the box. So, there I would have
11 to take the cover off of the box in the normal operation. I
12 could hack the box.

13 But assuming I don't do that, I could take the cover
14 off. I could disconnect the hard drive, because it's a hard
15 drive like any other, plug it into my own computer. And then I
16 could read all the data off it. But there's no function inside
17 of the software to copy it, as it exists today.

18 **THE COURT:** I see.

19 So, does it have the capacity on the box itself to,
20 in fact, insert a thumb drive or to essentially have it access
21 directly some other drive?

22 **THE WITNESS:** Yeah, so that the box certainly has a
23 USB connection on it. The USB, the software was set up, the
24 operating system was configured to not recognize the thumb
25 drives. And, so, in the version I saw, it couldn't do that.

1 Changing that would involve just essentially changing
2 a setup configuration parameter in the operating system. And
3 then you would likely be able to do that, yes.

4 **THE COURT:** And if you were able to do that, then you
5 could copy to other external drives or a thumb drive, or
6 whatever?

7 **THE WITNESS:** Yes. But, again, that would involve,
8 at least in the Facet system, the person who controlled that
9 box or configured that box to enable it to do that.

10 **THE COURT:** Yes. But then you could do any number of
11 thumb drives, I --

12 **THE WITNESS:** Absolutely. At that point, exactly.
13 It's wide open, essentially, correct.

14 **THE COURT:** And how difficult is that to do --

15 **THE WITNESS:** Uhm --

16 **THE COURT:** -- under the current circumstances in
17 opening the box up?

18 **THE WITNESS:** And, so, in -- opening the box is real
19 easy. Take four screws off, six screws, and take the cover
20 off.

21 **THE COURT:** Even I might be able to do it?

22 **THE WITNESS:** I'm sure you would be able to do it,
23 Your Honor.

24 **THE COURT:** And from there, what would you have to
25 do? Then you've used the USB drive, then you can access the

1 USB drive?

2 **THE WITNESS:** Uhm, no, then you would -- so, you
3 would need to essentially boot the operating system.

4 So, if you wanted to hack the box, essentially -- so,
5 now that the developers who sold it to you didn't enable that,
6 okay, then you would need to "hack" the device -- use "hack" in
7 quotes here -- to get to kind of a log-in, to enable you to
8 modify the operating system. The device runs Linux, which is
9 used in many systems.

10 Okay. So this type of thing has been done to iPods,
11 to wireless transmission -- you know, Internet wireless
12 devices, to voiceover IT phones. And this is a very common
13 thing.

14 Linux is commonly used in these type of devices. And
15 people who hack into them to get this type of capability is
16 also pretty commonly done. But it would require somebody
17 hacking into the device. As it sits and it's configured by
18 Real, did not enable this capability in the version I saw, just
19 to be clear.

20 **MR. SCOTT:** Your Honor, I don't know if your
21 questions prompt any more questions from Mr. Mick or
22 Mr. Singla, before I do recross.

23 **THE COURT:** I might not give them a chance. They've
24 had their chance. Do you understand that? So now it's your
25 turn.

1 **MR. SCOTT:** I wanted to offer to --

2 **THE COURT:** That's fine. It's not yours to offer,
3 Mr. Scott, I can tell you.

4 (Laughter)

5 **MR. SCOTT:** Your Honor, I certainly know that.
6 That's why I was raising the question.

7 **THE COURT:** That's very gracious of you anyway.

8 **MR. SCOTT:** May I have just a second.

9 **THE COURT:** Yes.

10 **CROSS EXAMINATION**

11 **BY MR. SCOTT:**

12 **Q.** I do want to pick up on the answers that you gave to the
13 Court. And particularly the question about having a Facet box,
14 and if it were reconfigured to do differently than it does now,
15 so that a copy could be made of a movie that's on the Facet
16 hard drive over onto the thumb drive. Are you with me on that
17 one?

18 **A.** I am, yes.

19 **Q.** And even if it's reconfigured to do that, the copy that
20 results on the thumb drive is not playable, is it?

21 **A.** Uhm, again, clearly, there are two issues there. One
22 is --

23 **Q.** Yes.

24 **A.** One is the question of: Will the RealDVD system play at
25 it, recognize it, identify it on the wrong device? Okay. And

1 without changing the software, that's clearly true.

2 The other issue is, and this comes to the question of
3 the last part of the security system design, which is, so, now,
4 if you've been broken -- which is an assumption of every
5 security system I've ever worked on, you will be broken your
6 keys will be made available -- how do you recover? Okay. What
7 can you do once the keys are known?

8 So, if I find the keys, what can I do with that
9 knowledge? Okay.

10 And in the CSS system, to a large degree, the fact
11 that I have the key allows me to now access all this CSS stuff.

12 Similarly, in the Real system, if I get a set of
13 particular -- a small set of global keys that are common to all
14 copies of Facet, once I have the key from one of those, if I've
15 copied that file off, then I could remove the AES encryption
16 and I would just be left with regular CSS content.

17 **Q.** In that answer, I take it that you are -- you are agreeing
18 with me that a copy made from the hard drive of Facet onto a
19 thumb drive is not playable unless somebody breaks the codes;
20 is that right?

21 **A.** In the current -- in the current running version of Facet,
22 it would require a change to Facet to enable that in its normal
23 operation. And, correct, and then only if it was hacked and
24 the keys were lost then you would be in a scenario where
25 anybody could --

1 Q. So when the Court was asking questions -- and you were
2 just answering, I understand.

3 If it's reconfigured so that a copy can be made from
4 the Facet hard drive to a thumb drive, as currently -- which
5 currently configured it does not?

6 A. That's absolutely correct, yes.

7 Q. But even if that were reconfigured to do that, under
8 current technology that would be unplayable unless AES were
9 broken?

10 A. Under the existing Facet implementation, it would play
11 under normal use. And not if AES is broken. Careful to
12 differentiate between the cipher AES and the question of the
13 key handling and the key management?

14 So, what would have to happen is that the keys would
15 have to become known, which, essentially, means you would have
16 to hack or reverse engineer the Real software to find those
17 keys.

18 Q. We're not quite there yet. You said it could be played.
19 You're talking about it could be played from the hard drive of
20 Facet?

21 A. In the normal playback environment of Facet, yes.

22 Q. In the hypothetical flash drive copy, if it were
23 reconfigured to allow such a copy, that is not playable unless
24 you break the code to get the keys?

25 A. Uhm, that's correct, yes.

1 Q. Okay. That's it.

2 THE COURT: Is it playable on any of the other Real
3 player DVD systems that are within the same registration?

4 THE WITNESS: No, not for Facet. The Facet program
5 today doesn't understand, yet, this concept of registration and
6 coordination.

7 Based on what I saw, they want to go there; they plan
8 to go there with future products. But this version does not do
9 that, no.

10 BY MR. SCOTT:

11 Q. And you take a flash drive -- let's move to the Vegas
12 world. You take a flash drive made on Vegas, movie's been
13 copied to the hard drive. You make a copy of that copy onto
14 the flash drive. Are you with me?

15 A. Uh-huh.

16 Q. And under -- under the current -- current state of
17 affairs, that could not be played, either?

18 A. Uhm, that's correct. The copy of the copy on a different
19 piece of hardware could not be played. That's correct.

20 Q. Right. And even if Judge Patel were part of that circle
21 of five registered devices to one user, and we gave her a hard
22 drive -- a flash drive with a copy of a copy, and she's one of
23 my circle of five in Vegas, she cannot play it, either, can
24 she?

25 A. That's correct. Again, the way it's implemented today,

1 that's absolutely correct.

2 Q. Okay. Now, a couple of other quick things here.

3 MR. SCOTT: Move on, Your Honor?

4 THE COURT: Sure.

5 MR. SCOTT: Thank you.

6 BY MR. SCOTT:

7 Q. Mr. Mick asked you some questions about the CSS specs and
8 CGMS, and you talked about this 2-bit coding.

9 A. Correct, yes.

10 Q. Would you agree with me that what the CSS specifications
11 require with respect to the CGMS codes is only that they be
12 passed along as an output to devices like the television that
13 would be playing the film?

14 A. That's certainly a significant part of what the specs talk
15 about, yes, for those codes. When you see these codes, you
16 need to do these things.

17 Q. And then on Mr. Singla's questioning, you talked about,
18 again, about a PC -- you were talking specifically about Facet,
19 and that -- you said it was a PC device because it used a
20 standardized interface, such as a standardized DVD-ROM. Did I
21 capture that about right?

22 A. In the parlance of the DVD specifications, it's a PC
23 device.

24 Q. Well, I want to go to the question of your using the
25 standardized DVD-ROM, okay?

1 A. A reader with a standardized interface.

2 Q. And you referred to a DVD-ROM?

3 A. Yes.

4 Q. And what you're referring to is that Real, in designing
5 Facet, uses a standardized DVD-ROM that it purchases from
6 someone else?

7 A. Uhm, so -- so, I guess, there's two parts. One is that
8 the prototype that I saw clearly used a standardized DVD-ROM.

9 But something that I know I haven't discussed yet,
10 but based on all the design documentation and the documentation
11 I saw, it did not appear, to a large degree, to be Real's
12 intention to actually build and sell these devices. But
13 certainly their long-term intention was to license the software
14 to others, who would then build and sell these devices.

15 Q. And Real's Facet device did require bus authentication and
16 bus encryption?

17 A. Yes. And the version I saw running had a standardized
18 interface, and implemented authentication and --

19 Q. Because it had PC buses between the DVD-ROM and the rest
20 of the unit?

21 A. Uhm, basically, because it used a DVD-ROM, which was a
22 licensed CSS product that was locked until the other side did
23 the authentication.

24 MR. SCOTT: That is all, Your Honor.

25 THE COURT: Okay. Thank you. May the witness be

1 excused, not subject to being recalled?

2 **MR. MICK:** Yes.

3 **MR. SINGLA:** Your Honor, we would like to withhold
4 the possibility that if there's something that comes up in
5 RealNetworks' case, that Mr. Schumann could come back for
6 really quick rebuttal, if necessary.

7 **THE COURT:** Upon a proffer, we'll see.

8 **MR. SINGLA:** Thank you, Your Honor.

9 **THE COURT:** You may step down. But do not discuss
10 your testimony with any other persons who may be witnesses
11 until the proceedings are over.

12 **THE WITNESS:** Thank you.

13 **THE COURT:** Thank you.

14 **MR. SINGLA:** Your Honor, at this time, we request
15 leave to play Ms. Hamilton's video. We will drop Mr. Barrett's
16 video, given the time. It's taken a little longer than
17 expected. Just play the one videotape.

18 **THE COURT:** How long is it?

19 **MR. SINGLA:** With the counters, our portion is about
20 25 minutes. RealNetworks' portion is about 15 minutes. It's
21 About 40 minutes total. 39, I think.

22 **MR. CUNNINGHAM:** Your Honor, we would encourage the
23 Court to consider the depositions outside of court time. We
24 think it's quite conceivable we could be finished, and finished
25 arguing, tomorrow afternoon if we move expeditiously. And we

1 think we can. So we would like to strive for that and,
2 therefore, not spend court time watching videos.

3 **THE COURT:** What is the reason that this has to be
4 shown here? Is there something about this that requires an
5 audience to see it in order to fully appreciate the flavor of
6 it?

7 **MR. SINGLA:** No, Your Honor. I don't think I would
8 say that, no.

9 From our perspective, it's simply an issue of the
10 timing of it. Just as any plaintiff or party in the case, we
11 have our notion of the order of evidence. And this is
12 something that we'd like to present to the Court before closing
13 arguments, before RealNetworks' witnesses.

14 I understand the Court's concerns, and I understand
15 the time issues.

16 **THE COURT:** We have the capacity, I think, to
17 reorganize things.

18 **MR. SINGLA:** Thank you.

19 **THE COURT:** So we will move on and -- but, thank you.

20 Do you understand what I'm saying? We'll go ahead
21 with the next witness. The next I guess, live witness, is
22 RealNetworks', right?

23 **MR. CUNNINGHAM:** Yes, Your Honor.

24 **THE COURT:** We can reorganize that in our minds,
25 okay.

1 **MR. SINGLA:** Yes, Your Honor.

2 **THE COURT:** Then, let's proceed.

3 **MR. CUNNINGHAM:** So, we would like to do that, Your
4 Honor.

5 Part of Mr. Glaser's testimony is going to involve a
6 demo. It won't take long. However, to show it requires
7 setting up the projector and setting up Facet. So, it's going
8 to take a few minutes to set that up. Not a long time, because
9 we already set it up at lunch.

10 **THE COURT:** Five, ten?

11 **MR. CUNNINGHAM:** I bet you it can done in under ten
12 minutes.

13 **MR. SINGLA:** Your Honor, I hope this isn't pushing
14 things too far, asking too much.

15 Could we inspect, see what this is, this device? We
16 don't know what they're purporting to show the Court. Could we
17 take a look at this Facet box?

18 **MR. CUNNINGHAM:** The Facet box that we're going to
19 show is the Facet box that was made available for inspection
20 before, that I believe Mr. Schumann saw.

21 We have no objection to them inspecting the box, as
22 long as they don't break the box.

23 **THE COURT:** Hold on. Are you talking about
24 demonstrating the Facet box, itself, in court, or are you
25 talking about there being some video of a demonstration of it?

1 **MR. CUNNINGHAM:** No, we're actually going to
2 demonstrate the box itself.

3 **THE COURT:** Is this it here?

4 **MR. CUNNINGHAM:** No, this is not it here. This is a
5 projector.

6 **THE COURT:** I wondered.

7 **MR. CUNNINGHAM:** This is it. Here comes trouble.
8 This is it here (indicating).

9 **THE COURT:** I see. Okay. And what is he going to
10 do, take it apart for us?

11 **MR. CUNNINGHAM:** He is not going to take it apart.
12 He is just going to show you the features.

13 (Laughter)

14 **THE COURT:** Okay. Do you have any question about
15 whether this is the Facet device in question?

16 **MR. SINGLA:** Uhm, certainly, Your Honor, given the
17 history of our examinations of the Facet box and the versions
18 of the code, we would like the opportunity to double-check
19 that.

20 **MR. CUNNINGHAM:** We have no objection.

21 **THE COURT:** This is a device that Mr. Schumann looked
22 at, right?

23 **MR. CUNNINGHAM:** That is what we would like to
24 confirm.

25 **THE COURT:** Is he still here?

1 **MR. SINGLA:** It looks the same.

2 **THE COURT:** Is Mr. Schumann still here?

3 **MR. SCHUMANN:** I am, Your Honor.

4 **THE COURT:** Well, he can come up and take a look. He
5 can assist you in this.

6 **MR. CUNNINGHAM:** I will say this, Your Honor, because
7 he won't be able to look at the code. This is a revised
8 version of the software that runs in the box. Same box.

9 **MR. SINGLA:** Sorry, Your Honor. What has happened
10 with the Facet box -- and we raised this issue with the Court
11 on February 3rd, when we had a telephonic conference, is that
12 we have seen, since November --

13 **THE COURT:** It's a work in progress, in other words.

14 **MR. SINGLA:** It keeps changing. The functionality
15 changes. The code changes.

16 To take one simple example, one of the versions we
17 were given, that we spent a lot of time studying, when you
18 would play the DVD itself, just hit play, not save the movie,
19 just play it, the original version actually would, nonetheless,
20 copy to the hard disk. New versions don't do that.

21 So, you know, we don't know what this is right now.
22 That's the concern I have. We're happy with a demonstration of
23 the device that Mr. Schumann inspected in January. And
24 Dr. Kelly was there, also.

25 There was a device that Ms. Aull inspected earlier.

1 We could have that one demonstrated. Something that we've seen
2 would be fine.

3 **MR. CUNNINGHAM:** This is the one they've seen, Your
4 Honor. And I'm telling you, we are going to just show you the
5 basic functionality from a consumer perspective, so you can see
6 what the thing does.

7 **THE COURT:** Why don't you let Messrs. -- Mr. Schumann
8 and Dr. Kelly come up here and sit in the jury box. And they
9 can be right here and take a look while they're demonstrating.
10 And they can play around with it, themselves. And we'll see
11 what we have, okay.

12 **MR. WILLIAMS:** Your Honor, Bart Williams. May I make
13 one point, very quickly?

14 **THE COURT:** Yes.

15 **MR. WILLIAMS:** Mr. Singla is being very kind, being
16 very nice.

17 **THE COURT:** He's always nice, isn't he?

18 **MR. WILLIAMS:** But I need to be firm sometimes. And
19 this is one of those times, because I think I heard
20 Mr. Cunningham say that this device that they intend to use in
21 court does not -- the software has been reconfigured since the
22 time that the experts have had a chance to review it.

23 And the reason that I think that's important is,
24 you'll recall the other day when Dr. Kelly was here and he did
25 a sampling. He asked to play a DVD. I think the movie was the

1 Italian Job.

2 And you'll recall, Your Honor, that on the video
3 there was no warning that came up. There was nothing that said
4 you're not supposed to copy this.

5 Excuse me. He was trying to copy a Disney movie.
6 Pardon me. And when he copied the Disney movie, there was no
7 warning that flashed up at that time. Now, I suspect that this
8 device here might do that.

9 **THE COURT:** The witnesses are perfectly capable of
10 telling us what is different and what is not different. And if
11 you wish to recall either Mr. Schumann or Dr. Kelly to testify
12 that this is not the same, this is different, that's fine.

13 **MR. WILLIAMS:** In terms of the functionality.

14 **THE COURT:** Yes.

15 **MR. WILLIAMS:** But in terms of the code that's in the
16 box --

17 **THE COURT:** We're not going to have a lot of --
18 you're just going to show us what some of the bells and
19 whistles are on this thing, right?

20 **MR. CUNNINGHAM:** Yes.

21 **THE COURT:** And somebody -- your witness is, in fact,
22 going to talk about that, correct?

23 **MR. CUNNINGHAM:** Yes.

24 **THE COURT:** Okay. And you can cross-examine him.
25 And if you need to recall Mr. Schumann or Dr. Kelly, that's

1 fine. Okay.

2 **MR. WILLIAMS:** Very well, Your Honor.

3 **THE COURT:** So, go ahead. I've got lots of papers
4 here to sign. Either of you want to leave, you can do that.

5 **MR. SCOTT:** I was going to ask. Thank you, Your
6 Honor. I'll do that.

7 **THE COURT:** Be back in about five to eight minutes.

8 **MR. SCOTT:** Thank you.

9 **MR. MICK:** Your Honor, I have a procedural question,
10 with respect to the deposition testimony that the parties have
11 indicated that they would like to submit as part of the
12 presentation. In what form and when would the Court like to
13 receive that?

14 **THE COURT:** CD-ROM, DVD, whatever you've got.
15 Presumably not only playable on a RealDVD player, right?

16 **MR. MICK:** Presumably, we can deliver that to Your
17 Honor this afternoon.

18 **THE COURT:** Yes. That's one I can either watch on my
19 computer, or on television, or in my car.

20 **MR. SINGLA:** What these defendants will provide, Your
21 Honor, is a DVD tomorrow. I don't think it will be today.
22 Just because our staff is here in the courtroom. A DVD
23 tomorrow, a few copies that the Court and your law clerk can
24 watch either on a PC or a DVD player. I think it should work
25 on a DVD player.

1 And we will also provide binders to go along with
2 that, with the marked-up transcripts and the exhibits, so the
3 Court can follow the testimony.

4 **THE COURT:** Okay. Fine. Thank you.

5 **MR. CUNNINGHAM:** Thank you.

6 **THE COURT:** So you can get started to set up. If
7 either Dr. Kelly or Mr. Schumann want to take a look at this
8 while you're doing it, that's fine, too.

9 **MR. SINGLA:** Are we off the record?

10 **THE COURT:** Yes.

11 (Brief break in proceedings.)

12 **MR. CUNNINGHAM:** We would call Rob Glaser.

13 **THE COURT:** Step right up here, please, and be sworn.

14 **THE WITNESS:** Thank you, Your Honor.

15 **ROBERT GLASER,**

16 called as a witness for the Plaintiffs herein, having been
17 first duly sworn, was examined and testified as follows:

18 **THE WITNESS:** I do.

19 **THE CLERK:** Please, state your full name. Spell your
20 last name for the record.

21 **THE WITNESS:** Robert Dennis Glaser, G-l-a-s-e-r.

22 **THE COURT:** You may be seated.

23 **THE WITNESS:** Thank you.
24
25

DIRECT EXAMINATION

BY MR. CUNNINGHAM:

Q. Good afternoon, Mr. Glaser.

A. Good afternoon.

Q. What's your position with RealNetworks?

A. I'm founder, chairman, and CEO.

Q. How long have you been involved with RealNetworks?

A. Well, we incorporated in February of 1994, so a little bit over 15 years.

Q. Can you tell us what your education is and what you did before founding RealNetworks?

A. Yeah. I have a bachelor's degree in computer science, and a master's degree in economics, both from Yale University. And before starting RealNetworks, I spent ten years at Microsoft Corporation, from 1983 to 1993.

Q. And do you have a family?

A. I do.

Q. How many children?

A. I have a wife and two-and-a-half-year-old twins.

Q. Thank you.

Can you tell us what the idea was behind the founding of RealNetworks?

A. Well, the original product idea was something called a streaming, and specifically streaming audio. That is, it was a system that allowed for anybody anywhere in the world over the

1 Internet to broadcast and then to receive audio that was
2 delivered streamed, as we called it, over the Internet.

3 And one of the big innovations of streaming is that
4 it allowed the listener to start listening, within a second of
5 so of starting to play. Because rather than waiting for the
6 whole file to come down, we would stream it, send little pieces
7 at a time, and begin to play once we had accumulated a small
8 amount.

9 So it was a much more responsive system, much easier
10 to use, and much less delays than anything that had come before
11 it.

12 **Q.** How did streaming relate to what media could be used on
13 the Internet?

14 **A.** Well, before the introduction of RealAudio, most of the
15 Internet had been used for text and a little bit of still
16 pictures.

17 So, we were among the first people, among the first
18 people to make audio and then video part of the mainstream part
19 of what people can do with the Internet.

20 **Q.** Does the company make a product not at issue in this case,
21 called the RealPlayer?

22 **A.** Yes, we do. The RealPlayer is the successor to the
23 RealAudio player that we introduced in 1995, where we're now on
24 the 11th version of it. And it's extremely popular.

25 It's distributed on hundreds of millions of computers

1 every year, and has got a very, very large installed base
2 around the world.

3 Q. Is it limited to audio, at this point?

4 A. No. In 1997, we went from audio to video. And the
5 RealPlayer now plays both streaming and downloaded video and
6 audio in many different formats.

7 Q. Does the company's product offerings include any offering
8 of copyrighted content?

9 A. Yes. Beginning in about the year 2000, we started
10 offering a set of services that included licensed content from
11 the film and television industry, from the music industry, and
12 from the games industry.

13 So we now have a series of products, really three
14 product lines, covering each of those areas.

15 Q. To pick on one of them, what's the company's music
16 offering called?

17 A. Our main user service in the United States is called
18 Rhapsody. And it's a subscription product that for a fixed
19 fee, generally about \$15 a month, allows the consumer to have
20 unlimited access to a library of over 5 million songs, where
21 for a fixed fee the consumer can listen to as much of that
22 music as he or she wants. And it's licensed from all four of
23 the major music companies as well as hundreds of independent
24 companies.

25 Q. Do the initials "DRM" mean anything to you?

1 **A.** DRM stands for "digital rights management." And it's a
2 technology that we use in a number of our products, to help
3 secure the content so that it can only be played according to
4 the rules that we and the contents holder intend and have
5 agreed to.

6 **Q.** To the best of your knowledge, has RealNetworks' DRM ever
7 been cracked?

8 **A.** Our main DRM, called the helix DRM, to my knowledge, has
9 never been cracked.

10 **Q.** And can you estimate what percentage of the company's
11 revenues come from offering copyrighted content?

12 **A.** Well, in 2006, we did a little bit over \$600 million. And
13 I would guess that the majority of that came from packages of
14 premium content that we offer to consumers. And, plus, on top
15 of that, there's premium content that our partners, like mobile
16 phone companies, offer to consumers. So, over a majority.

17 **Q.** Has the company ever been accused of copyright
18 infringement?

19 **A.** Not by major media companies like the ones here today.
20 Just little, independent companies, from time to time, that
21 might be a dispute between a record company and one of their
22 bands, or something. And they might have dragged us into it.
23 But not with any major media company like this --

24 (Reporter interrupts.)

25 **THE COURT:** You need to slow down.

THE WITNESS: Yes, Your Honor.

THE COURT: What is it about this industry?
Everything is on a fast track.

THE WITNESS: My apologies, Your Honor.

THE COURT: Slow down a little bit, okay. The
reporter needs to get down everything.

BY MR. CUNNINGHAM:

Q. Has the company ever been accused of violating the DMCA
before?

A. Not to my knowledge, no. Not by a major media company,
for sure.

Q. Now, turning to the products at issue in this case, can
you explain the origins of the RealDVD products?

A. Yes. We began looking it in earnest, at how to get
digital video services and products both onto the PC and onto
the television.

We sped an effort up in late 2006, early 2007. A
colleague of mine, Phil Barrett, who had been one of the early
technology executives at RealNetworks came back to RealNetworks
specifically to work on that project. And that started up in
the winter and spring of 2007.

And then in, probably around middle of 2007, May or
something like that, the Kaleidescape ruling came out. And
that seemed to us to be kind of a blueprint for how we would be
able to enter that market in a way that would be a meaningful

1 differentiator compared to the general consumer products that
2 were out there.

3 Q. And does -- the Facet box that the Court has heard about,
4 how if at all does it relate to a consumer's existing DVD
5 player?

6 A. That was just the idea that we had with Facet, which was
7 the first project that we started working on. We had the idea
8 that consumers already have DVD players, they are popular, and
9 that this was an opportunity to kind of create a next
10 generation DVD player that would add value to DVDs on top of
11 what consumers were already doing based on their libraries.

12 And the research we did said that the average
13 consumer had purchased 70 or 80 DVDs. So, many consumers had
14 large libraries of DVDs. And a product like Facet would add a
15 lot of value to those experiences.

16 Q. And given that potential market of people with so many
17 DVDs, why did you think that consumers might be interested in
18 these products?

19 A. Well, as it turned out, I'm kind of a techie, as the judge
20 has already observed by my speech pattern. And I had purchased
21 a Kaleidescape product in the -- I think it was the end of
22 2005.

23 And my wife was pregnant with our twins, in the
24 middle of 2006 was put on bed rest. So we watched a lot of TV
25 shows and a lot of movies. And having access so we could find

1 the movies we had purchased, we didn't have to rummage around
2 to find a DVD disc, and we could start --

3 (Reporter interrupts.)

4 I apologize. We had an experience where we had these
5 library of DVDs. And being able to use the Kaleidescape
6 product made it really easy for us to find the discs that we
7 wanted to play.

8 Sometimes we would play a disc and then fall asleep.
9 And the next day we could pick up exactly where we left off.

10 So I personally had the experience that this
11 Kaleidescape product, which at the time was about a \$10,000
12 product, very expensive, high-end gear, that it was a really
13 great experience. And that if we could build sort of a
14 mainstream consumer version of that kind of product, we could
15 do something that would really have a very significant impact
16 on the market.

17 **Q.** And can you tell me, slowly, who the intended audience was
18 for the products?

19 **A.** Well, we thought that the initial market for a product
20 like RealDVD would be -- there would be three market segments.

21 The first would be families with small children,
22 where those kids typically take -- watch those movies over and
23 over again. And discs can easily get scratched, or get peanut
24 butter on them, or get lost or misplaced. So that was market
25 segment that we thought would make a lot of sense.

1 A second market segment were business travelers, who
2 traveled with their laptop computers. And that was
3 particularly true for the Vegas version, the PC version of the
4 RealDVD software, that consumers could load up the discs on
5 their laptop and not have to bring the disc with them and run
6 the risk of losing them or damaging them.

7 And then the third market segment would be consumers
8 that had large libraries of video, where the organizational
9 benefits, particularly if you've got up to 75, a hundred, 150,
10 200 discs, would be really, really valuable.

11 So it was those three market segments that we thought
12 would form the initial market for our RealDVD products.

13 Q. Have you personally used a prototype of Facet?

14 A. Yes, I have.

15 Q. Can you compare Facet to Kaleidescape?

16 A. Well, I would say that Kaleidescape is kind of like a
17 Porsche. I mean, it's, you know, a beautiful product, but it's
18 very expensive.

19 And we thought that we could use modern technology,
20 deliver something that was maybe more like a Chevy, something
21 that would be a very, very good, very reliable, high-quality
22 product. More of a mass market product than a \$10,000 product.

23 Something like a \$300 product that would be, as I
24 said, a replacement for a consumer's regular DVD player.

25 Q. Would there be much difference in the functionality

1 between what you had in your Kaleidescape and what the company
2 would offer with Facet?

3 **A.** We thought we could implement all the basic functionality.
4 And there might be differences in terms of the capacity in
5 terms of the number of movies or some other advanced features.
6 But we thought we could deliver the essence of the value of the
7 \$10,000 Kaleidescape product in a \$300 target price consumer
8 product.

9 **Q.** Who do you regard as the company's competitors for these
10 products?

11 **A.** Well, certainly, high-end products like Kaleidescape. Or,
12 there's another one, called -- a company called AMX has one.
13 There were a few of those high-end products. That's the kind
14 of competitor.

15 Second, there are one or two other PC and Macintosh
16 products that are in the same category, I would say, as
17 RealDVD, in that they preserve the CSS encryption from the
18 discs.

19 One that I know is called Drive-in, which today only
20 runs on the Macintosh. But they've said they're going to come
21 out with one on the PC. They've implied it.

22 And then, of course, there's these illegal or
23 illegitimate products, we believe they are illegitimate, that
24 are these -- I'll just call them rippers, that strip off the
25 CSS protection. HandBrake is one. You can Google them and

1 find dozens of them out there.

2 They are kind of a competitor. We don't compete with
3 them head-on, in the sense that our product is not designed for
4 people that are willing to pirate.

5 But, at the same time, there certainly is some
6 substitution while those products are out there. If somebody
7 is using one of those products, they probably aren't in the
8 market for ours.

9 **Q.** With respect to the rippers, how are they different from
10 your products, other than the fact that they strip off CSS
11 protections?

12 **A.** Well, we do two things that, to my mind, those products do
13 neither.

14 The first, as you say, is they strip off the CSS.
15 And we preserve it. We also do a second thing, which is we add
16 a second layer of encryption on top, so that when the consumer
17 saves his or her movies onto the RealDVD player's hard drive,
18 that file cannot be used outside of sort of the RealDVD realm.

19 In other words, if you ship that disc, those files
20 over the Internet, put them on a peer-to-peer network, if you
21 copy them from that drive onto a second drive, they don't play
22 because of that second layer of protection that's keyed to both
23 the account that's created it and to the disc that it was
24 originally copied onto or saved onto by RealDVD.

25 **Q.** So we'll come back to the restrictions, which the Court

1 has already heard a fair amount about this today.

2 Would you regard the legitimate competitors, not the
3 rippers, as having been successful thus far?

4 **A.** Well -- and I apologize that I missed one category of
5 competition.

6 I think the movie studios themselves are also
7 competitors, because instead of having consumers use the DVDs
8 they purchased, the studios want consumers to buy a second
9 digital copy of those movies. So that also operates as a form
10 of competition.

11 And that's the kind of competition we've seen
12 increase, actually, just over the last six months, where more
13 and more studios are putting these digital copies out there,
14 either with the Blu-ray version of it or with the premium
15 version of it.

16 And we certainly see that as a competitor, because if
17 consumers get habituated to using that method of getting the
18 digital copy rather than using the copy that -- saving a copy
19 from the disc that they purchased, we certainly are concerned
20 that those competitors will kind of get established, and it
21 will be much, much harder, if not impossible, for us to unseat
22 them.

23 **Q.** Let's now talk a little bit about the restrictions on the
24 products that you alluded to.

25 With respect to the Facet product sitting in front of

1 you, does it have the ability to save a movie to the internal
2 hard drive?

3 A. Yes, it does.

4 Q. Can it also save to an external drive?

5 A. I don't know about this version of Facet.

6 Q. And in the version that you contemplate releasing for
7 sale, do you know whether it will have that ability to save
8 outside the box?

9 A. I think it will, only with the restriction that that
10 version, that disc you showed us, can only be played on that
11 one Facet box. In other words, that disc can't be moved
12 anywhere else.

13 Q. So if you allow, in the release version, the thumb drive
14 to be a bearer of the saved copy will that thumb drive only be
15 playable on the box to which the thumb drive was connected when
16 the copy was made?

17 A. That's our current Facet plan, yes.

18 Q. You say "current Facet plan." I suppose it's the case
19 that software can always be revised; is that right?

20 A. That's certainly right.

21 Q. We respect to the kinds of restrictions that you just
22 talked about and we have talked about, what would have to
23 happen in order for you to be willing to relax those
24 restrictions?

25 A. Well, the restrictions we put in place were based on a

1 very thorough analysis by our legal team, in consultation with
2 our engineers, as to what the rules of the road were.
3 Certainly, we learned from the Kaleidescape ruling, but I know
4 that our attorneys made independent assessments.

5 And, so, when deciding any features to put into
6 RealDVD, either the Facet version or the Vegas, the PC version,
7 we consult with our attorneys and only implement features that
8 our attorneys are very confidential are fully legal and
9 legitimate.

10 Q. Is it the intent of RealNetworks to ever market a product
11 that's going to allow wide-scale, mass copying?

12 A. Absolutely not.

13 Q. With respect to the Facet box, does it connect to the
14 Internet?

15 A. Yes, it does.

16 Q. Why?

17 A. It connects to the Internet to get the metadata, as we
18 call it, the pictures of the movies, the descriptions of them,
19 the information on who's in the cast.

20 There's a service that we have a licensing
21 relationship with, called Gracenote, that has a database of
22 that information. And we key off the disc to look up that
23 information and to bring it down and put it on the -- on the
24 Facet box on the RealDVD box.

25 Q. Does the Facet box allow someone to take a copy, whether

1 playable or not, and shoot it up onto the Internet?

2 **A.** It is not designed into the software to do that. There's
3 no menu for it. There's no user interface for it. And it's a
4 closed box. So we have taken as many precautions as we can to
5 make that hard to do.

6 **Q.** If that were to happen, would the copy be playable?

7 **A.** No, it would not. Because the content is keyed to the
8 particular box, and in such a way that it would not be playable
9 on any other box.

10 **THE COURT:** By the way, whose witness is this, as far
11 as your team is concerned?

12 **MR. WILLIAMS:** It's mine, Your Honor.

13 **THE COURT:** Your witness. Okay. Thank you.

14 **BY MR. CUNNINGHAM:**

15 **Q.** We've put on the Elmo, which is probably visible to your
16 left, Mr. Glaser.

17 **A.** Yes, I see it. Thank you.

18 **Q.** This is a document used earlier today, Exhibit 232. And
19 that's slide 51. I think if we were to show you, it would be
20 revealed that this is a September 2008 presentation.

21 Actually, if I may, I'll just show you, because I
22 don't know if you're familiar with it.

23 Have you seen Exhibit 232 before?

24 **A.** Only in preparation for today's testimony.

25 **Q.** So we showed it to you at the break, right?

1 A. Earlier today, yes.

2 Q. Right. And with respect to slide 51, it shows a networked
3 Facet device. Do you see that?

4 A. Yes, I do.

5 Q. And is the version of Facet that is to be released going
6 to be networkable in a home environment?

7 A. No. Version 1.0 does not have this capability. It's in
8 the list of capabilities that are being studied and are part of
9 the -- sort of the possible future directions.

10 Q. And, again, if you were -- well, let me ask this. It's
11 been suggested that if something could eventually be released
12 for a home network, it could also then be released to a
13 dormitory, and, who knows, maybe a university, maybe a small
14 town --

15 (Reporter interrupts)

16 A dormitory, a university, a small town, et cetera.

17 I understand this is not the current version of the
18 product. Are there ways, that you're aware of, that could
19 limit how widely used a device on a network could be?

20 A. Sure. I think there are legitimate ideas.

21 I'm not one of the architects of the product, but I'm
22 moderately technical, as you pointed out.

23 You could have a limit, for instance, that any home
24 network could only have a certain number of devices. So you
25 could say, for instance, home network could only have five

1 devices that could play on it. So that wouldn't work very well
2 in a dorm.

3 There are other limitations you could impose. I know
4 the Kaleidescape product works in a home network. And I don't
5 know all the limits it has, but that would be, certainly,
6 something that we would study.

7 But our legal team hasn't been asked to pass muster
8 on that decision because the product's not ready to go in that
9 form.

10 **Q.** And I'm going to kind of cut to it, with respect to the
11 Vegas product. But does the Vegas product allow for any
12 playable copies to be made of the copy that is saved by Vegas?

13 **A.** No. Both Vegas and Facet have that same limit, in that
14 you cannot make a copy of a copy. And the -- when you save a
15 copy using, from the DVD, the information on the hard drive
16 about the hard drive that were saved, is wired into the
17 encryption. So if you try to move it onto a different file, it
18 becomes unplayable.

19 **Q.** Now, would it be possible for someone to rent a movie,
20 make a copy with either of the products, and then return the
21 movie?

22 **A.** Yes, indeed, it would.

23 **Q.** Why does your product allow that?

24 **A.** There's no way today, technically, to know the difference
25 between rental discs and purchased discs.

1 The studios distribute them in a way where, from the
2 standpoint of a DVD player, they all look the same.

3 So we would need cooperation with the studios for
4 them to mark the rental discs in some different way so that we
5 would then operate on them in a different way than we do
6 purchased discs.

7 **Q.** Have you asked the studios to do that?

8 **A.** We've had discussions with them, yes.

9 **Q.** With respect to the phenomenon of same idea, but this time
10 borrowing as opposed to renting, would there be any way to
11 limit the borrowing, copying and returning phenomena?

12 **A.** Yes, there would. That way would be a little bit more
13 complicated. You would probably need the discs to be
14 serialized in some form so that you would know that a given
15 movie was copy 1, copy 2, copy 3, copy up to million of them.

16 That technology does exist. It does exist, but it's
17 not in the mainstream. But if you had that technology, it
18 certainly would be knowable if a given disc had already been
19 copied into a RealDVD player or not.

20 **Q.** So does the -- do the products do anything to try to limit
21 a rent-copy-return or borrow-copy-return phenomena?

22 **A.** Yes, we do. Both in terms of the marketing of the
23 products we have been very clear, and in terms of the screens
24 that come up. In fact, the screen that comes up every time
25 when a consumer puts a disc in and gives them the choice of

1 either playing it or saving it, tells them explicitly that they
2 can only save the disc if it's a disc that they own.

3 Q. We'll show that screen when we show the demo in a moment,
4 with any luck. Won't we?

5 A. I hope so, yes.

6 Q. Okay. If I could, I'd like to show the witness what we're
7 marking as Exhibit A for this hearing.

8 Do you recognize what we've marked as Exhibit A?

9 A. Yes, I do.

10 Q. What is it?

11 A. It's the frequently asked questions or FAQ page from the
12 RealDVD Web site.

13 Q. And what's the purpose of a FAQ document that you put on a
14 product Web site?

15 A. It's to answer the most common or frequently asked
16 questions that consumers are either likely to ask or we have
17 information that they have asked, so that in one place
18 consumers can get accurate information.

19 MR. CUNNINGHAM: Mr. Bowser, could I get you to
20 switch modes.

21 And if I could direct everyone's attention to
22 question 2.

23 BY MR. CUNNINGHAM:

24 Q. Can you tell me why the question and answer are -- or,
25 really, the answer is worded the way it is in question 2.

1 A. Well, I think we've tried, at every turn, to re-enforce
2 the notion that the purpose and intent of RealDVD is for
3 consumers to save DVD discs that they own, and that that's our
4 focus, not other discs.

5 Q. With respect to question 10, which says, "Is it legal to
6 save movies with RealDVD? Answer: Yes, provided that you are
7 the owner of the original DVD and you use your saved copy
8 solely for your personal use," why was that FAQ included?

9 A. I think it's further re-enforcement of the fact that this
10 is our intended use, which we fully believe is legal.

11 Q. Do you think your company -- your customers will follow
12 that admonition?

13 A. I think the substantial majority of our target market
14 will. As I said, we're focused on these initial market
15 segments, these three segments, who will get value out of the
16 product; a great deal of value.

17 And if a consumer is not interested those
18 restrictions, there are many, many products that can be
19 downloaded on the Internet, that have no inhibitions in how
20 they copy or move around the DVD content.

21 So we've really focused our marketing, our product
22 development, our user experience, in a very specific way. And
23 customers that don't like those limitations really aren't our
24 target market, and we don't have the best product for them.

25 Q. Now, with respect to the technical restrictions, as

1 opposed to the admissions, do you think those restrictions are
2 a good thing, a bad thing, or an indifferent thing for
3 RealNetworks?

4 **A.** Well, the question specifically about adding the second
5 layer of encryption?

6 **Q.** Right.

7 **A.** Well, we add the second layer of encryption, first and
8 foremost, because the advice we got from our legal team, which
9 made good sense to me as a layperson in this, is that that
10 would prevent these files, very effectively, from being sent
11 over peer-to-peer networks or being passed around with copies
12 to other people, so that it would really steer users towards
13 our intended use.

14 So it's a negative if the illegitimate products are
15 able to trumpet their superiority. It's a positive if we get a
16 reputation as being an honorable product. So, I could see it
17 cutting both ways.

18 But, in any event, we didn't do it because we thought
19 of a better way. We did it because our legal team strongly
20 said that it was the right thing to do.

21 **Q.** I've handed you what has been marked as Exhibit B for this
22 hearing. And it's a copy of an article from the *Seattle Times*
23 that was actually written by an AP writer named Rachel Metz.
24 The title is, "RealNetworks Releasing DVD-copying Software."

25 And that's a quote attributable to you in this

1 article. Do you have it in front of you?

2 A. Yes, I do.

3 Q. And we have it on the screen. And your quote is actually
4 the bottom line that's highlight. And it says, "'If you want
5 to steal, we remind you what the rules are, and we discourage
6 you from doing it, but we're not your nanny,' he said."

7 Were you accurately quoted?

8 A. Yes, I believe I was.

9 Q. Can you explain the context in which you gave that quote
10 to Ms. Metz?

11 A. Well, the context was this was a reporter who was asking
12 variations of the same question a few different times. And I
13 answered the question, yes, it's possible, but we work really
14 hard to steer consumers away from that. And then maybe at the
15 second or third time, maybe fourth time, she asked me the
16 question, I answered this way.

17 Of course, what's in my mind is my wife and I are
18 lucky enough to have a nanny helping us with our twins. And
19 I've seen the nanny a few times keep our kids from putting
20 their fingers in wall sockets and doing things that little kids
21 want to do.

22 So it's very present in my mind that nannies can
23 physically prevent people from doing things if they're there.
24 But there's no way that we can physically prevent consumers
25 from doing something. We can simply try to educate them and

1 teach them, and put up reminders based on the current
2 technology.

3 Although, as I mentioned earlier, we'd love to work
4 with the studios to have ways of, for instance, marking rental
5 discs as different from purchased discs.

6 **Q.** Were you winking at the piracy problem?

7 **A.** Absolutely not.

8 **Q.** I'd now like to have you do the demonstration. And if the
9 Court doesn't mind, I think, to get the angle right on the
10 remote it's easier if you stand up.

11 **THE WITNESS:** Your Honor, may I?

12 **THE COURT:** Yes, you may.

13 **THE WITNESS:** Thank you.

14 **THE COURT:** As someone who presides over certain
15 kinds of cases in this courtroom, quite often, I'm really
16 tempted to ask you: Do you think that this is more effective
17 or will be as effective as "Just say no"?

18 (Laughter)

19 **THE WITNESS:** I believe, for our target market, which
20 is adults, not adolescents, yes, I do.

21 I think we're talking to people who know, most of
22 them at least, what the right thing is to do. And we're
23 reminding them.

24 And it's not -- it's not trying to convince
25 13-year-olds not to experiment. Or 15-year-olds. I think it's

1 a different case, personally.

2 Now, this is the kind of disc that we use a lot in my
3 household, is *Finding Nemo*. Great, phenomenal movie. And what
4 I'm going to do is I'm going to just show you what happens when
5 a consumer puts a disc in the RealDVD. It will take a second
6 to spin up. And, with any luck, it will.

7 And it reads the discs. And in a second it will
8 identify it as *Finding Nemo*. And then we'll see a screen.

9 So, the screen here says, "RealDVD should only be
10 used to save discs you own. If you don't own the disc, please
11 select play."

12 Well, since, in this case, we own the disc, I will
13 actually pick "play and save." What that will do is it will
14 start the playback while, at the same time, saving a copy to
15 the Facet box's hard drive.

16 **BY MR. CUNNINGHAM:**

17 **Q.** If I could just pause you. We won't put it back up. But
18 with respect to that screen that's admonishing people to only
19 save what they own --

20 **A.** Yes.

21 (Video of movie playing on screen.)

22 **THE COURT:** Good background music. Just turn it down
23 a little bit.

24 (Laughter)

25

1 BY MR. CUNNINGHAM:

2 Q. So with respect to the prior screen --

3 A. Yes.

4 Q. -- is that screen on every commercially -- will it be on
5 commercially-released version of Vegas or Facet?

6 A. Yes. It was on every commercial version of Vegas, the
7 RealDVD PC software that was out in the market for a few days
8 prior to the TRO. And it will be on every commercial version
9 of RealDVD going forward, via it, then, Facet or the PC Vegas
10 version.

11 Q. So a version for which we didn't get any background
12 information of the Vegas product was shown to the Court
13 earlier. And when it began seemingly in the same mode, that
14 didn't come up.

15 Do you have any theory as to why?

16 A. Well, I asked the engineer in charge of the project,
17 Mr. Jeff Chasen, about it. What he told me is that we gave the
18 studios an early pre-release version, and that that version
19 probably had a few bugs in it, including that bug.

20 But I do know that the version that was released on
21 September 30, and its design was explicitly to do this, puts up
22 that screen on -- the PC version of that screen every time a
23 disc is put in.

24 Q. Okay. So can you show us what else the product does?

25 A. This was one simple example. I will show Your Honor a few

1 simple examples.

2 Now, this is -- what I'm going to show you here is an
3 example of a few features. This is *The Sopranos*. And it's a
4 full box set. So in the corner there you see that little icon
5 that shows that it's multiple discs. So one of the things that
6 RealDVD does is, it helps organize collections of movies.

7 Now, when I start here, the first thing it says is,
8 "Parental Control." So we've set up Parental controls so that
9 any movie over, I think, PG or the television equivalent
10 requires a code to be put in that's set by the parent.

11 **Q.** If I may pause. You said, "We set up the parental codes
12 [sic]." Are you saying RealNetworks, or right now for this
13 demo?

14 **A.** Wel, RealNetworks set up the feature so that it's built
15 into every RealDVD product. And the consumer picks the code
16 that he or she wants, and whether they want to have parental
17 controls turned on or turned off.

18 So I've just gone through the parental controls. And
19 you see here that this is a four-disc collection. And we can
20 actually go to the individual episodes of the show within each
21 disc, if we want.

22 So, for instance, I'll pick -- I'll pick this
23 episode. And what you'll see here is it gives me the option of
24 playing it or gives me a synopsis on it. And the first thing
25 that we do is, I will play.

GLASER - DIRECT EXAMINATION / CUNNINGHAM

1 (Video playing on screen.)

2 And I won't actually go and play it because it will
3 just be an episode of *The Sopranos*, which not sure that's a
4 good open court thing to show.

5 But you'll see that now, when I go back, it gives me
6 the option of resuming. And, indeed, it has a little marker
7 there, that has a little pause button. So that if I were to
8 come back to play this another day, it would pick up exactly
9 where I left off.

10 It would give me the option of picking up where I
11 left off. So that's a nice, sort of convenient bookmarking
12 feature. And you can have that for all kinds of different
13 programs that you're watching.

14 So, again, this is just a few examples -- I could
15 show more, but I know we didn't want to take too much time --
16 of how RealDVD is a better DVD player than the standard DVD
17 players that are out there, because of all the technology that
18 we've built that adds value to people's collections that they
19 own.

20 **THE COURT:** Are you saying, is the introduction that
21 we saw, as to what that particular segment was going to
22 involve, is that something that comes from Gracenote then?

23 **THE WITNESS:** That little paragraph, yes, that is
24 licensed from Gracenote. That is correct, Your Honor.
25

1 BY MR. CUNNINGHAM:

2 Q. Does RealNetworks have a licenses with Gracenote?

3 A. Yes, we are a licensee of their service.

4 Q. Okay. So changing topics.

5 What steps did you take to assure that the Vegas and
6 the Facet products would comply with the CSS license?

7 A. Well, once we set a direction that we wanted to build a
8 product that had this feature and capability, had a series of
9 meetings with our senior legal team and our senior product
10 team, at this point led by Mr. Barrett, and said, look, let's
11 work very closely together here. And I want to direct you to
12 follow the law as learned and described by our legal team.

13 So the engineering team always works closely with our
14 legal team. But in the case of the Facet project, we worked
15 particularly closely together. Those teams worked particularly
16 closely together.

17 And from the beginning and all through the process of
18 the project, I directed them to make sure that they were
19 completely and fully complying with all relevant laws and
20 contracts.

21 Q. And did your legal team bring in any outside expertise?

22 A. Indeed, we did. At one point, I remember that Mr. Kimbell
23 brought in Mr. Jim Berger, who I found out was involved very
24 early on and very centrally in the formation of the DVD CCA and
25 the specifications associated with the DVD licenses.

1 So we were able to learn from Mr. Berger a great deal
2 about these agreements and the -- and the sort of the history
3 behind them, which helped us, in our mind, make sure that we
4 did the right thing as we built our products.

5 **MR. WILLIAMS:** I apologize. I object. Counsel has
6 previously prevented us from getting into any conversations
7 with Mr. Berger. So it would be improper, on that basis, to
8 elicit the testimony that's being elicited now about the
9 conversations with Mr. Berger.

10 **MR. CUNNINGHAM:** I'm done with that.

11 **MR. WILLIAMS:** We'd ask that the answer be stricken.

12 **MR. CUNNINGHAM:** I don't think I asked for privileged
13 communications. Which, I'm not sure that everything on this
14 topic was always objected to, quite frankly. Even if they
15 were, I didn't ask for privileged --

16 **THE COURT:** He did not go into the substance of the
17 discussions. So, at this point we're stopping, which sounds
18 like a good idea.

19 You can move on.

20 **BY MR. CUNNINGHAM:**

21 **Q.** And do you believe the products comply with the CSS
22 license?

23 **A.** Yes, I do.

24 **Q.** Why?

25 **A.** Because our legal team did a great deal of homework, very

1 thorough work, as I mentioned, to understand the -- all of the
2 license agreements and all the laws.

3 And this is a legal team that has an outstanding
4 track record. Mr. Kimbell and his colleague, Mr. Wey
5 (phonetic), I worked with each of them for about ten years. I
6 know the quality of the work that they do.

7 And, as I mentioned earlier, our company has gone for
8 15 years, and this is the first lawsuit of this kind that we've
9 ever had. So I have a great deal of confidence in the rigor
10 and quality of their work, as well as the rigor and quality of
11 the engineering team working with them.

12 Mr. Barrett has been a colleague of mine at
13 RealNetworks for most of the 15 years we've been around.
14 Mr. Chasen, who ran the Vegas project, has been with us, I
15 think, about ten years. So we've had, on both the legal side
16 and technical side, highly competent and very experienced teams
17 working these matters.

18 **Q.** Are you aware of any features that were omitted from the
19 products in order to keep them compliant?

20 **A.** Sure. One of the features that I was personally
21 interested in was the ability to take one of these files, which
22 are these DVDs which are six or seven meg, quite big files, and
23 use video compression to compress them down maybe to one meg.

24 So you would be able, in the same space that you
25 could save one compressed movie, you could save six compressed

1 movies. That would clearly add a lot of value for people.
2 They would be able to store a lot more movies in the same
3 amount of storage.

4 But our legal team felt that, as they understood the
5 licenses and the rights that we had, that we did not have that
6 right, so we did not implement that feature.

7 **Q.** Shifting gears, slightly. In the course of the
8 development of the products, did anyone ever talk to you about
9 something that was called ARccOS or RipGuard or ARccOS and
10 RipGuard?

11 **A.** Just vaguely. It was not a primary topic, but it was
12 something that came up a few times.

13 **Q.** What did you understand those terms to be talking about?

14 **A.** Well, I didn't really understand them in any technical
15 detail. I understood them to be impediments to the process of
16 saving discs, that had been put in place by some studios on
17 some movies.

18 **Q.** And did you have a sense as to whether or not whatever
19 this technology was prevented the copying of movies?

20 **A.** I had a pretty good sense that it must not because, as a
21 Kaleidescape user, I put in hundreds of discs into my
22 Kaleidescape, and I had never once had a disc that didn't get
23 saved.

24 So it seemed to me that whatever kind of speed bumps
25 or impediments these were, they didn't effectively stop the

1 copying because Kaleidescape was able to copy them. And I
2 remember, in fact, telling our team that once or twice. And I
3 said, well, there must be a legitimate way of doing it because
4 those guys did it.

5 Q. Returning to the issue of compression or transcoding,
6 those two things, which your products don't do, is that
7 something that the illegal rippers do?

8 A. Oh, the illegal rippers just have a party. They'll
9 convert from any format to any format, absolutely.

10 That's one of their most competitive advantages
11 versus us, is they put no restrictions on the different ways
12 you can change the format.

13 Q. Shifting gears. Did you think that RealNetworks'
14 products, the RealDVD products, would offer any opportunities
15 to the movie studios?

16 A. Certainly.

17 Q. What were those?

18 A. Well, first, we thought that a product that made DVDs more
19 useful, more valuable, would make people want to buy more DVDs.

20 I personally have found DVDs in my Kaleidescape
21 product that I had forgotten that I purchased. And then after
22 watching them and enjoying them, I remember thinking next time
23 I go to the store, well, I don't just have to buy this to watch
24 it tonight, because if I forget about it I can go back and
25 watch it a month from now or two weeks from now. So just

1 simply having DVDs be more useful would make people want to buy
2 more.

3 Second, unlike a regular DVD player, RealDVD keeps
4 track of the fact that you have *Sopranos* Season 3 right there.
5 So that if the consumer has brought *Sopranos* Season 3 and
6 watches it, he or she might well be a good candidate for
7 purchasing Season 4, when the discs come out, or maybe even a
8 digital download version of Season 4.

9 So we thought and think that there's a lot of
10 opportunities to work with the studios to market to the base of
11 RealDVD users, and are looking forward to having the
12 opportunity to work with the studios to do that.

13 **Q.** Now, were you involved in any discussions with the studios
14 prior to the release of the Vegas RealDVD product?

15 **A.** Yes, I was.

16 **Q.** When did that begin?

17 **A.** Well, the first conversation that I was involved in was
18 with Viacom. They're our partners in the music business, so it
19 seemed like a good place to start.

20 And we -- I met with senior executive of Viacom in
21 New York, about August 15th, and demonstrated Vegas, the PC
22 software version of RealDVD.

23 Demonstrated it to him, to begin conversations with
24 them so that, first off, they would know it was coming, so they
25 wouldn't be surprised. And, second, we could start to have

1 conversations about some of these commercial opportunities that
2 I mentioned.

3 **Q.** Did you think you needed Viacom or any other studios'
4 permission to launch the product?

5 **A.** Not the product, the Vegas RealDVD product, version 1.
6 But, certainly, to do a lot of these marketing things we would
7 want to work with them on some of these event features. So
8 there would be things that would be useful to work with them
9 collaboratively on, but not for the basic product, no.

10 **Q.** Staying with Viacom, did you have any discussions with
11 Viacom about potential possibility, possible problem of this
12 rent, copy and return phenomenon?

13 **A.** Yes. That was something that a few of the Viacom
14 executives mentioned as something that they were concerned
15 about.

16 **Q.** Again, when were the discussions about that phenomena?

17 **A.** It was either in the initial discussion on the 15th, or
18 following discussions a couple of days later. And we said the
19 same thing to them that we said in every meeting I'm aware of,
20 which is, We would like to work with you, and that there's a
21 fairly easy thing that you can do, which is to mark rental
22 discs as different from purchased discs.

23 Because my understanding is that the studios directly
24 supply many if not most of the discs used by people like
25 Blockbuster and Netflix. So it would be a fairly easy thing

1 for them segment the distribution and then mark them in a way.

2 And we'd agree with rules on how to handle those discs.

3 Q. Has that happened?

4 A. No, not to my knowledge.

5 Q. When was Vegas originally scheduled for launch?

6 A. I think we announced it at a conference called "Demo" on
7 September 8th. And it was our original intent to ship it that
8 day, on the 8th.

9 Q. And when did it end up actually launching and being
10 shipped?

11 A. At the end of the month. I think it was the 30th, so
12 about three weeks later.

13 Q. And why was it delayed?

14 A. Well, the main reason we delayed it was we were in
15 discussions --

16 MR. WILLIAMS: Objection, Your Honor. That invades
17 the nondisclosure discussion.

18 THE COURT: I'm not so sure that, at this point, that
19 needs to come in, in any event. So the objection is sustained.
20 It maybe at some point with regard to other issues. But I'd
21 like to really focus on likelihood of success, for the most
22 part.

23 If we need to get to the other issues and whether
24 this would be relevant, we can take that up at that time.

25 MR. CUNNINGHAM: Thank you, Your Honor.

1 **THE COURT:** Thank you. And that can be done by way
2 of declaration or deposition.

3 **MR. STEER:** Mr. Cunningham, may I have a copy of the
4 next exhibit?

5 (Counsel confer outside of hearing of reporter.)

6 **MR. STEER:** That's beyond the call.

7 **BY MR. CUNNINGHAM:**

8 **Q.** Mr. Glaser I've put before you what we've marked as
9 Exhibit C. Do you have that in front of you?

10 **A.** Yes, I do.

11 **Q.** And have you had a chance to visit the Disney Web site for
12 their product called "Digital Copy"?

13 **A.** Yes, I have.

14 **Q.** And Exhibit C, what is that?

15 **A.** This looks like a printout of pieces of the Web site.

16 **Q.** And if I direct your attention just down to the bottom of
17 what is the first page, is that giving a little bullet summary
18 of what the product does? It rolls over onto the next page as,
19 well.

20 **A.** The question is, is that a summary of the function of the
21 product?

22 **Q.** Yes.

23 **A.** Yes, I believe it is.

24 **Q.** Okay. And have you paid any attention to the
25 competitive -- the studios' potentially competitive products

1 while you've been paying attention to this litigation?

2 **A.** Yes. I don't track it as closely as the people on the --
3 the team that are directly on RealDVD, but I certainly noticed
4 more activity in the marketplace over the last six months with
5 these digital copies, where the studios seem to be putting them
6 on more and more movies and marketing them more and more
7 actively.

8 **MR. CUNNINGHAM:** Your Honor, I would like to move
9 exhibits A, B and C in at this time.

10 **THE COURT:** Any objection?

11 **MR. WILLIAMS:** No objection, Your Honor.

12 **THE COURT:** A, B and C are admitted.

13 (Exhibits A, B and C received in evidence.)

14 **BY MR. CUNNINGHAM:**

15 **Q.** Finally, Mr. Glaser, do you have a belief as to how the
16 issuing of a preliminary injunction would affect your company's
17 ability to sell the RealDVD products?

18 **A.** Oh, absolutely. If we were enjoined from selling RealDVD,
19 and out of the market any further than we've been today, I
20 think we'd have -- it would have very dire consequences on our
21 ability, frankly, to ever be in this business.

22 **Q.** And why is that?

23 **A.** Well, first, as you mentioned, the studios are being much
24 more active in marketing their digital copy alternatives and
25 working very hard, I guess, to get consumers to use those.

1 And once consumer behavior patterns get established
2 they get harder and harder and very expensive to change.

3 And look how much money Microsoft, which has huge
4 amounts of money, has put in trying to change the way consumers
5 use Google, with no success or very little success.

6 Second, it's obviously expensive both to fight the
7 case and to keep the team together with an uncertain commercial
8 opportunity.

9 So, at some point, we'd have to look hard and say is
10 this something, particularly in these economic times, we can
11 afford to keep doing? And might well have to, you know,
12 reallocate the team, close down or put the project on ice. And
13 once engineers scatter, it's very hard to pull them back
14 together.

15 **MR. CUNNINGHAM:** I pass the witness.

16 **THE COURT:** Mr. Williams.

17 **MR. WILLIAMS:** Your Honor, may I ask that the
18 projector be turned off and removed?

19 **THE COURT:** Yes.

20 **MR. WILLIAMS:** Thank you.

21 **THE COURT:** And I guess we're not having any further
22 demonstration than we've had, correct?

23 **MR. WILLIAMS:** No, Your Honor.

24 **THE COURT:** So I think that Mr. Schumann and
25 Dr. Kelly can either go back to their seats or they can stay

1 there. You can go home. Whatever you want to do.

2 **MR. SINGLA:** Your Honor, in the interim, while
3 they're moving, could we make a request that after Mr. Glaser's
4 examination we be allowed to inspect the device?

5 We didn't get a chance to do that during the break.
6 We weren't permitted to. We would like to do it afterwards, at
7 least to know what it was.

8 **THE COURT:** That's fine.

9 **MR. SINGLA:** Thank you, Your Honor.

10 **CROSS EXAMINATION**

11 **BY MR. WILLIAMS:**

12 **Q** Good afternoon, sir.

13 **A** Good afternoon.

14 **Q** Sir, you have never actually read any of the CSS
15 specifications, have you?

16 **A** That's correct.

17 **Q** So you don't know the particular terms of the
18 specifications. Is that right?

19 **A** I'm not sure what you mean by "terms of specification,"
20 but I certainly don't know it very well.

21 **Q** You do not know the specific things that the CSS
22 specifications authorize, or do not authorize. Right?

23 **A** I have some knowledge from the -- our legal team on these
24 matters, but I have no firsthand knowledge, never read the
25 specifications.

1 Q Everything you know about the CSS specifications is based
2 upon conversations you have had with your Counsel. Correct?

3 A I would say everything is either based on conversations
4 with Counsel or combinations of conversations with Counsel and
5 with engineers, yes. That's correct.

6 Q You don't know the requirements that the specifications
7 impose on parties that are building products under those
8 specifications, do you?

9 A No, I didn't say that. I said that everything I know, I
10 know either from our attorneys, or from our attorneys and our
11 engineers. I didn't read the specification, directly, myself.

12 Q You don't have any firsthand knowledge, correct?

13 A Yes. That's correct.

14 Q You don't know, for example, whether CSS requires
15 authentication between a DVD drive and the player device before
16 playing back a DVD. Correct?

17 A I don't know the details of how the authentication method
18 works. I certainly understand that the content is encrypted
19 when it's on the disc, and then obviously it's played on the
20 screen in an unencrypted way, so there clearly has to be some
21 authentication protocol to validate that a player is licensed
22 to play the discs.

23 But I don't know the details of the authentication
24 protocol, no.

25 Q You told your legal team and the engineering team that you

1 wanted them to follow the law, is that right?

2 **A** Absolutely.

3 **Q** And that includes both the letter of the law, that is, the
4 words within the specifications, and the spirit of the law,
5 which is what the law was intended to do. Would that be
6 accurate?

7 **A** It would certainly be my direction that they follow the
8 letter of the law and their interpretation of all relevant
9 aspects of the law, which I would guess -- whether that would
10 be their interpretation of the spirit of the law, I would leave
11 to them.

12 **Q** I'm asking about your interpretation of the spirit of the
13 law. Isn't it a fact that your instructions to Counsel and
14 engineers was that they were to follow both the letter and the
15 spirit of the law? That's what you said in your deposition,
16 correct?

17 **A** Yes. I believe I said the letter of the law and the
18 spirit of the law, as they understood them.

19 **Q** As far as you know, the people who would be most
20 knowledgeable about what your engineering team did to try to
21 comply with the CSS license would be the engineers, themselves.
22 Right?

23 **A** I would think it would be a combination of the engineers
24 and the lawyers, because they each have deep knowledge to bring
25 to those discussions.

1 Q Sir, are you aware of any documents that have been
2 provided to the other side in this case to my clients, the
3 studios, about any of this advice that you've referred to
4 several times from the lawyers to the engineers?

5 Do you know if that's happened?

6 A I -- no, other than the fact that we were very thorough in
7 our discovery, and provided all the documents that we were
8 supposed to. I don't know the specifics of which documents
9 they were, no.

10 Q Is it your understanding that the movie studios have been
11 provided the advice that you say the lawyers and the engineers
12 were relying upon, the advice that they gave to you, upon which
13 you relied? Do you know if that information has been provided
14 to the studios at all?

15 A No, I don't know that. I know that we provided everything
16 that we were obliged to provide, and were very thorough in how
17 we did that.

18 Q For instance, you testified that the second level of
19 encryption, the AES encryption that is placed upon the
20 RealNetworks devices, was placed upon those devices because the
21 lawyers felt that that would be a good thing to do in terms of
22 protecting the content. Correct?

23 A That's correct.

24 Q And you want to leave it at that?

25 A Is there -- is there a question?

1 Q I'll rephrase. Is that the basis, the only basis, upon
2 which RealNetworks placed the second level of encryption on the
3 devices?

4 A Well, in terms of all the reasons that the lawyers gave
5 the advice they gave, I would say I need to ask our lawyers.

6 My layperson's perspective is the following: Our
7 legal team gave us that advice. They were categorical and
8 unequivocal about it. And I knew that Kaleidescape also had a
9 second layer of encryption, and Kaleidescape had won a case in
10 the California courts, a different court.

11 So it made sense to me that our lawyer's advice was
12 consistent at sort of a technological sort of strategy level
13 with the implementation that Kaleidescape had done. So, it
14 made sense to me.

15 So I wouldn't say it's one of those things that I
16 drilled into, to understand all of the component reasons that
17 went into the recommendation.

18 Q Has any of that technological strategy-level type of
19 documentation that you just referred to in your last answer
20 been provided to the movie studios that would reflect this
21 advice that you say you received from your legal counsel as to
22 why the second layer of encryption should be placed on the
23 products?

24 A I have no idea.

25 Q As far as you know, the people who would be most

1 knowledgeable about what the engineering team did or did not do
2 would be people like Mr. Chasen, Mr. Barrett, Mr. Buzzard,
3 Mr. Bielman, the engineers who designed it. True?

4 **A** I'm sorry. Would you repeat the question, please?

5 **Q** Sure. The people who would be most knowledgeable about
6 what your engineering team did in order to try to comply with
7 the CSS license would be the engineers who work at
8 RealNetworks, such as Mr. Chasen, Mr. Barrett, Mr. Buzzard and
9 Mr. Bielman. Right?

10 **A** No, I think it would be both those people and the legal
11 people, because understanding whether something applies with a
12 license often is a fairly technical legal matter, as well as a
13 technical engineering matter.

14 **Q** Do you understand ARccOS and RipGuard to be copy
15 protection schemes?

16 **A** No, I don't.

17 **Q** What's the basis for your belief that they are not?

18 **A** I would say the primary basis is my personal experience
19 using Kaleidescape, where Kaleidescape would be able to
20 successfully save any disc that I gave it.

21 And, while I didn't know which of the discs had these
22 technologies in them, I certainly figured, given that I've got
23 600-700 discs, that some of them must have. And since I had
24 never seen a case of a disc that wasn't successfully saved by
25 Kaleidescape, my belief is that whatever they do, they don't

1 operate as an effective copy protection scheme.

2 Q Did anyone on the engineering team at RealNetworks ever
3 tell you that ARccOS and RipGuard were not copy protection
4 schemes?

5 A Did anybody on the engineering teams ever tell me that. I
6 only had very sort of conceptual discussions. And because to
7 my knowledge -- and I've certainly never seen specifications on
8 what these are -- I would say that we don't fully know
9 everything about what they do.

10 But my conversation with the engineers has suggested
11 that they are fundamentally technologies that inject errors on
12 the disc in various ways that don't affect the sort of consumer
13 playable parts of the disc. And so therefore, if you can play
14 a disc fully, the way that -- one of the ways to save a disc is
15 to just save the parts that you're playing. So it seems to
16 me -- and again, based on a layperson understanding -- that
17 that does not make it a copy protection scheme.

18 Q You don't know how your engineering teams tried to deal
19 with discs that were protected by ARccOS or RipGuard, do you?

20 A I know that I gave them feedback, "Hey, you know, works
21 with Kaleidescape, Kaleidescape does it, you guys ought to be
22 able to figure it out." But beyond that, I was not tracking
23 quite closely, no.

24 Q And you said that Kaleidescape does it so there must be a
25 legitimate way to figure it out. That's what you said a few

1 minutes ago on direct examination, correct?

2 **A** That -- that wasn't is my belief, yes.

3 **Q** And you understand that the Kaleidescape matter is on
4 appeal now, right?

5 **A** I certainly do, yes.

6 **Q** And so, you don't have any understanding one way or the
7 other whether there has ever been a finding by any court that
8 Kaleidescape does or does not violate -- or -- violate the DMCA
9 with regard to the protections ARccOS and RipGuard?

10 **A** Would you please restate the question?

11 **Q** Sure. You don't have any information, one way or the
12 other, as to whether or not the Kaleidescape product violates
13 the DMCA in relation to how it deals with ARccOS or RipGuard.

14 **A** I think that's right.

15 **Q** You don't even know whether that was an issue in the
16 Kaleidescape matter, that is, whether it violated the DMCA, do
17 you?

18 **A** I know that the -- the litigants in that case were the DVD
19 CCA, and not the MPAA members. But I don't know all the
20 specific claims that they made.

21 **Q** Now, sir, did you know that Mr. Jeff Chasen, who -- strike
22 that.

23 Mr. Chasen was the leader of the Vegas production
24 team. Correct?

25 **A** Development team, yes.

1 Q Development team?

2 A That's the term we would use, yes.

3 Q And, do you know that Mr. Chasen acquired computer code to
4 try to get around ARccOS from a company in the Ukraine called
5 Rocket Division?

6 A No, I don't.

7 Q Do you have any information about that, one way or the
8 other?

9 A Nope.

10 Q Have you ever seen any of the e-mails reflecting his
11 communication with the Rocket Division?

12 A No.

13 Q Let me ask you to take a look at what has previously been
14 marked as Exhibit 76.

15 MR. WILLIAMS: Your Honor, may I hand it to the
16 clerk? I think you may have it, but I have another copy.

17 THE COURT: I think I do, yes. I do.

18 (Witness examines document)

19 MR. WILLIAMS: Your Honor, first of all, I would like
20 to offer Exhibit 76. I think it may already be in evidence.

21 THE COURT: I think it's in.

22 MR. WILLIAMS: Thank you.

23 THE COURT: Is that correct, Tony?

24 THE CLERK: Yes.

25 THE COURT: 76, yes.

GLASER - CROSS EXAMINATION / WILLIAMS

1 **MR. WILLIAMS:** Thank you.

2 **BY MR. WILLIAMS:**

3 **Q** If you would, sir, turn to Page 781 in the lower
4 right-hand corner.

5 **A** Would you like me to read the whole document first, or no?

6 **Q** I would like to direct you to that page, if I could, Page
7 781.

8 Do you see about a third of the way down the page --
9 and we can display that if you have that, Mr. Bales -- a third
10 of the way down the page there's an e-mail from Jeff Chasen to
11 Anton at rocketdivision.com. Do you see that?

12 **A** Yes, I do.

13 **Q** The subject matter is "Arccos"?

14 **A** Yes, I do.

15 **Q** The date is November 27, 2007?

16 **A** Yes.

17 **Q** You don't have any reason to doubt that Mr. Chasen's
18 authentication of this document at his deposition was in error?

19 **A** None at all.

20 **Q** You see that he says here, he's asking Mister -- the
21 fellow from Rocket Division (As read):

22 "Any more word on the estimated work to
23 allow for saving of ARccOS DVDs? This
24 turns out to be one of the more urgent ones
25 for us. We have some ideas but tend to

1 think you guys could do it faster.

2 Thanks."

3 Do you see that?

4 **A** Yes, I do.

5 **Q** Now, first of all, do you have any understanding as to why
6 it was that Mr. Chasen needed to or wanted to speak with Rocket
7 Division located in Kiev in the Ukraine, as opposed to a
8 computer programmer a little closer by?

9 **MR. CUNNINGHAM:** Your Honor, if I may, I would make a
10 403 and an argumentative objection. The foundation is
11 established, this witness didn't have such conversations, he's
12 not on this document. This really is argument about this
13 issue.

14 **THE COURT:** Well, as I understand, the question is
15 "Do you know." And so, you may only testify what you know of
16 your own personal knowledge.

17 **THE WITNESS:** You know, I've never seen this document
18 before. Literally, you handed it to me right now. So, I'm not
19 sure -- please ask your question again, but I'm doubtful I'm
20 going to be very helpful to you.

21 **BY MR. WILLIAMS:**

22 **Q** Do you have any understanding as to why it was that
23 Mr. Chasen enlisted the services of a company located in Kiev
24 in the Ukraine in order to help to write code relating to
25 ARccOS, when there was a few computer programmers a little

1 closer by, perhaps in California or in Seattle?

2 **A** No, I don't. I would simply point out that we use
3 software development firms all over the world. In fact, our
4 second-largest R&D center for RealNetworks is in Seoul, Korea.

5 So, we are a very global company in how we develop
6 products, and we draw on technical expertise all around the
7 world.

8 **Q** You have had no discussions with Mr. Chasen or anyone else
9 at the company about why it was that he went to Rocket Division
10 in particular. Correct?

11 **A** That's correct.

12 **Q** All right. Let's turn to the page before that, Page 780.
13 In the middle of the page, there is an e-mail at 5:09 a.m.
14 (sic) on November 27, 2007.

15 **A** I'm sorry, which page?

16 **Q** Page 780, in the lower right-hand corner. Do you have
17 that?

18 **A** I do, but I -- I didn't see, I see 5:19 a.m. Yes, okay.

19 **Q** Okay, from Anton Kolomyeytsev. Do you see that?

20 **A** Yes, I do.

21 **Q** And he writes, "Jeff" -- and he has three things he lists.
22 I'll direct your attention to the third one. He writes:

23 "With Arccoss (sic) the task appeared
24 to be a little bit -- a little harder than
25 we thought. That's why no update. We have

1 been F... OK, FIGHTING with it for two
2 weeks and no big success yet. The only
3 thing we've found is - bad blocks location
4 has nothing to do with the file system
5 (mastering) as there's no 'spots' uncovered
6 with the data."

7 And then he goes on:

8 "We're reverse-engineering other
9 grabbers at this moment to find the system
10 in the IFO parsing."

11 Do you see that?

12 **A** Yes, I do.

13 **Q** Now, did you have any knowledge as to whether or not
14 Mr. Chasen was enlisting the services of someone to
15 reverse-engineer some other grabbing software?

16 **A** No, I don't.

17 **Q** Please turn to the page before that, 779. Do you have
18 that before you?

19 **A** Yes, I do.

20 **Q** At the bottom of the page, there's an e-mail at 12:57 p.m.
21 on December 3rd, 2007, from Mr. Kolomyeytsev to Mr. Chasen.
22 Chasen. He writes, "Jeff" --

23 **A** On 779? Okay, yes.

24 **Q** Correct. At the very bottom:

25 "The problem is I'm building MORE bad

1 blocks than the disc actually has."

2 And then carries over to the next page:

3 "Is there any way for you to send us a
4 few more 'protected' DVDs with ARccOS?"

5 Do you see that?

6 **A** Yes, I do.

7 **Q** Did you have any knowledge as to whether or not Mr. Chasen
8 would be sending DVDs to be reviewed by Mr. Kolomyeytsev?

9 **A** No, I don't.

10 **Q** If you look a little bit higher up on the Page 779,
11 there's an e-mail from Mr. Chasen to Anton at Rocket Division.
12 Do you see that? Dated December 3rd?

13 (Witness examines document)

14 **A** Is that the one that's 11:34 p.m.?

15 **Q** Actually, before I do that, the one that's at 11:04 p.m.
16 near the bottom of the page, from Mr. Chasen to Anton, do you
17 see that?

18 **A** Yes, I do.

19 **Q** Mr. Chasen writes:

20 "We can send you five more."

21 Do you see that, sir?

22 **A** Yes, I do.

23 **Q** And then you see that in the middle of the page, there is
24 one from Anton at 1:15 p.m., saying:

25 "Excellent! What do you need from me

1 to proceed? Except my home address?"

2 Do you see that?

3 A Yes, I do.

4 Q And then Mr. Chasen says, above that, in the e-mail at
5 11:34:

6 "I just hope they make it through

7 customs."

8 Do you see that?

9 A Yes, I do.

10 Q Now, were you ever advised at any time that Mr. Chasen was
11 going to send DVDs over to Kiev to be reviewed by Rocket
12 Division, so that they could try to get around ARccOS?

13 A No, I was not.

14 Q Did you have any knowledge as to whether or not Mr. Chasen
15 was going to try to bypass Customs in the Ukraine, in order to
16 get those DVDs there?

17 A No, I don't. And I don't even think this says anything
18 about bypassing Customs. I think it says "I hope they make it
19 through customs."

20 Q Okay. Let's look at the top of the page. Page 779. Same
21 page.

22 Anton writes at 1:42 p.m., December 3rd, 2007. He
23 provides his address. Do you see that?

24 A Uh-huh.

25 Q Is that yes?

1 **A** Yes.

2 **Q** And then he writes:

3 "Now something which is CRITICAL," in
4 all caps. "You need to send the stuff to
5 me as a PERSON. So use the address below
6 and don't reference the company name or
7 we'll indeed have a problem with the
8 customs. OK? This is REALLY important!"
9 With exclamations. Do you see that?

10 **A** Yes, I do.

11 **Q** Please turn to the page before that. The final, the Page
12 778. And I'll direct your attention here to an e-mail in the
13 middle of the page.

14 At 10:35 a.on., object December 11, 2007, Anton
15 writes in response to a question in the previous e-mail about
16 whether Mr. Chasen had sent them, whether -- excuse me, whether
17 Mr. Kolomyeytsev had received them, Anton writes:

18 "Not yet... They are in Kiev but held
19 by customs. Hope this week."

20 And then he says, later on:

21 "I'll have to run it against multiple
22 DVDs to find out is the whole idea correct
23 or not. Will be busy with the CSS grabber
24 and CSS related modifications applied to
25 the StarPort driver."

1 Do you see that?

2 **A** Yes, I do.

3 **Q** Do you know what a StarPort driver is?

4 **A** No, I don't.

5 **Q** Do you know what a CSS grabber is?

6 **A** No, I don't.

7 **Q** Do you know how those relate to CSS modifications?

8 **A** No, I don't.

9 **Q** Do you know why Mr. Chasen, Mr. Chasen would be
10 communicating with this gentleman in Kiev -- when Mr. Chasen
11 was already in possession on behalf of RealNetworks of a
12 license with the DVD CCA, why would he be asking or talking
13 about CSS grabbers? Do you know?

14 **A** I have no idea.

15 **Q** Would it bother you, sir, if what Mr. Chasen was doing was
16 communicating with an individual overseas for purposes of using
17 whatever methods were necessary, legal or illegal, DVD -- or
18 excuse me, CSS grabber devices, in order to assist in breaking
19 ARccOS?

20 **MR. CUNNINGHAM:** Objection. It's an improper
21 hypothetical. And really, it's irrelevant.

22 **THE COURT:** Got a little too much in there. It's not
23 borne out by the evidence.

24 **MR. WILLIAMS:** I'm sorry. I'll restate state it.
25

1 **BY MR. WILLIAMS:**

2 **Q** So, you understand that as of December of 2007,
3 RealNetworks already had a license with the DVD CCA with
4 respect to CSS. Correct?

5 **A** That's my recollection, yes.

6 **Q** Now, there is no license that is in the possession of the
7 company with regard to ARccOS and RipGuard. Correct?

8 **A** I don't know the details there. I don't know, either way.

9 **Q** Okay. Do you have any understanding as to why Mr. Chasen
10 would be -- strike that.

11 Does it bother you that Mr. Chasen was corresponding
12 with Mr. Kolomyeytsev and discussing CSS grabbers and the
13 StarPort driver as it relates to trying to break CSS?

14 **MR. CUNNINGHAM:** Same objections, Your Honor.

15 **THE WITNESS:** I don't know that --

16 **THE COURT:** Hold on just a moment. I think you need
17 to reframe that.

18 **MR. WILLIAMS:** Okay, I'll lay more foundation from
19 the e-mail, itself.

20 **THE COURT:** You know, it's the "Does it bother you"
21 part that bothers me.

22 **MR. WILLIAMS:** Okay.

23 **BY MR. WILLIAMS:**

24 **Q** Let's go to the top of Page 778. Do you have 778 in front
25 of you still?

1 A 778.

2 Q Do you see the e-mail at the top of the page from
3 Mr. Chasen to Anton, dated December 11, 2007?

4 A Yes, I do.

5 Q Here, Mr. Chasen writes (As read):

6 "Hi. At this point we no longer need
7 the CSS modifications, so don't worry about
8 that (sorry for changes. Our needs are
9 constantly changing)."

10 Let me stop there. Now, sir, can you imagine a set
11 of circumstances where it would have been appropriate for
12 Mr. Chasen to be writing to Rocket Division in the Ukraine, in
13 order to get CSS modifications?

14 A Sure. I don't know what CSS modifications are, so I have
15 no idea whether this is something which is (Inaudible) or not.

16 I do know that Mr. Chasen is a very honorable and
17 reputable guy. He's been with our company about ten years.
18 And I have implicit trust in his judgment, especially knowing
19 that he would be consulting with our attorneys.

20 Q Let me ask you to turn the page to Page 777. At the
21 bottom of 777, there's an e-mail from Anton to Mr. Chasen,
22 dated December 11, 2007, where Anton writes:

23 "Jeff, ARccOS and CSS are linked most
24 of the time. In the other words, you
25 absolutely need CSS decoder to get access

1 to the unencrypted content."

2 Do you see that?

3 **A** Yes, I do.

4 **Q** Do you understand that, based on a fair reading of that,
5 that Anton is saying that you need to have a CSS decoder if you
6 are going to try to access a DVD that has ARccOS on it as well?

7 **A** I would have to know a lot more about this, to give you a
8 definitive reading there. I certainly know that you need to
9 decode CSS in order to play DVDs, but anything beyond that,
10 it's a lot of stuff that I'm seeing for the first time.

11 **Q** Whether or not you are seeing it for the first time, do
12 you have an understanding that CSS and ARccOS work together,
13 and that CSS needs to be broken, if you will, in order to copy
14 a CSS-protected DVD?

15 **A** No, I have no such understanding. And in fact, my
16 experiences with Kaleidescape lead me, sort of as an empirical
17 matter, to think that that's probably not the case.

18 **Q** Take a look at the e-mail above it. This one's from
19 Mr. Chasen, dated December 11, 2007. He writes (As read):

20 "We are ok on the CSS front, we have
21 all that covered. We are just left with
22 the need to be able to copy discs
23 (data/sectors) with arccos on them. We do
24 not need access to the unencrypted content
25 for our needs. Ok, keep me posted on the

1 ARccOS stuff."

2 Do you see that?

3 A Yes, I do.

4 Q And, you understand why Mr. Chasen would be saying to
5 Anton that ARccOS -- excuse me, that CSS is covered, because
6 the company already had a license. Right?

7 A I wouldn't jump to any conclusions that I understand this
8 whole thread, because it's a very intricate set of topics.
9 Certainly I do know that we had a CSS license. But beyond
10 that, I wouldn't want to speculate on what this does or doesn't
11 mean.

12 Q Let me ask you to go to the top of the page. Here's an
13 e-mail to Mr. Chasen from Anton date, dated December 11, at
14 11:38. He writes (As read):

15 "Jeff, it's not gonna work this way!
16 If you'd copy CSS protected movie you lose
17 the CSS keys as they are not stored in the
18 general data stream. So resulting 'copy'
19 will consist of garbage and trash mixed in
20 1:1 proportion... What you have really have
21 to do is:"

22 And then he lists four things. Do you see that?

23 A I see the words. If you want, I'll take a few minutes to
24 read them.

25 Q Do you think it's a fair reading of that passage, sir,

1 that Anton is telling Mr. Chasen about the linkage between
2 ARccOS and CSS?

3 A I would have to spend much more time reading it, to cast a
4 judgment on what this does or doesn't mean.

5 Q Okay. Let's skip to the last page. On Page 776 of
6 Exhibit 76, at the bottom of the page, Mr. Chasen writes to
7 Anton, on December 11, 2007. And he says:

8 "Trust me, we know what we are doing.
9 We" -- and there's a misspelling, J-A-V-E,
10 it probably means "have" -- "We have all
11 the CSS stuff handled (authentication,
12 playback, disk, title, keys) - can't say
13 more in the e-mail. All I need you guys to
14 do is help us with the copying of data from
15 DVD discs that have arccos. Sorry I can't
16 go in more details, but the last mile for
17 us is the ability to copy data of a arccos
18 disc (that is we need to know which sectors
19 NOT to copy)."

20 Do you see that?

21 A Yes, I do.

22 Q Now, at this time, the company had a CSS license. Right?

23 A I believe that's correct.

24 Q And you see where Mr. Chasen says he cannot say more in an
25 e-mail. Correct?

1 **A** I see that, yes.

2 **Q** All right. Now, can you imagine that one explanation for
3 why Mr. Chasen wouldn't want to explain that the company
4 already had the CSS license in its possession was that he was
5 talking with someone whose business was predicated on using
6 illegal measures to break the protections on the DVDs?

7 **MR. CUNNINGHAM:** It's at least irrelevant, what
8 Mr. Glaser's imagination might reveal about an e-mail he's
9 never seen before.

10 **MR. WILLIAMS:** May I be heard, Your Honor?

11 **THE COURT:** No, because we're not going to rely upon
12 any witness's imagination.

13 You know, if you want to ask him if it's a reasonable
14 explanation, that may be appropriate. But, I'm worried about
15 this imagination.

16 **BY MR. WILLIAMS:**

17 **Q** Sir, does it concern you in any way that Mr. Chasen wrote
18 in the e-mail that he could not say more in the e-mail --

19 **THE COURT:** I gave you the key to how to do it.

20 **MR. WILLIAMS:** I'm sorry, Your Honor?

21 **THE COURT:** I don't care whether it concerns him.
22 The question is, is it a reasonable explanation, given what he
23 knows about all the circumstances, et cetera. Okay?

24 **MR. WILLIAMS:** Okay.
25

1 BY MR. WILLIAMS:

2 Q Do you think it's a reasonable explanation for Mr. Chasen
3 to say that he cannot say more in an e-mail, given what you
4 know about the CSS specifications, the fact that the company
5 already had a CSS license, and the fact that Mr. Kolomyeytsev
6 continually is talking about other things he must do to grab
7 CSS or to bypass CSS?

8 A I'm sorry, what would be a reasonable interpretation of
9 what?

10 Q I was just trying to use the Court's question, but let me
11 try to move on.

12 Did you ever discuss with Mr. Chasen the fact that he
13 was in these communications with the gentleman in the Ukraine?

14 A No, I did not.

15 Q Does it concern you at all -- strike that.

16 You believe that the people at your company act
17 honorably, correct?

18 A Yes, I do.

19 Q You want them to act honorably, right?

20 A Of course.

21 Q You have seen the e-mails talking about Customs and how
22 they try to send the DVDs to the individual's home in order to
23 bypass them. You saw that, right?

24 A Not in order to bypass them. I read it as in order to get
25 it through Customs quickly.

1 Q To get it through Customs quickly, or for it not to go
2 through Customs?

3 A I read it as to get it through Customs quickly.

4 Q Let me ask you this. At the top of the page --

5 A Again, I just read it for the first time here.

6 Q At the top of the page, there's an e-mail from Anton to
7 Mr. Chasen, dated December 11, 2007. And he writes to
8 Mr. Chasen:

9 "OK, got everything... I'll still need
10 DeCSS cracker as it (sic) looks like I'll
11 also have to read some places inside the
12 VOBs. But I'll try to skip this step."

13 Do you see that?

14 A Yes, I do.

15 Q Are you familiar with the term "DeCSS cracker"?

16 A Not precisely, no.

17 Q Do you believe that Mr. Chasen would be aware of what the
18 DeCSS cracker is, in connection with his work?

19 A You are asking me to speculate whether somebody who works
20 for me knows a term that I don't know. I don't -- I don't
21 know.

22 Q You know that there are some types of software that are
23 legal, and some that are not legal. Correct?

24 A Yes.

25 Q Okay. And you know that there are some types of software

1 specifically with regards to CSS that are not legal, that strip
2 off the CSS protections. Correct?

3 **A** I don't know the details of the law in that regard. I
4 know there's a very complicated set of cases on the matter of
5 what's legal and what's not legal, as a speech matter. And,
6 and other matters.

7 And so, I'm really not an expert in all those
8 details.

9 **Q** And you don't know whether the DeCSS cracker is an illegal
10 ripper, is that correct?

11 **A** Don't know what a DeCSS cracker is, so therefore, I don't
12 know whether it's legal or illegal.

13 **Q** Same answer for a CSS grabber?

14 **A** That's correct.

15 **Q** Same answer for the StarPort driver?

16 **A** Yeah.

17 **THE COURT:** And, for my benefit, what is a StarPort
18 driver?

19 **THE WITNESS:** I don't have the slightest idea, Your
20 Honor.

21 **THE COURT:** You don't know what it is, either, and
22 he's using an acronym --

23 **THE WITNESS:** The other two I can kind of guess. But
24 the StarPort one sounds like something out of Star Trek or
25 something. I don't know.

1 **THE COURT:** Okay. It has no significance to you.

2 **THE WITNESS:** That's correct, Your Honor.

3 **THE COURT:** And he uses an acronym, VOB. Do you
4 understand what that means?

5 **THE WITNESS:** I think that's the name of the video
6 object files, as stored on the file system of the DVD.

7 **MR. WILLIAMS:** Thank you, Your Honor.

8 **BY MR. WILLIAMS:**

9 **Q** Do you know the percentage of time, of Mr. Buzzard's time,
10 that he spent as of December of 2008, trying to work around the
11 ARccOS protections on DVDs?

12 **A** Don't have the slightest idea.

13 **Q** You have not been told by any source that he spent
14 50 percent of his time, as recently as December of 2008, trying
15 to get around the ARccOS protections?

16 **A** That's correct.

17 **Q** Your answer would be the same with regard to RipGuard?

18 **A** That's correct.

19 **Q** So far as you know, the people who would be most
20 knowledgeable, again, about the time that was spent with your
21 engineering team trying to get around the ARccOS protections
22 would be the engineers, themselves. Is that true?

23 **A** Well, there's a compound sentence there. I don't know
24 what, if any, time was spent working on these issues versus
25 other methods of the project. I didn't see very aggregated

1 schedules.

2 Q I'm sorry, what was that?

3 A I see schedules that are aggregated schedules, you know,
4 how many weeks to ship, how many engineers do we have,
5 et cetera.

6 Q Now, sir, RealDVD, the product that is sold to market, can
7 actually copy a DVD that has been borrowed from a friend.
8 Right?

9 A That's correct.

10 Q And it can copy a DVD that's been rented?

11 A That's correct.

12 Q And it can copy a DVD that is owned, right?

13 A Yes.

14 Q Now, you know, sir, do you not, that some people are going
15 to use RealDVD to make copies of movies that they do not own,
16 right?

17 A We're working very hard to have that number be as low as
18 possible. And I think it would be great if it was zero.

19 Q You recognize that some people are going to use it in that
20 manner. Do you not?

21 A I would say, recognize that there's a chance of it, and
22 work really hard to keep the chance as low as possible.

23 But again, those people, if they want a product that
24 lets them rip DVDs they don't own that's not going to put a
25 screen up every time telling them not to do it, it's not going

1 to preserve the CSS, there's dozen of products out there that
2 do that.

3 You just have to Google "DVD ripper," and you'll find
4 a page full of them. So, our product, our product, is not
5 designed to appeal to those people.

6 **Q** Let me ask you about that. You recognize that people
7 sometimes have their own reasons for making copies of DVDs that
8 they do not own. Right? They can do it for a variety of
9 reasons. Correct?

10 **A** I can -- I can conceive of a variety of reasons. I
11 wouldn't say I know it for a fact.

12 **Q** All right, well, you do know for a fact that some people
13 will make copies, using a technology on which copies are not
14 supposed to be used. Right?

15 **A** I know that people use products like HandBrake, so I
16 assume that they're using it with DVDs that they don't own some
17 percent of the time.

18 **Q** You own a Kaleidescape unit, right?

19 **A** That's right.

20 **Q** You bought that in 1995?

21 **A** '95 or early-- no, 2005, or early 2006. I'm pretty sure
22 it didn't exist in 1995.

23 **Q** And you have had your own reasons why you have permitted
24 someone to use your Kaleidescape unit to make copies of movies
25 that you did not own. Correct?

1 A I wanted Mister -- if you're referring to Mr. Barrett?

2 Q Would you just answer the question I'm asking?

3 A I'm --

4 Q The question that I'm asking is, you have had your own
5 reasons to let someone use your Kaleidescape unit that you have
6 in your home to make copies of DVDs that you do not own.

7 Right?

8 A I actually did not specifically invite Mr. Barrett to use
9 my Kaleidescape any particular way. I invited him to go try
10 it.

11 Q You need what? I'm sorry?

12 A I invited Mr. Barrett to my house to try the Kaleidescape,
13 but the primary reason I wanted him to try it was for him to
14 understand the user interface, and how it worked.

15 And, I had plenty of DVDs at my house for him to load
16 on, if that's what he wanted to do.

17 MR. WILLIAMS: Your Honor, let me show the witness
18 Exhibit -- Hearing Exhibit 231.

19 BY MR. WILLIAMS:

20 Q Sir, Exhibit 231 is a string of e-mails between you and
21 Mr. Barrett, dated September 12, 2007, and a few days before.
22 Correct?

23 A That's correct.

24 Q About in the middle of the page there's an e-mail from you
25 to Mr. Barrett -- excuse me. I'll start at the bottom.

1 There's an e-mail at the bottom from Mr. Barrett to
2 you, dated September 11, 2007. He asks you a bunch of
3 questions -- do you see that -- about your Kaleidescape unit?

4 **A** Yes, I do.

5 **Q** And then just above that, there's an e-mail from you to
6 him, answering him. Do you see that?

7 **A** Yes, I do.

8 **Q** You write:

9 "Why don't you come over and mess
10 around with it as much as you want. The
11 unit with the ripper is in our bedroom
12 which we don't use much during the day.
13 Tomorrow would be fine..."

14 Do you see that?

15 **A** Yes, I do.

16 **Q** And then two e-mails above that, I'm skipping the one
17 about the allowing him access to your home through the manager,
18 do you see that?

19 **A** Yes.

20 **Q** The one above that is at 1:25 p.m., on September 12, you
21 wrote -- excuse me, Mr. Barrett wrote:

22 "I did put 2 movies on the system --
23 The Butterfly Effect and 'The Big Hit' (a
24 DVD made from a TiVo copy - it's listed as
25 a Sony DVD Recorder Disc). I had to

1 promise to delete them to complete the
2 import process but could not find a way to
3 actually delete the movies."

4 Do you see that?

5 **A** Yes, I do.

6 **Q** And then, you write him back at the top of the page,
7 right?

8 **A** Yes, I do.

9 **Q** And you say:

10 "Glad it was useful, and thanks for the
11 movies!"

12 Correct?

13 **A** Yes, I did.

14 **Q** Now, Mr. Barrett wrote to you, saying that he had to
15 promise to delete the movies in order to complete the import or
16 copying process. Right?

17 **A** Yes.

18 **Q** And he wasn't able to do that. Right?

19 **A** Yes. I've learned that one of the features of the
20 Kaleidescape product --

21 **Q** There's no question pending, sir. I'm just asking, he
22 asked you whether he could do it, he said he promised to delete
23 it, and he was not able to. Is that correct?

24 **A** Yeah, I was answering that question. But, okay.

25 **Q** Is it correct or not that he asked you to do that?

1 A Sure.

2 Q Okay. And then at the top, you say "thanks for the
3 movies," right?

4 A Yes, I do.

5 Q Now, you didn't say at the top of this e-mail chain, "You
6 need to delete the movies," or "You shouldn't have been making
7 copies of movies that I, Rob Glaser, don't own." Right? You
8 didn't say that.

9 A Of course that's right, I didn't say that.

10 Q Okay. Now, you had your reasons for permitting
11 Mr. Barrett to experiment with the Kaleidescape product, and
12 see how it worked. Right?

13 A Yes.

14 Q Now, can you imagine, sir, that people who buy your
15 product would have their own reasons, in their own minds, as to
16 why they would want to make a copy of a movie that they did not
17 own?

18 A Sure, I could imagine reasons.

19 Q And you, in fact, at the time that this product was
20 designed, you knew that people might have those reasons to want
21 to make copies of movies that they did not own, and that they
22 would use your product for that purpose. Right?

23 A No, that's not what I would say I knew.

24 What I knew was that there were many products out
25 there that let people rip movies, strip off the CSS, and do all

1 that without any warnings, without any inhibitions on what to
2 do with the copies. And that we were both designing our
3 product and marketing our product for legitimate use.

4 And I thought that the vast majority of the users, if
5 we did our job right, would be legitimate users, using the
6 product legitimately, because if they didn't want to be
7 legitimate users there were so many other alternatives that
8 they could go to, and our product would be an inferior product.

9 So it didn't make sense to me that there would be a
10 significant amount of illegitimate usage, because our product
11 is not good for that.

12 Q Now, you say that the vast majority of users would use it
13 for the lawful purpose, right? That's your understanding?

14 A That's my belief, yes.

15 Q Right. And that presupposes that a number of people will
16 not use it for that purpose.

17 A No, when I say "the vast majority," it could be 100
18 percent, it could be 97 percent. It could be either.

19 Q Have you done some study to know --

20 A No. I'm simply saying as a logical matter, the statement
21 "the vast majority" does not preclude 100 percent.

22 Q The point is that you cannot control other people's
23 actions. You cannot police them. Right?

24 A We can steer them to the right behavior, and we can build
25 a product that reinforces the intended behavior, and we can

1 build a product that enables people to have fair use rights.

2 And generally speaking, my belief is that if you do
3 that stuff right, you can really steer consumers to lawful
4 behavior, the vast majority of the time.

5 Q Now, you were already shown by Counsel the quote from the
6 article in the AP, in the article by Rachel Metz, in which you
7 said (As read):

8 "If you want to steal, we remind you
9 what the rules are, and we discourage you
10 from doing it, but we're not your nanny."
11 You recall that, right?

12 A Yes, I do.

13 Q And the point of that quotation from you was to suggest to
14 people out in the world, "Look, yeah, we tell you what the
15 rules are, but we're not your nanny," right? "We can't control
16 what you do."

17 Isn't that what you were saying?

18 A No, it was not.

19 (Computer strikes a chord)

20 BY MR. WILLIAMS:

21 Q What did you mean -- I'm not going to ask you to say it
22 again. The fact of the matter is --

23 THE COURT: That doesn't mean you hit the jackpot.

24 MR. WILLIAMS: Yeah.

25 (Laughter)

1 **MR. WILLIAMS:** Your Honor, I would offer Exhibit 231.

2 **THE COURT:** 231?

3 **MR. CUNNINGHAM:** No objection.

4 **THE COURT:** No objection? Okay, Exhibit 231 is
5 admitted.

6 (Exhibit 231 received in evidence.)

7 **BY MR. WILLIAMS:**

8 **Q** Sir, a major assumption underlying Real's business plans,
9 whether they relate to the RealDVD product or other products
10 that Real makes, is that consumers want access to high-quality
11 content that they can play anywhere for free.

12 Isn't that right?

13 **A** No, it's not correct. In fact, as I said earlier, the
14 majority of our revenue comes from consumers paying for
15 content, wrapped around technology that we build, and services
16 that we build.

17 **Q** Do you deny that a major assumption underlying your
18 business plans is that consumers want access to high-quality
19 content that they can play for free?

20 **A** Well, we are in many businesses. But I would say the vast
21 majority of our businesses are based on consumers paying for
22 content or services.

23 Probably 80-plus percent of our revenue is tied to
24 consumers paying for a service that includes content, or for
25 the content, directly.

1 Q I'm not asking you whether your products require that
2 someone pay or don't pay. What I'm asking you is whether or
3 not in your business models, one of the underlying assumptions
4 of the business plan is that consumers, left to their own
5 devices, will want to have access to high-quality content that
6 they can play for free.

7 A And I'm saying that's not one of the fundamental
8 principles around which we have organized our company.
9 Certainly there are -- there is free content out there, and we
10 offer consumers access to legitimate free content, and we don't
11 offer consumers access to content that is not legitimately
12 distributed that way.

13 Q Let me ask you to take a look at Exhibit 599 to your
14 deposition.

15 Sir, Exhibit 599 is an e-mail -- has as its cover an
16 e-mail from Mr. Chasen to you, dated November 1, 2007, with
17 slides for a 10:00 a.m. format meeting.

18 Do you see that?

19 A Yes, I do.

20 Q And under the attachments it says "Format mtg with robg."
21 Do you see that?

22 A Yes, I do.

23 Q In the e-mail, Mr. Chasen says to you:

24 "Rob, here are the slides we plan to
25 use as a framework for our discussion."

1 Right?

2 **A** That's correct.

3 **Q** Let me ask you to turn to Page 12 of the document.

4 **MR. WILLIAMS:** I would offer Exhibit 599.

5 **THE COURT:** Any objection?

6 **MR. CUNNINGHAM:** None.

7 **THE COURT:** And, we're dealing with this as the
8 numbers that were marked at --

9 **MR. WILLIAMS:** At the deposition, correct.

10 **THE COURT:** At the deposition. So, 599 is admitted.

11 **MR. WILLIAMS:** Thank you, Your Honor.

12 (Exhibit 599 received in evidence.)

13 **BY MR. WILLIAMS:**

14 **Q** On Page 12, sir, there is a slide, that's Slide 12. And
15 there's a bullet point from the bottom, the second from the
16 bottom, that says (As read):

17 "Major assumptions (why we think this
18 would succeed): Consumers want access to
19 high quality content, to play anywhere, for
20 free. Consumers are willing to accept some
21 advertising for free, with flexible
22 content."

23 Do you see that?

24 **A** Yes, I do.

25 **Q** Now, at least with respect to the idea that's forwarded on

1 this page, which is called "Ad-insertion management
2 wrapper/client," a major assumption of this proposal is that
3 consumers want access, if they can get it, to products that
4 they can play for free. Correct?

5 **A** You're asking me whether that is a -- a statement on this
6 slide, on this one point of one idea of one presentation of one
7 of a series of product idea meetings we have in the year.

8 And the answer is yes, it is.

9 **Q** I'm asking you whether one of the major assumptions of
10 your business plans is that consumers are willing -- excuse me
11 that consumers want high-quality content for free if they can
12 get it.

13 **A** And that's where I'm saying no, I don't believe that to be
14 the case. Because you're looking at one specific line of one
15 specific idea of one specific new product idea meeting, of
16 which we have many in the course of a year.

17 So, I think it would -- it would be inaccurate to say
18 that this is one of our major strategies, because it simply
19 isn't.

20 **Q** You and your colleagues know that consumers want things
21 for free if they can get them. Isn't that right?

22 **A** I believe that consumers want value, especially in these
23 times. But "good value" doesn't necessarily mean "free."

24 **Q** Consumers want things of value for free, if they can get
25 them. Right?

1 A I believe that consumers want things legitimately, and
2 they want to do things the legitimate way, and that that's true
3 of most consumers. And that's certainly true of the consumers
4 that we target.

5 Q Please take a look at Page 5 of the same document, Slide
6 5.

7 Op this page there is a heading that says, "What do
8 consumers want?" Do you see that?

9 A Yes, I do.

10 Q And then the third bullet says, "Price: 'I want most
11 things for free (with limited advertising)'"

12 Do you see that?

13 A Yes, I do.

14 Q Do you disagree with that, with respect to --

15 A I think --

16 Q Excuse me. Let me finish the question, I'm sorry.

17 Do you disagree with that proposition with respect to
18 what consumers want?

19 A I would say that I more disagree with it than agree with
20 it, yes.

21 Q Now, if a consumer does use RealDVD to copy a DVD that
22 they borrow, they would be getting a free copy of the DVD.
23 True?

24 A They would be getting a free copy of the contents of the
25 DVD, if they use RealDVD in that way, that's correct.

1 Q And the contents would be a perfect, pristine, permanent
2 copy. Right?

3 A The contents of the disc they would have on one -- on one
4 computer or on one RealDVD player, that's correct.

5 Q Well, if they decided to get it, and to pay the extra \$20,
6 they could use it on other players in their home, or other
7 computers in their home. Right?

8 A What I'm saying is they would not have the same
9 flexibility of owning the disc, where if you own the disc, you
10 can play it on any DVD player in your house, you can play it on
11 a portable DVD player.

12 You have much more flexibility when you have a
13 physical disc than when you just have a saved copy of that
14 disc.

15 Q But they would have a free copy that they could use and
16 play forever more, correct?

17 A On that one particular device, or if they had Vegas and
18 multiple licenses on a small set device, that's correct.

19 (Reporter interruption)

20 **THE WITNESS:** I'm very sorry. If they played it on
21 one particular device, and they were happy to do that, yes,
22 they would have that right.

23 **BY MR. WILLIAMS:**

24 Q They would have that right?

25 A They would have that ability, I'm sorry. Not the right.

1 You're correct.

2 Q Now, your own focus groups showed you that copying one's
3 own DVDs is less interesting to consumers. Is that accurate?

4 A I'm not familiar with that focus group finding.

5 Q Is it your testimony that you were not updated on what the
6 focus groups were or were not saying with respect to the
7 RealDVD product?

8 A It is my testimony that my recollection is that we were
9 very excited about the market opportunity for RealDVD to the
10 target market we were trying to reach with the marketing
11 messaging that we have used, and intended to use, which was
12 focusing on people's libraries of DVDs that they owned.

13 And the fact that we felt that that was a good
14 opportunity was validated by the market research. That's my
15 recollection.

16 Q Now, you've indicated that there were certain markets that
17 you were trying to focus on, like families and the like, right?
18 And you listed three.

19 A Yes.

20 Q Do you recall that?

21 Now, another focus group or another consumer group
22 that might be interested in the product would be those people
23 who just wanted to have a really high quality machine, that
24 didn't require that they go on the Internet and try to find DVD
25 grabbers that would allow them to make a perfect, playable

1 copy, permanent copy, forever more. Right?

2 **A** I'm sorry. Can you with respect the question, please?

3 **Q** Sure. Another area of the marketplace that would be
4 interested in your machines would be people who wanted to have
5 a perfect, pristine copy, but didn't want to go to the trouble
6 of having to go the Internet to figure out how to download
7 ripping software. True?

8 **A** I'm not sure. I mean, we would have to -- I would have to
9 research on that to say whether that was a significant segment.
10 Especially given things like the nagging screen, if you will,
11 or the -- the reminder screen that says "This is only for
12 videos you own."

13 I think if you were planning to use that product
14 primarily in not that way, you'd find that screen pretty darn
15 annoying every time it came up.

16 **Q** Any -- any study ever done to tell you that?

17 **A** We've just had the product out for a couple of days, so we
18 really hadn't had enough time to have longitudinal studies.

19 **Q** Wait, you did studies before the product ever came out,
20 right?

21 **A** We did focus groups.

22 **Q** Right. Let me ask you about one of those, right now. Let
23 me show you what's been marked as Exhibit 146.

24 Sir, Exhibit 146 is a multi-page document that was
25 marked at Mr. Chasen's deposition as Exhibit 146. That's

1 entitled "Real Networks Vegas, Seattle - May 29 & 30, 2008."

2 Do you see that?

3 **A** Yes, I do.

4 **Q** This is a set of slides that sets forth the responses of
5 focus groups that were commissioned by RealNetworks. Correct?

6 **A** Well, this is only the second time I've seen this
7 document. The first time was just a couple of days ago, in
8 preparation for today's testimony.

9 So, I don't have full context on this document, what
10 it's about.

11 **Q** This one refers to Vegas, right?

12 **A** That's what it says on the cover page, yes.

13 **Q** Let me ask you to look at the next page, Page 2, Slide 2.

14 **MR. WILLIAMS:** And Your Honor, I would offer Exhibit
15 146 as identified at Mr. Chasen's deposition.

16 **THE COURT:** Any objection?

17 **MR. CUNNINGHAM:** No, I'm sure it's a Real Networks
18 document. I don't know that we have a foundation, but I don't
19 object.

20 **THE COURT:** Okay. 146 is admitted.

21 (Exhibit 146 received in evidence.)

22 **BY MR. WILLIAMS:**

23 **Q** Under "Methodology" on this page, sir, it reads (As read):

24 "A total of six small focus groups were

25 conducted at the LaunchBox lab in Seattle

1 on April 29 and 30."

2 Do you see that?

3 A Yes, I do.

4 Q And then it lists the respondents who were recruited as
5 Aspiring PC Watchers, Current Laptop Watchers, Students & Media
6 Center Owners.

7 Do you see that?

8 A Yes, I do.

9 Q Now, students are not the demographic that you've
10 described as one of the target areas for this product, correct?

11 A That's correct.

12 Q Do you have any understanding as to why a focus group
13 specifically designed for students would be one that you looked
14 for?

15 A No. And if they had asked me at the time, I would have
16 told them that's silly. Because that's not our target market.

17 Q Did you ever tell anybody that?

18 A No, because as I -- I never saw this document, and I was
19 not aware that that was a component of the one -- one part of
20 the focus groups until I saw this document just a few days ago.

21 Q Let's see what it says. It says under the fifth bullet
22 point that Real -- Real's sponsorship was not revealed.

23 Do you see that?

24 A Yes, I do.

25 Q Which means that Real sponsored this study, correct?

1 **A** I assume Real sponsored it because it's a Real document,
2 and that sentence implies it. But I don't know that,
3 definitively.

4 **Q** Please turn to Slide 10 on Page 10.

5 On Page 10, there's a listing of concerns that
6 surface. Do you see that? At the top of the page?

7 (Witness examines document)

8 **A** Yes. I was reading the concerns.

9 **Q** Okay. On the fourth bullet point, the fourth concerns
10 says:

11 "The value of 'saving' owned DVDs is
12 less interesting because this content has
13 often been viewed (conversely doing it with
14 rented DVDs raises legality for some
15 respondents)."

16 Do you see that?

17 **A** Yes, I do.

18 **Q** Does that suggest to you that this focus group
19 commissioned by Real said that saving owned DVDs is less
20 interesting for the people who were part of this focus group?

21 **MR. CUNNINGHAM:** Objection. And in light of the
22 foundational problems, it really becomes argument.

23 **THE COURT:** Can you rephrase the question?

24 **MR. WILLIAMS:** Sure.

25 **THE COURT:** In terms of what he knows about this

1 document, or his understanding of it.

2 **MR. WILLIAMS:** Sure.

3 **BY MR. WILLIAMS:**

4 **Q** Sir, you understood that the people at your company did
5 focus groups in order to try to determine what the markets were
6 that would be -- that the product would be directed to. Right?

7 **A** That's one reason we do focus groups.

8 **Q** Okay. And, you have testified that the focus group that
9 -- focus groups, plural, that you were focused on, you, Rod
10 Glaser, were people like family, people who have tons and tons
11 of DVDs, and business travelers. Right?

12 **A** I didn't testify anything about focus groups that I ran or
13 that I was involved in running. I said that those were target
14 markets that I believed and that I think the -- the -- are the
15 core target markets that our team has been focusing on.

16 **Q** Is it your testimony that this focus group result was
17 never shared with you?

18 **A** Well, I would typically not review the focus group
19 finding, by itself. It might be one summary slide in a product
20 review or a business review where we review 15 things, and
21 might spend five minutes on it.

22 But I certainly have no recollection of reviewing or
23 receiving this document at the time, or of seeing it any time
24 just before a couple of days ago.

25 **Q** Did Mr. Chasen or Ms. Coppinger or anyone else at the

1 company ever tell you that the focus group data had told them
2 that saving DVDs that people own would be less interesting to
3 them?

4 **A** I don't recall any specific conversation about that topic
5 from a focus group with those guys, no.

6 **Q** How about a general conversation about it?

7 **A** No. And for that matter, I don't read this as saying
8 that. Focus groups are often -- you get verbatim feedback from
9 different people. And a good summary of a focus group includes
10 comments that are raised by one person or two people that don't
11 necessarily represent the totality of the opinions.

12 So, would it shock me that if you had a focus group
13 of 50 people, one or two people would sigh this? No, it
14 wouldn't shock me at all. But that doesn't mean that that
15 would vitiate or obviate the way we are trying to market the
16 product.

17 **Q** And do you read this page, Page 10, to say that one in 50
18 people would not prefer to copy DVDs that they own?

19 **A** I read it as a concern that surfaced. So it was at least
20 one person. And it doesn't say anything about whether it was
21 one person out of 50, or two people, or more.

22 **Q** Is it accurate that the focus or one of the focuses of the
23 DVD sales pitch is that it is 100 percent legal?

24 **A** Of the DVD sale pitch, or the RealDVD?

25 **Q** I'll rephrase. Excuse me. Is it accurate that the sales

1 pitch for RealDVD, whether it be Facet or Vegas, is that it is
2 100 percent legal?

3 **A** Well, as per the document that we discussed in the
4 previous part of my testimony, we almost always say that, we --
5 we intend to say that, that it's legal as long as you're saving
6 movies that you own.

7 **Q** Let me ask you to look at Exhibit -- what I'll mark as
8 Hearing Exhibit 234.

9 (234 marked for identification.)

10 **BY MR. WILLIAMS:**

11 **Q** Sir, do you recognizes Exhibit 234?

12 (Witness examines document)

13 **A** It looks like a page from the RealDVD website.

14 **MR. WILLIAMS:** I would offer Exhibit 234, Your Honor.

15 **MR. CUNNINGHAM:** No objection.

16 **THE COURT:** 234 is admitted.

17 (Exhibit 234 received in evidence.)

18 **BY MR. WILLIAMS:**

19 **Q** At the top of this page, this is what appears to be an
20 advertisement, with some of the selling points for the RealDVD
21 product. Correct?

22 **A** That's what it looks like.

23 **Q** At the top of the page, under the heading "RealDVD
24 Features," it lists a number of them. And the last one is,
25 "And it's completely legal."

1 Do you see that?

2 **A** Yes, I do.

3 **Q** And down in the lower right-hand corner of the page, it
4 says, with a bullet point:

5 "Totally legit. RealDVD is 100% legal,
6 so you can save movies with domestic
7 violence confidence."

8 Do you see that?

9 **A** Yes, I do.

10 **Q** Now, do you believe that one of the premises of the sales
11 pitch for your product is that unlike other products that have
12 been out before, ripping products that have been available on
13 the Internet, the RealDVD product is one that is 100 percent
14 legal and legitimate?

15 **A** Absolutely. But it's the context of your entire
16 collection is safe, manageable and viewable, anywhere and any
17 time you want. And it's completely legal.

18 So on this page, on several places, we talk about
19 this being your collection, your movies. So in every case that
20 I'm aware of, we focus the marketing on movies that you own,
21 that is your collection of movies.

22 And so, to me, obviously we'll phrase different
23 things in different ways, but the focus on this being in the
24 context of a statement about your movies is something that we
25 have endeavored to do in every context.

1 Q Let me ask you to focus on the conversations that you and
2 others at your company have had with third parties, for the
3 right to exploit their copyrighted works.

4 You're familiar with that happening, that having
5 happened since you've been working at the company. Right?

6 A I'm not sure I know what you mean by exploiting their
7 copyrights. So if you would -- perhaps you could give me an
8 example of that.

9 Q With some of its products, Real pays third parties for the
10 right to exploit copyrighted works. Right?

11 A By "exploit," you mean "license and deliver," yes.

12 Q Right. "License" being the key word, right?

13 A Yes.

14 Q Now Real operates an online music service called Rhapsody,
15 and you described that. Right?

16 A Right.

17 Q Under that program, consumers can pay money and then
18 download music, individual songs, from the Rhapsody service.
19 Is that one of the services?

20 A Yes. Or, they can take CDs that they own, and they can
21 use the save feature inside of Rhapsody, and save them onto
22 their hard drive. So, they can do both with Rhapsody.

23 Q One of the options they have is to buy a subscription, and
24 I think you described that on direct examination. Right?

25 A That's right.

1 Q For both cases, whether the consumer downloads or uses the
2 streaming feature, Real obtains permission from the
3 copyright-holders for the use of their music. True?

4 A Yes, but in a third case, where people are using the
5 Rhapsody software to save the DVD -- to save the CDs that they
6 own, we're relying on the fact that these are CDs that people
7 have purchased, and they have fair use rights to save the DVDs.

8 So, even in the case of Rhapsody, where we're selling
9 a subscription, or we're selling digital tracks, we offer
10 multiple modes of access, to give the consumer a complete
11 experience.

12 That's the same thing that Apple iTunes does. It's a
13 very common feature in the market, to allow consumers to save
14 their own CDs, in addition to offering subscription streaming
15 or downloading or purchases.

16 Q With respect -- you're answering, now, another question
17 again. Please answer the one I'm asking, which is, with
18 respect to the downloading and the streaming features on
19 Rhapsody, Real obtains permission from the copyright-holders
20 for the use of their music.

21 True or not true?

22 A It's true, and I was putting it in the broader context.
23 Because it would be, in my opinion, misleading to only talk
24 about that one mode of use, when the ability to save the CDs is
25 directly built into the Rhapsody software as well.

1 Q Real is selling copies of songs when the user wants to use
2 the download option, correct?

3 A Absolutely.

4 Q But if the user chooses the streaming option, Real isn't
5 selling the user a copy. Correct?

6 A Well, that would get into an issue of terminology around
7 copyright law around "streaming" that I would defer to our
8 attorneys on the right way to use the language on that.

9 Q For purposes of my question, it doesn't matter. My point
10 is this: Even in the case of streaming, where the user doesn't
11 buy a copy of the song, depending on who you ask, Real still
12 obtains permission from the copyright owner for the right to
13 stream the music.

14 A That's true, but not in the case where we allow the
15 consumer to save the CD or the song from the CD, which is the
16 function that's analogous to RealDVD.

17 Q Real considers RealDVD to be its intellectual property,
18 right?

19 A The majority of it is our intellectual property. I assume
20 there's some stuff in there that we've licensed.

21 Q And RealDVD contains a software program, right?

22 A Yes.

23 Q And Real considers the RealDVD software to be proprietary
24 and protected by copyright. True?

25 A Sure.

1 Q You believe that Real's ownership of RealDVD gives Real
2 the right to decide the terms on which Real will sell people
3 copies of RealDVD. Right?

4 A I assume it gives us significant latitude. I don't know
5 that it controls everything. But I'm not an expert in all the
6 contours of the law in terms of when people have the right to
7 make a backup copy, and stuff like that.

8 Q You think that Real has the right to decide the price at
9 which it will charge people for copies of the software. Right?

10 A I believe we have the right, within some reasonable
11 parameters, to set the price for the RealDVD software. That's
12 right.

13 Q When you launched RealDVD, you decided that you would
14 charge people \$30 for the first copy. Correct?

15 A Yes. We had a list price of \$50, but the introductory
16 offer was \$30. That's correct.

17 Q You set that price, meaning -- "you" meaning Real
18 Networks, did. Right?

19 A That's right.

20 Q And the price could have been \$100, right?

21 A Sure.

22 Q Or \$300, as you suggested on direct examination, was a
23 possibility. Right?

24 A \$300 was for the Facet box that includes the hardware and
25 the software.

1 Q Understood. \$300 for Facet, less for the -- for this
2 product? The Vegas product?

3 A Because this -- the Facet product includes the hardware
4 and the software, whereas the RealDVD software assumes that you
5 have already bought a personal computer.

6 Q Now, the same user could buy additional copies of the
7 RealDVD software to run on up to four additional computers.
8 Right?

9 A That was specific way that we announced and marketed the
10 initial launch of RealDVD Vegas, yes.

11 Q And, for each of those, \$20 needed to be paid. Correct?

12 A Up to five licenses for a given account, yes.

13 Q Now, when you came up with the notion that there were
14 would be five computers that you could put the product on, as
15 opposed to 10 or 50 or 100, that was not based on anything
16 contained within the CSS license, was it, so far as you know?

17 A I would defer to our attorneys as to what the specific
18 reason was that they were comfortable that five was an
19 intelligent and appropriate number to pick.

20 But it was certainly one that had precedent in terms
21 of, for instance, what we've done in music. It also, if you
22 look at the way that the studios do digital copy, there are --
23 Apple iTunes copies allow for five copies of those movies, as
24 well.

25 So, it's -- it's kind of become a de facto approach

1 to limiting copies to personal use, but not being so
2 restrictive that people will run into the limit in -- in most
3 legitimate situations.

4 Q Now, when the record companies give RealNetworks the right
5 to allow downloading of their recorded music onto multiple
6 devices, they actually give Real Networks the right to do that,
7 after negotiation, right?

8 A Well, that's not true with the CD saving feature. The
9 Real -- when you save a CD using Rhapsody, you can save that to
10 as many different devices as you want.

11 So that's only true for when we're actually directly
12 selling you a track, or directly purchasing a subscription.

13 Q In the instance that I'm asking you the questions about,
14 that was based upon negotiation with the record companies.
15 Right?

16 A But that's only when -- of a couple of different modes
17 that we offer consumers. So in some of the modes that we offer
18 consumers there are those limits, and in others, there aren't.

19 Q And the reason in the circumstance where you are
20 permitting the consumer to download a copy of a song that you
21 pay the record companies is because the record companies are
22 the content owners of the music. True?

23 A Well, in that case, we're -- it's not simply that they're
24 the owners, it's that we are actually selling a copy of that
25 music to the consumer. Whereas, in the case when you save a CD

1 you've owned, you have already purchased that content from the
2 music companies.

3 Q Now, you understand, sir, don't you, that the content on
4 CDs is not protected by anything at all akin to CSS protection?

5 A Oh, sure. That's a big difference.

6 Q It's a totally different industry, that's right?

7 A Well, it's a different industry, but more properly, the CD
8 was created about 27 years ago, and the DVD is a more modern
9 invention.

10 Q But back to my question about the downloading of the DVD
11 -- excuse me, the music, the right from the record companies to
12 control their own copyrighted content is factored into the
13 amount of money that RealNetworks gets to keep from the retail
14 price of selling a downloaded song. Right?

15 A I'm not sure I understand the question. If you could
16 break it down or ask it again, I would appreciate it.

17 Q Sure. The record companies get paid for allowing
18 RealNetworks to permit consumers to download songs. Right?

19 A That's right.

20 Q Okay. And that's pursuant to negotiation. Correct?

21 A For the -- for the subscription or the purchase piece, not
22 for the ability to save the CDs. That's something that we do
23 in addition, and we don't have a specific license with the
24 music companies for that feature.

25 Q Okay. So, going back to your device that we're talking

1 about, if the user wants to get an additional copy of RealDVD
2 to run on another machine, they pay their \$20. Right?

3 A Yes.

4 Q And the user has to pay that, regardless of how or where
5 they want to use the extra copy of RealDVD. Right?

6 So, whether they want to put it on their laptop or
7 whether they want it to be on the PC that's upstairs, it's
8 still \$20. Right?

9 A That's how we launched the RealDVD license. That's
10 correct.

11 Q And you set that price. Correct?

12 A Yeah.

13 Q Now, the user does not get the right to make a free
14 convenience copy of their RealDVD product under your business
15 model, correct?

16 A Well, I'm not sure how the laws work for backup copies of
17 software, so I don't know if consumers get to make a backup
18 copy or not.

19 But in terms of the way that our -- our RealDVD
20 software works, if you want to use that key on a second
21 computer, you need to take out a license for that.

22 Q I'm not talking about the law, sir. I'm talking about
23 your business model.

24 Under your business model, the consumer does not have
25 to -- strike that -- the consumer does not receive a free

1 convenience copy of the RealDVD software that they can put on
2 some other computer in their home. True?

3 **A** Other than any requirements for making backup copies of
4 software, that's right.

5 **Q** A consumer has to pay Real for the right to have multiple
6 copies of the software on different devices, because that was
7 the business model that you chose for the product. Correct?

8 **A** For the ability to have the same library play on -- or the
9 same -- the device be connected to multiple computers, that's
10 right.

11 **Q** Isn't it a fact that the reason that Real charges for
12 extra copies of RealDVD on other computers in the home or on
13 laptops is that you believe that Real has the right to be paid
14 for the extra copies of its product, even when people are just
15 using those extra copies for their convenience?

16 **A** Not sure I understand the question.

17 **Q** I'll repeat it.

18 Isn't it true that the reason that Real charges for
19 extra copies of RealDVD is that you believe that Real has the
20 right to charge for those extra copies of its product, when
21 people -- even when those people are just using the product for
22 their convenience?

23 **A** Well, again, I'm not a legal expert, but I think the terms
24 of license we have with RealDVD are quite different than the
25 terms of a license that people have when they buy a physical CD

1 or a physical DVD.

2 **Q** Sir, Real has made the decision that the movie studios do
3 not have a similar right to be paid for people using extra
4 copies of their content for convenience reasons.

5 Isn't that right?

6 **A** What we believe, and our attorneys believe this, is that
7 RealDVD is a licensed product, from the standpoint of the CSS
8 world. And that it has a -- that the content that people have
9 purchased includes within the set of rights that make it legal
10 for them to save their -- their movies on RealDVD.

11 And the main reason they're doing it isn't to get an
12 extra copy, in my opinion, it's to get a whole bunch of extra
13 features and functions that simply aren't possible.

14 All that stuff that we demonstrated are not things
15 that you can do with a standard DVD with a standard DVD player.
16 So we -- we add value to the DVD, in a way that simply isn't
17 possible without making a physical copy of it.

18 **Q** Sir, now, the fact that the features that you described
19 are not possible unless you make a copy of the DVD doesn't make
20 it any more or less legal to do so.

21 You'd agree with me on that, right?

22 **A** No, I wouldn't. I'm not an attorney. I wouldn't agree
23 with you about that at all. I would defer to our attorneys'
24 view on that.

25 **Q** The question of the legality is something that you're not

1 passing on, right? We can put that to one side.

2 **A** I'm not passing on it, but I'm pointing out that unlike
3 the scenario you described, RealDVD adds value to DVDs that
4 consumers purchase.

5 So the primary point isn't to make an extra copy.
6 The primary point is to get extra value out of that material.

7 **Q** Your testimony is that the primary purpose of RealDVD is
8 not to permit consumers to make a copy.

9 **A** That's correct. The copying is a side effect of what we
10 have to do, in order to add value.

11 In other words, if you -- if you had to keep
12 shuttling discs in and out of your drive to get all that
13 beautiful display information, it would be an unusual product.
14 So we have to make a copy of it onto a hard drive of some large
15 capacity, in order to deliver all those benefits.

16 Given the consumers own the discs, you know, if
17 you -- if you -- if it was a mainstream thing for people to
18 have mechanical jukeboxes that had hundreds of discs, we could
19 do a software version of RealDVD. It would just be very
20 cumbersome, and people would need one of those big jukebox
21 devices, physical jukebox devices.

22 The magic of the software allows us to give you -- to
23 save a lot of space, so you can take them with you on trips,
24 and to have them fit in a small hard drive.

25 **Q** Sir, why is it --

1 **THE COURT:** Mr. Williams, how much longer are you
2 going to be with this witness?

3 **MR. WILLIAMS:** I've got at least a half an hour, Your
4 Honor. Maybe more.

5 **THE COURT:** Maybe it's time to wind up for the day.

6 **MR. MICK:** Okay.

7 **THE COURT:** Because after you all leave, the
8 courtroom deputy has to organize things and clean up, and the
9 court reporter does, also. So --

10 **MR. WILLIAMS:** That's fine with us, Your Honor. Do
11 you want me to --

12 **THE COURT:** Is this a place to stop? Or do you want
13 to --

14 **MR. WILLIAMS:** May I just try to follow up on that
15 last line?

16 **THE COURT:** Yes.

17 **MR. WILLIAMS:** I'll just finish that.

18 **BY MR. WILLIAMS:**

19 **Q** The question I had asked you a few moments ago, sir, was
20 whether Real has made a decision with respect to RealDVD, that
21 the studios do not have a right to get paid for people using
22 extra copies of their content.

23 Do you recall my asking that question?

24 **A** Yeah, what I'm saying is --

25 **Q** Hold on.

1 A Yes.

2 Q One step a time. Do you recall my asking that question?

3 A Yes.

4 Q Why is it that the studios do not have a right to be paid
5 for that first copy to be made by either the Vegas or the Facet
6 product, based on your understanding? Why is it that they do
7 not have that right?

8 A Well, I would say two things. The first is -- clearly
9 it's my view because the -- our attorneys have given me strong
10 assurances that they believe that there's a set of fair use
11 provisions, a set of other provisions associated with the
12 contracts that we have entered into with the DVD CCA, and that
13 are probably tied specifically also to the terms of the
14 agreements that DVD companies enter into when they sell DVDs to
15 consumers.

16 So, I don't know what mix of -- it's the difference
17 between the kind of license that we have on our software versus
18 the kind of agreement that's in the shrink-wrapped DVDs you buy
19 at Wal-Mart and et cetera.

20 I don't know how much of it's that, I don't know how
21 much of it's fair use agreements. I don't know how much is the
22 specifics of the CSS license.

23 The combination of those and perhaps other factors
24 our attorneys have assured me give them confidence that we have
25 the right to implement the functionality within RealDVD that we

1 do.

2 **Q** With regard to fair use, were you here during opening
3 statements? I don't believe you were.

4 **A** No, I was not.

5 **Q** Do you have an understanding that Mr. Scott, in opening
6 statement, said that fair use is not a defense to claims
7 brought under the DMCA?

8 **A** No. I was not here for Mr. Scott's opening statement.

9 **THE COURT:** Well, now we're --

10 **MR. SCOTT:** (Inaudible) Your Honor, trying to object.

11 **THE COURT:** But also, we're wandering into legal
12 opinion.

13 **MR. WILLIAMS:** Very well. We will go into that
14 tomorrow. Thank you.

15 **THE COURT:** And tomorrow, I'm going to adopt another
16 rule. And that is, just answer the question.

17 **THE WITNESS:** (Nods head)

18 **THE COURT:** You won't have to say as much, so you
19 won't have to speak quite as quickly. And, we will get through
20 this a lot faster, rather than just going on and on and on.

21 Okay? So, just answer the question.

22 And we will see you tomorrow morning at 9:30.

23 **MR. WILLIAMS:** Thank you, Your Honor.

24 **MR. SINGLA:** Your Honor, may I address one point?

25 **THE COURT:** Does this need to be on the Record?

1 **MR. SINGLA:** We would like it to be on the Record,
2 Your Honor. It will just take one minute, I think.

3 **THE COURT:** All right.

4 **MR. SINGLA:** We would like to just figure out the
5 schedule for tomorrow. I know we will finish Mr. Glaser.

6 My understanding from counsel is that then it will be
7 Mister -- Professor Bishop. I seek some consultation. Maybe
8 we could wait one minute.

9 We'd just like to get a witness list, so we can
10 prepare tonight for the final witnesses.

11 **THE COURT:** And your witnesses tomorrow in the order
12 of call are --

13 **MR. CUNNINGHAM:** It will be Dr. Bishop, and
14 Mr. Dixon, and then Mr. Bielman.

15 **MR. SINGLA:** Thank Your Honor.

16 **THE COURT:** And then you're going to then prepare --
17 you will all prepare, whoever's going to do it -- the DVD or
18 CD-ROM or whatever it is going to be, well, it'll be something
19 of a video, in any event, for tomorrow?

20 **MR. SINGLA:** Yes, Your Honor.

21 **THE COURT:** And that will be of Ms. Hamilton, and
22 who's the other person?

23 **MR. SINGLA:** From our side, Your Honor, it will be
24 Ms. Hamilton, Mr. Barrett, and also there will be shorts clips
25 of the other engineers that RealNetworks is not bringing to

1 trial.

2 So, it will be some clips from various engineers who
3 work on the RealNetworks products.

4 **THE COURT:** Okay.

5 **MR. SINGLA:** And, Counsel has asked for an
6 opportunity to review that, so we may not file that or provide
7 that to the Court until -- maybe it might be Thursday morning
8 or Wednesday afternoon, given Counsel's request to review it.

9 **THE COURT:** Okay.

10 **MR. SINGLA:** Thank you, Your Honor.

11 **THE COURT:** I'll just have to wait with bated breath.

12 See you tomorrow morning. Have a pleasant evening.

13 **MR. SINGLA:** Thank you, Your Honor.

14 **THE COURT:** Thank you.

15 (At 5:11 p.m. the proceedings were adjourned until
16 Wednesday, April 29, 2009 at 9:30 a.m.)

17

18

19

20

21

22

23

24

25

I N D E XDEFENDANT'S WITNESSPAGEVOL.**SCHUMANN, ROBERT**

(SWORN)

261

2

Direct Examination by Mr. Singla

264

2

Cross Examination by Mr. Mick

343

2

Cross Examination by Mr. Scott

349

2

Cross Examination Resumed by Mr. Scott

393

2

Redirect Examination by Mr. Singla

410

2

Recross Examination by Mr. Mick

415

2

Recross Examination by Mr. Scott

425

2

PLAINTIFFS' WITNESS**GLASER, ROBERT**

(SWORN)

439

2

Direct Examination by Mr. Cunningham

440

2

Cross Examination by Mr. Williams

477

2

E X H I B I T S

<u>EXHIBITS</u>	<u>IDEN</u>	<u>VOL.</u>	<u>EVID</u>	<u>VOL.</u>
232			316	2
5			317	2
233			323	2
50A	323	2		
76			335	2
229			338	2
A, B, C			475	2
231			512	2
599			514	2
146			520	2
234	525	2	525	2

CERTIFICATE OF REPORTERS

We, KATHERINE POWELL SULLIVAN and BELLE BALL, Official Reporters for the United States Court, Northern District of California, hereby certify that the foregoing proceedings in 08-4548 and 08-4719, RealNetworks, Inc., et al. vs. DVD Company Control Association, Inc., et al. were reported by us, certified shorthand reporters, and were thereafter transcribed under our direction into typewriting; that the foregoing is a full, complete and true record of said proceedings as bound by us at the time of filing.

s/b Katherine Powell Sullivan

Katherine Powell Sullivan, CSR #5812, RPR, CRR
U.S. Court Reporter

s/b Belle Ball

Belle Ball, CSR #8785, RPR, CRR
U.S. Court Reporter

Wednesday, April 29, 2009