

SIXTH TRIENNIAL
1201 RULEMAKING HEARINGS

PROPOSED CLASSES: 19, 20, 23, 6

May 20, 2015
9:00 A.M. - 5:20 P.M.

Reported by
Daryl Baucum, RPR, CRR, RMR, CSR No. 10356

1 A P P E A R A N C E S

2

3 PANEL MEMBERS:

4

5 JACQUELINE CHARLESWORTH

6 General Counsel, Copyright Office

7 SY DAMLE

8 Deputy General Counsel, Copyright Office

9 STEVE RUWE

10 Assistant General Counsel, Copyright Office;

11 REGAN SMITH

12 Assistant General Counsel, Copyright Office;

13 STACY CHENEY

14 National Telecommunications and Information

15 Administration Department of Commerce

16

17

18

19

20

21

22

23

24

25

1 APPEARANCES (continued):

2

3 PROPONENTS:

4 JACK LERNER, AARON BENMARK, RAHUL SAJNANI

5 UCI Intellectual Property, Arts and

6 Technology Clinic

7 CHRISTOPHER PEREZ

8 Donaldson & Callif

9 GORDON QUINN, JIM MORRISSETTE

10 Kartemquin Educational Films

11 ART NEILL

12 New Media Rights

13 JAY FREEMAN

14 SaurikIT, LLC

15 OPPONENTS:

16 J. MATTHEW WILLIAMS

17 Entertainment Software Association

18 Motion Picture Association of America

19 Recording Industry Association of America

20 BRUCE TURNBULL

21 AACS LA

22 DAVID JONATHAN TAYLOR

23 DVDCCA

24 SIMON SWART

25 Twentieth Century Fox Home Entertainment

1 P R O C E E D I N G S

2 WESTWOOD, CALIFORNIA; WEDNESDAY, MAY 20, 2015

3 9:00 A.M.

4 MS. CHARLESWORTH: Good morning, everyone.
5 My mic is on, I think.

6 I am Jacqueline Charlesworth, General
7 Counsel of the U.S. Copyright Office. And I along
8 with my colleagues here will be presiding over this
9 hearing which is part of the Section 1201 Triennial
10 Rulemaking, where we consider potential exemptions
11 to the entity circumvention provisions of 1201.

12 And I am seeing a lot of new faces today.
13 So we will go ahead and introduce ourselves from
14 this panel. From left to right:

15 MR. RUWE: Steve Ruwe, I am Assistant
16 General Counsel.

17 MR. DAMLE: Sy Damle, Deputy General
18 Counsel.

19 MS. SMITH: Megan Smith, Assistant General
20 Counsel.

21 MR. CHENEY: Stacy Cheney, Senior Counsel
22 at NCIA Department of Commerce.

23 MS. CHARLESWORTH: So as you might
24 imagine, we will be asking a lot of questions today
25 and we are very interested in hearing what you have

1 to say about the proposed exemptions.

2 I want to take a moment to thank UCLA Law
3 School and particularly Professors David Nemmer and
4 Rusty Klibaner -- I don't know if he's around -- who
5 has been extremely helpful to us in hosting us here
6 for this hearing and we are very appreciative of
7 that.

8 The goal of these hearings today is to
9 further develop and clarify the record. I'm going
10 to give each of you -- there are many of you
11 today -- an opportunity to make a very brief opening
12 statement.

13 If you can refrain from retreading the
14 written comments that you submitted which we have
15 all read and are quite familiar with and sort of
16 focus on areas of contention that you think -- you
17 probably have studied the other side's comments and
18 we're really interested in fleshing out the issues
19 where there is disagreement where the law may be
20 unclear, where the evidence is a bit unclear.

21 I know that we also have a couple of
22 presentations. I think we're going to let those
23 people go first just so that we have -- that you
24 don't have to interrupt yourselves getting them set
25 up.

1 Do we have copies of the exhibits?

2 MR. RUWE: Yes.

3 MS. CHARLESWORTH: What exhibits are they?

4 MR. RUWE: It'll be Exhibits 3 and 4.

5 MS. CHARLESWORTH: So we will be marking
6 the exhibits, the copies of your audiovisual
7 presentations. And if you are referring to them in
8 the record, it's helpful if you can use the numbers
9 that we assign them so when we go back and read the
10 record, we know what you were talking about.
11 Apparently, it's been a concern in prior
12 proceedings.

13 Some just basic rules of the road: It's
14 helpful if we don't talk over one another. It helps
15 the court reporter.

16 As I said, we're going to give everyone a
17 chance to speak briefly at the beginning and then
18 there will be a conversation. If you want to
19 contribute to that discussion, put your placard up
20 like this and we will call on you. We will try to
21 do it in order.

22 So we would like to try to get everyone
23 in. We try to get all the commentary in. So we
24 will work hard to do that today.

25 I think that just about covers it.

1 In terms of the guidelines here, we're
2 going to go around the room before we do anything
3 else and just have you each quickly state your name
4 and your affiliation or your interest that you are
5 representing for the record and then we will start
6 with the first audiovisual presentation.

7 MR. QUINN: I'm Gordon Quinn from
8 Kartemquin Films. I am representing filmmakers
9 seeking an exemption for documentary filmmakers. I
10 am a member of the IEA, the Independent Caucus and
11 all -- virtually all of the organizations that are
12 part of our class.

13 MR. PEREZ: My name is Chris Perez. I'm a
14 partner at Donaldson and Callif. We are a boutique
15 law firm here in Los Angeles that represents
16 primarily independent film producers and television
17 producers. And I am here supporting the exemption
18 for documentary and narrative filmmakers.

19 MR. LERNER: I am Jack Lerner with the
20 UC Irvine School of Law Intellectual Property, Arts
21 and Technology Clinic.

22 We're here on behalf of the International
23 Documentary Association for Kartemquin Films and a
24 large coalition of filmmaker organizations.

25 MR. BENMARK: I am Aaron Benmark. I am a

1 certified law student in the Intellectual Property,
2 Arts and Technology Clinic at UCI Law. I am also
3 here representing International Documentary
4 Association, Kartemquin Films and the coalition
5 supporting the exemption.

6 MR. SAJNANI: My name is Rahul Sajnani. I
7 am a certified law student in the UCI Intellectual
8 Property, Arts and Technology Clinic and I am also
9 here on behalf the IDA.

10 MR. MORRISSETTE: My name is Jim
11 Morrisette. I am a technical director at
12 Kartemquin Films and it's my job to make sure our
13 programs get through quality control checks with
14 distributors.

15 MR. NEILL: My name is Art Neill. I am an
16 executive director of New Media Rights and I am here
17 this morning supporting proposed Class 6.

18 MR. WILLIAMS: Matthew Williams. I am
19 here for MPAA, RIAA and ESA.

20 MR. SWART: I'm Simon Swart, General
21 Manager and EVP of 20th Century Fox Entertainment.
22 My job primarily is to monetize all the assets we
23 have and build new business models for physical and
24 digital distribution.

25 MR. TURNBULL: I am Bruce Turnbull. I am

1 counsel to the Advanced Access Content System and
2 here in opposition to the request.

3 MR. TAYLOR: I am David Taylor. I am
4 counsel to DVDCCA and entertainment companies and
5 the entertainment industry.

6 MS. CHARLESWORTH: Thank you.

7 And we will now begin to hear discussion
8 and evidence on proposed Class 6, which is
9 audiovisual works, derivative uses and specifically
10 filmmaking uses.

11 So we're go to start with Mr. Morrisette.
12 You have a presentation.

13 And this is going to be marked as hearing
14 Exhibit 3, for the record.

15 MR. MORRISSETTE: Good morning.

16 In the three years since I last testified
17 in front of this committee, a lot has changed,
18 especially in the technology and means of
19 distribution of the work that Kartemquin Films does.

20 And our need for high definition clips is
21 now critical. Standard definition DVD quality
22 images are being rejected on our programs by our
23 distributors ranging from Magnolia Films to CNN.

24 And there is a change in the way theaters
25 show films. They don't show film anymore. They

1 show digital cinema packs and they have to be
2 created in a minimum of HD quality.

3 There is also a dramatic change in the
4 technology world. 4K is here and it's everywhere at
5 the trade shows and it's available for streaming
6 right now and it will be available on an ultra high
7 definition Blu-ray player this fall.

8 I just want to show you a couple of slides
9 to keep this quick. These are slides showing our
10 rejected images from a film we did about Roger Ebert
11 called "Life, Itself," and in all cases, it was
12 rejected because of poor standard definition quality
13 images in our program.

14 MS. CHARLESWORTH: Can I ask, did you
15 rectify that and release the film?

16 MR. MORRISSETTE: Rectifying it was
17 complicated. In some cases, we changed out the
18 shots to something else. In another case, we were
19 able to through a 12-year-old Blu-ray player which
20 still had analog outputs, we used the analog method
21 to capture 720, which is half of HD quality, but
22 this was good enough to barely pass. That's how we
23 rectified it.

24 MS. CHARLESWORTH: So in cases, you
25 actually changed out content to substitute content.

1 MR. MORRISSETTE: Yes.

2 MS. CHARLESWORTH: And in other cases, you
3 were able to find a work-around through the old
4 Blu-ray player.

5 MR. MORRISSETTE: Yes.

6 4K is complicated because it is such a
7 hugely large amount of data. And everyone is now
8 producing in 4K.

9 If you look at this chart, 4K is
10 represented by the image in orange. And up in the
11 upper left corner in purple is the image resolution
12 to scale of DVD's. And you will notice it's not
13 even in the right aspect ratio. It's a square
14 image, which is typical of standard definition.

15 In numbers, DVD's are about 345,000
16 pixels, Blu-ray over 2 million, and the new ultra
17 high definition, 8 million pixels.

18 So you can imagine how DVD quality would
19 not stand up, certainly in ultra high definition,
20 which is the wave the future. And over the next
21 three years, it will cover more and more content.

22 Here is the ultra HD Blu-ray that is going
23 to be introduced.

24 I want to talk very quickly about the
25 alternatives to circumvention that the opponents

1 have prosed which is screen capture.

2 Screen capture software, you play your
3 disk of Blu-ray to get high definition on a computer
4 and you capture the image using the computer,
5 itself. So the computer is doing two things. It's
6 playing the Blu-ray and also trying to capture.

7 And there are all sorts of issues that we
8 found with this system, even three years ago, and it
9 hasn't improved. And an example of that are the
10 three clips that opposition has submitted to us for
11 evaluation of what they think is acceptable images.

12 The first image they sent us was a
13 standard def image from a DVD. So, of course, it
14 was way too small to accomplish anything that our
15 current exemption wouldn't fix.

16 This particular clip is the wrong HD image
17 resolution. It's smaller than HD and it exhibits
18 artifacts.

19 Here is a frame called Frame A.

20 Here is Frame B, which is a double image
21 frame which is going to be flagged by quality
22 control at both broadcast organizations and for
23 theatrical distribution.

24 And the next clip had the same issues.
25 And when you see this interlaced artifacting and

1 double images on people's faces -- here is frame
2 one, frame two -- you can see double images.

3 MS. CHARLESWORTH: Can you show me where
4 the interlacing is just so I understand exactly what
5 it is.

6 MR. MORRISSETTE: Interlacing is double
7 images superimposing upon each other.

8 MS. CHARLESWORTH: I can see that.

9 MR. MORRISSETTE: And you can see it even
10 easier in the cartoon where you see two heads on the
11 woman's head. That is interlacing artifacts and
12 that is immediate grounds for rejection in
13 broadcast.

14 So it just doesn't work as an alternative
15 to circumvention.

16 So we need access to high definition
17 source material in order to make our fair use, and
18 more importantly, to get our programs accepted for
19 distribution.

20 MR. CHENEY: Mr. Morrisette, could you
21 fix the problems with those and submit those?

22 MR. MORRISSETTE: No, you cannot fix
23 interlace problems once they are burned into the
24 file.

25 You could take the frame out but then you

1 have got dropped frames, which is also grounds for
2 rejection.

3 You could repeat the earlier frame. That
4 is double images, but, again, that is grounds for
5 rejection.

6 MR. CHENEY: Thank you.

7 MS. CHARLESWORTH: When you are talking
8 about grounds for rejection, can you be sort of
9 specific about exactly the categories of parties who
10 would be rejecting those. Are you talking about
11 television broadcast networks?

12 MR. MORRISSETTE: Yes, television
13 broadcast networks and distributors.

14 Many of our films are distributed in
15 theaters as well as on broadcast and cable, and the
16 theaters specs are even more stringent because you
17 have to convert your show to what is called a
18 digital cinema pack even to get it into a film
19 festival now.

20 You used to be able to send Blu-rays to
21 film festivals but those are being rejected. It all
22 has to be in the format that Hollywood is using in
23 their theaters because that's what film festivals
24 use.

25 And that conversion process, which is

1 quite tedious, by the way, is very unforgiving of
2 any images that are not full HD quality. And they
3 certainly would reject images that cause even more
4 problems with double image frames like you just saw.

5 The DCP converts every frame of your video
6 into a single still file. And if you get still
7 files that are duplicates and non-duplicates and
8 dropped still files, it just doesn't work.

9 MS. CHARLESWORTH: Thank you.

10 I guess, Mr. Taylor, your presentation.
11 And this will be hearing Exhibit 4 for the record.

12 MR. TAYLOR: Good morning. I am David
13 Taylor. And as I said earlier, I represent DVDCCA.

14 In light of the office's comments with
15 respect to brevity, I am just going to focus my
16 presentation this morning on the clips that we
17 prepared for today and leave the comments as they're
18 reflected already in our writings.

19 Right here, we made a clip to demonstrate
20 video capture capabilities.

21 I do want to respond to the statement. We
22 did not prepare an original initial exhibit for the
23 purposes of filmmaking and never submitted it to
24 them as these are what we think you can use. Those
25 exhibits were strictly intended to show how video

1 capture or screen capture technology has improved,
2 but in light of their comments, we have gone back
3 and want to demonstrate that video capture software
4 can, indeed, record the image in standard
5 definition, standard definition being 720 by 486 or
6 720 by 480, and also set the frame rate at 29.97.

7 And in this clip --

8 MS. CHARLESWORTH: I just want to
9 interrupt. We want to make sure we understand.

10 So these are different from the clips you
11 submitted previously with your written comments.

12 MR. TAYLOR: Yes.

13 MS. CHARLESWORTH: So we now have
14 additional clips available that you added this
15 morning.

16 So you went back and created new clips.

17 MR. TAYLOR: Right.

18 And specifically with the technology that
19 we're using, we are using WM capture. And with
20 that, we generated an MPEG-4 file.

21 This file right here that I am going to
22 play for you has been a little bit processed from
23 the MPEG-4 to an Apple format process and which has
24 the dot MOV extension so that it can actually be put
25 into Final Cut and shortened for this presentation.

1 This was shortened to like thirteen
2 seconds. And you have to do that conversion from
3 the MPEG-4 file to the MOV file. And you do that
4 through a free software product called -- I think
5 it's MPEG Splicer and it's available for free. So
6 it will change the format from what I have as a PC
7 format to an Apple format.

8 MS. SMITH: And did you use Camtasia for
9 the version that was previously submitted, also?

10 MR. TAYLOR: I believe that the earlier
11 version was recorded with Camtasia because it was an
12 Apple.

13 MS. SMITH: And so in this version we're
14 about to see, how did Camtasia -- did it capture
15 additional pixels? How did the resolution improve?

16 MR. TAYLOR: This was actually done with
17 WM Capture.

18 MS. CHARLESWORTH: So you used a different
19 capture system but it's still the base -- the
20 underlying content is SD, correct?

21 MR. TAYLOR: It was DVD playback, so
22 standard definition. And we recorded it with the
23 standard definition image sizes.

24 (Playing of clip from Exhibit 4).

25 MR. TAYLOR: So that was -- as I said, it

1 was recorded and output into an MPEG-4 file.

2 I am now going to show you the source file
3 which is here. This is the magnifier. This is the
4 source file that was output from the WM capture and
5 it's labeled MP4.

6 If you look at its properties --

7 MR. RUWE: Could you, please, refer to the
8 file name.

9 MR. TAYLOR: My apologies.

10 The file name is PortlandiaVLC43V2.MP4.

11 MR. DAMLE: Just for the record, we are
12 looking now at the file properties for that file.

13 MR. TAYLOR: Right.

14 So when you can click on the details, you
15 see that it is the 29 frames per second.

16 MS. SMITH: Is there a way to know that
17 the 29 frames per second are identical to the
18 original DVD playback? Or what Mr. Morrisette was
19 saying about dropped frames or duplicate frames, can
20 we be sure that that didn't happen through this
21 capturing?

22 MR. TAYLOR: I think -- I am not a
23 technical expert. I am a lawyer, but what I think
24 you would have to do to look at that is put it on a
25 timeline through a video editing process and look at

1 each frame on a frame-by-frame comparison. You
2 wouldn't necessarily learn that just by the
3 recording settings being set at 29.97 frames per
4 second.

5 And so this is the original source. And
6 so basically, the point is that --

7 MR. DAMLE: When you say it's the original
8 source, you are saying it's the MP4 file.

9 MR. TAYLOR: Right. It's the original
10 output source that was processed.

11 MR. DAMLE: From WM Capture.

12 MR. TAYLOR: Right. And it was then
13 processed.

14 And now you see that this -- the clip that
15 was actually played was a MOV file which plays back
16 on QuickTime fairly easily, as we saw.

17 MS. SMITH: So are you contending that
18 this version would be an acceptable substitute for
19 distributors?

20 MR. TAYLOR: No, we're not. We're just
21 demonstrating that video capture software can,
22 indeed, record in standard definition as required,
23 and also that the frame rate can be set for the
24 29.97 frames per second.

25 And as far as the proposed class, I would

1 limit my comments to the fact that DVDCCA does not
2 object to renewing of the class, but we would
3 certainly ask the office to consider and stress the
4 importance of making use of the exemption and
5 adhering to all of its requirements, particularly
6 close analysis.

7 The proponents had put forth the fact that
8 they had made use of the exemption in their
9 documentary film "Mr. Waterson" which was concerning
10 "Calvin and Hobbs." And this clip is in fact the
11 material -- the original source material that they
12 circumvented for that purposes.

13 And under the exemption, it was required
14 that the use for criticism or comment be that it
15 required quality images for the purpose of making
16 criticism or comment.

17 So I just want to play that back for you
18 so that you can look at it and judge for yourself
19 whether or not close analysis was required to make
20 use of the clip.

21 And, again, I'm playing the original clip
22 that is an MOV file.

23 (Playing of clip from the Exhibit 4).

24 MR. TAYLOR: So according to the
25 proponents, it was mere reference to "Calvin and

1 Hobbs" which warranted them to circumvent the CSS on
2 the DVD so that they could include it in their
3 documentary.

4 And in our opinion, that use certainly
5 wasn't authorized and warranted under the past
6 exemption. And we would ask that if the Copyright
7 Office is going to renew that exemption, that it
8 make some effort to emphasize that better care
9 should be used when making use of the exemption.

10 MS. CHARLESWORTH: Can I ask a question.

11 MR. TAYLOR: Sure.

12 MS. CHARLESWORTH: What is your view in
13 terms of screen capture? Is it -- I mean sort of
14 almost implicit in what you are saying is that it
15 doesn't involve circumvention.

16 Do you concede that there is no
17 circumvention with screen capture technology,
18 generally? Or what is your view on that?

19 MR. TAYLOR: My view is my experience.
20 And I have worked with Camtasia and with WM Capture.
21 And I can say from my personal use of it, I have no
22 doubt that it's not circumventing. It's recording
23 merely the image that is being played back.

24 I can't speak for all video recording
25 software or video capture software, but I would say

1 at least the ones that I have used are not
2 circumventing the DVD.

3 MS. CHARLESWORTH: Is it possible in your
4 view that there are screen capture technologies that
5 do involve circumvention?

6 MR. TAYLOR: I think that there are
7 products out there that would rip the DVD and then
8 copy it, but I think that if the video capture
9 software is outputting an image that is less than
10 perfect, it would suggest to me that circumvention
11 hasn't occurred.

12 MS. CHARLESWORTH: Thank you. So now --
13 thank you very much for that and those
14 presentations.

15 Now, we're going to go around the room
16 from my left to the right.

17 I don't know if Mr. Quinn, did you have
18 anything to add to in terms of -- I'm sorry, there
19 are a lot of you. I'm sorry for identifying you
20 incorrectly.

21 Did you have anything you wanted to add in
22 terms of opening comment?

23 MR. QUINN: Yeah, if you will indulge me,
24 I am going to skip over a few things and try to
25 follow the instructions that you laid out.

1 I would like to read a sentence from John
2 Dewey because it's at the heart of our work and I
3 think the issue is going to come up later,

4 "Artists have always been the real
5 purveyors of the news, for it is not the
6 outward happening, itself, which is new,
7 but the kindling of it by emotion,
8 perception and appreciation."

9 We just finished a film about the critic
10 Roger Ebert where he says "Movies are a machine for
11 creating empathy."

12 This work is at the heart of the open
13 communication for our democracy. If somebody
14 owns -- you can't own history. You can't own
15 culture in a way that keeps people from critiquing
16 it and criticizing it and putting it in context.
17 You have to have the ability to make the kind of
18 work that we make.

19 We are here trying to do the right thing.
20 I mean we are rights holders, also.

21 It's been three years from the last
22 exemption. There has been no harm. We are not the
23 problem the rights holders have with piracy and all
24 of that. I think we have a lot of history to prove
25 that.

1 There just hasn't been a problem with what
2 we have been doing, but the reality for us is that
3 three years ago, the exemption that we have now was
4 barely what we needed to get through the
5 gatekeepers. It's no longer adequate.

6 Technology changes over time, as Jim
7 pointed out, and we have to adapt to that
8 technology.

9 We are getting things rejected now that
10 three years ago would have just slipped under the
11 wire, would have been okay. Sometimes we had to
12 change one or two things but now it's become a major
13 problem.

14 Our gatekeepers, the broadcasters, the
15 distributors, as Jim pointed out, are absolutely
16 demanding it.

17 And I want to respond to what he was
18 saying. You saw the "Calvin and Hobbs" clip.

19 MS. CHARLESWORTH: That is Exhibit 4, I
20 believe.

21 MR. QUINN: Exhibit 4, I believe, yes.

22 And I just want to point out that it
23 depends on what you are doing. And I don't think we
24 want to rewrite fair use here. In other words, the
25 fair use law works. We're just talking about

1 breaking the encryption so that we can make fair
2 use.

3 I don't think you want to get into two
4 sets of standards, but in our Ebert film, which is
5 about a film critic, a film critic who brought major
6 motion pictures to the popular culture as a major
7 art form in America, when he is saying something
8 about a film and we're using the clip that he
9 referenced in our film, we need an approximation or
10 as close as we can get to the quality that he was
11 looking at.

12 We can't have a degraded image when he is
13 talking about Bergman's film "The Silence" and you
14 are seeing a moment between two women and it's in
15 their faces, in the very details of their
16 expression.

17 Three years ago, I showed a clip from my
18 film "A Good Man" about Bill T. Jones, where he is
19 talking about white bodies, white viewers looking at
20 black bodies. And I have an image of him dancing.
21 You see the sweat. You see the muscles rippling
22 under his skin. I need every bit of that high
23 definition detail to make my point.

24 I will just skip ahead here to the end.

25 I mean really, what we're talking about

1 here is the open communication that a democracy
2 needs to function. We really just want to
3 participate in the culture of our community. And as
4 technology evolves, we absolutely have to be there.

5 And so I think we have submitted letters
6 from our various broadcasters and gatekeepers,
7 distributors and studios and people who are pointing
8 out that high def is what we need.

9 The clips that he is showing in standard
10 def, we couldn't have even submitted those three
11 years ago. Thank you.

12 MS. CHARLESWORTH: Thank you, Mr. Quinn.
13 Mr. Perez.

14 MR. PEREZ: Thank you.

15 So, again, I work with Donaldson and
16 Callif.

17 We're working primarily with independent
18 film producers and television producers and we
19 pretty much do it all for the filmmakers on the
20 transactional side, but in recent years, we have
21 developed a national reputation for our clearance
22 work in both documentary and in their films,
23 especially with regard to fair use.

24 So I'm going to, you know, touch very
25 briefly on three points that I think are important

1 for purposes of narrative films.

2 First, I want to demonstrate that
3 narrative filmmakers make fair use often and to
4 dispel the misconception that fair use doesn't apply
5 to fiction films because that is simply not true.

6 MS. CHARLESWORTH: I am sorry. I am going
7 to interrupt you.

8 How do you define, quote, a narrative film
9 versus other films? And if you want to give me --
10 maybe you have some working definitions that you --
11 I know you have used some terminology in your
12 papers.

13 Can you run through your definitions on
14 how you distinguish one type of film from another?

15 MR. PEREZ: Actually, my second point was
16 to say that the line that is trying to be drawn
17 between narrative films and documentary films, it's
18 a blurred line because we have films that aren't
19 necessarily -- a lot of people wouldn't think that
20 they're documentaries. Other people would think
21 they are documentaries.

22 We have documentaries that have
23 reenactments. We have real stories with fictional
24 characters inserted into them. We have plenty of
25 other examples.

1 As far as the definition for documentary
2 goes, I think we would stick with the definition
3 that Pat Gopter Heidi submitted in past comments.

4 But to that point, I don't think the line
5 is clear to anyone and fair use is possible for all
6 types of films. So I don't see the need to draw a
7 line.

8 MS. CHARLESWORTH: Well, I think -- I mean
9 I understand your -- I take your point. On the
10 other hand, in the past, we have made that
11 distinction, and I think from a fair use analysis
12 point of view, a documentary use is probably more
13 like -- a pure documentary use is -- there is a
14 better chance probably that it's going to be fair
15 use than the use of a clip in film that is really
16 just for entertainment value in a narrative
17 fictional film. That is something we sort of
18 alluded to, I think, in the last rulemaking.

19 And so to the extent we're -- and this
20 maybe goes to everyone -- to the extent we are
21 thinking about these issues today -- I mean you can
22 take the position you want on an exemption across
23 the board, but it might be -- I think it's also
24 helpful -- we're trying to -- part of the evaluation
25 is, is something more likely to be fair use than

1 not.

2 And so we're interested in hearing from
3 all of you about potential distinctions in the types
4 of films and the type of exemption that should or
5 should not apply to those uses, because we have to
6 consider them sort of as a class. We're not looking
7 at the particular film at issue.

8 So it's an area of interest for us in this
9 discussion. I just wanted to give you a heads up on
10 that.

11 MR. PEREZ: Sure.

12 I completely agree with you that narrative
13 films are intended to be entertaining, but pretty
14 much across the board, narrative films serve other
15 purposes, as well. They are commentary, criticism,
16 scholarship, research, all of the enumerated
17 purposes listed in the copyright law, but in terms
18 of drawing that line, there is a better chance that
19 something is going to fall within fair use if it has
20 true elements.

21 So if you are talking about a biopic,
22 which I think some people would say might be a
23 documentary, might not be -- in fact, I think the
24 DVDCCA essentially said that biopics qualify as
25 documentaries.

1 So I think the opposition is not quite
2 sure where to draw the line, but yes, I think there
3 are varying degrees of truth in documentaries, even,
4 and also narrative films.

5 MS. CHARLESWORTH: That is helpful.

6 MR. QUINN: If I could just interject one
7 thing, as a documentary filmmaker, I saw the
8 distinction in the comments.

9 We view all of our films as entertaining
10 in the sense that people want to see them, people
11 come to see them.

12 I think it's a false distinction to say
13 narrative film is somehow entertainment and what we
14 do has social value. They're all art. They're all
15 a part of culture.

16 MS. CHARLESWORTH: I wasn't really drawing
17 the distinction that way, but a lot of the fair use
18 analysis often revolves around whether a clip is
19 used strictly for, quote, entertainment purposes,
20 meaning it's not transformative from the original
21 work it was taken from versus for criticism and
22 commentary.

23 So all of this is sort of wrapped up, but
24 I take your point, as well, that documentaries can
25 be highly entertaining and I enjoy watching them.

1 So Mr. Perez, I am sorry. Let me let you
2 finish.

3 MR. PEREZ: I wanted to tell you why I
4 think we have demonstrated that there is a long list
5 of narrative films that have taken advantage of fair
6 use and you referred to the comment for the list,
7 but just to also go over very briefly a couple of
8 litigated cases where fair use was found in their
9 projects.

10 We have Falkner versus Sony, which
11 involved the use of a quote from William Falkner's
12 book in Woody Allen's "Midnight in Paris"; Scope
13 Entertainment versus Document Production, a film
14 that is a narrative project; we are talking about
15 the musical "Jersey Boys" and the use of a clip from
16 the "Ed Sullivan Show" and that was very
17 entertaining to the tune of everybody watching it;
18 Arrow Productions versus Weinstein, vis-a-vis
19 enactments from a fictional film in another area of
20 film; Bourne versus 20th Century Fox, which was a
21 parody of the song "When You Wish Upon A Star" in
22 "Family Guy," which is a fictional cartoon series.

23 Just one example from films that have come
24 through our office is the biopic "Cesar Chavez"
25 which, of course, tells the story of Cesar Chavez

1 and the United Farm Workers as they tried to better
2 the conditions of the farm workers in California.

3 The film makers used archival footage of
4 farm workers working in difficult conditions while
5 the voice of Michael Pena, the actor playing Chavez,
6 gives context to the clips being used and explains
7 how poor the working conditions were.

8 And there are plenty of other examples
9 that are listed in the appendix. So I won't go over
10 those.

11 We talked about the blurred line between
12 narrative and documentary films. So we will leave
13 that there with the exception of one example that I
14 wanted to bring to the table. It's "Bombay Beach,"
15 and it's a great film that came through our office.

16 It's a -- I think most people would call
17 it a documentary but I have heard other people say
18 it's something else.

19 It's a portrait of the people living in
20 Bombay Beach, which is an isolated desert town on
21 the edge of the Salton Sea. And it was marketed as
22 a vacation town in the 1950's, but in the course of
23 years, the sea dried up.

24 And so the film explored the town through
25 the eyes of the people living there. And in most

1 regards, it's a documentary in that we are
2 portraying reality, portraying truth, but the
3 filmmaker asked the subjects to engage in
4 choreographed dances that clearly had narrative
5 elements.

6 So there are little narrative pieces
7 within a larger documentary film, but that
8 distinction is difficult to make.

9 And the last point that I want to make is
10 the chilling effect on narrative filmmakers and how
11 it's very real. Our comment was filled with stories
12 of narrative filmmakers discouraged from developing
13 projects because there was a potential for a
14 violation of the DMCA.

15 I would point you in particular to the
16 stories of Matt Latham and Finite Films because they
17 were particularly illuminating, but an additional
18 example is from Will Slocombe. He has written and
19 directed several narrative films, including "The
20 S Word," which is about to premiere at the L.A. Film
21 Festival next month, but he wants to write and
22 direct a television show that would be an inside
23 look at the Hitler Youth Organization when the Third
24 Reich was in power.

25 And the show would be largely fictional

1 but it would ideally use archival footage of the
2 Hitler Youth from Leni Riefenstahl films or other
3 Nazi propaganda films to provide accurate historical
4 context for the show, but he has been discouraged
5 from doing it, discouraged from developing the show
6 because of the restrictions that the DMCA has placed
7 on his ability to access that footage.

8 MS. CHARLESWORTH: Has he sought a license
9 for the footage?

10 MR. PEREZ: He hasn't.

11 MS. CHARLESWORTH: So he is just
12 contemplating -- he considers the uses to be fair
13 uses for a television show of that nature?

14 MR. PEREZ: Well, it might be helpful to
15 tell you how we would work with a client in that
16 situation.

17 Will would come to us with an idea -- and
18 often they come to us at the idea stage -- and we
19 give them a sense -- they tell us the story that
20 they want to tell and then we give them a sense of
21 whether we think it would be fair use or not.

22 So ideally, we are working with them from
23 the idea stage where we can understand exactly -- or
24 not exactly -- but generally how they're going to be
25 using the footage in context and we can give them

1 guidance on how they are going to write the script.

2 Then we get the script back and we make
3 notes, say you got to use this but it's got to be in
4 context and it's got to be short enough so that
5 you're only using it to illustrate a point that you
6 are making in the film to provide context for the
7 reality of the show. And that is it, because once
8 it becomes solely for entertainment purposes, then
9 it's not going to be fair use.

10 And so ideally, we're working in a very
11 early stage, but we work with filmmakers throughout
12 the process. Sometime it's too late and people put
13 clips in that they will have to license those.

14 So we're not saying that all narrative
15 films and all types of uses in narrative films are
16 going to be fair use, but, you know, there are
17 plenty of filmmakers that are taking advantage,
18 especially the ones that are coming into our office.

19 MS. CHARLESWORTH: And so you probably
20 can't get into your specific advice to the persons
21 making the TV show about the Hitler Youth, but in a
22 general sense, someone coming to you with a project
23 like that, you are giving them advice sometimes on
24 how to use the clips in a way that you are advising
25 them would be fair.

1 And what you are -- I think what you are
2 saying in that instance is because it falls in the
3 line of more a narrative use or narrative film, that
4 you run up against the circumvention provision.

5 Is that a fair characterization of what
6 you are saying?

7 MR. Perez: Correct.

8 MR. DAMLE: So this is archival footage.
9 Obviously, when it was first produced, there were no
10 DVD's.

11 Is it your point that this is not
12 available in unprotected formats, that the only way
13 it's available is on DVD's or Blu-rays, I guess?

14 MR. PEREZ: My point is yes, that much of
15 the material would only be available from those
16 sources.

17 MR. QUINN: I have an example which might
18 shed some light on this. Actually, Donaldson helped
19 us with this.

20 We had licensed some material from ESPN
21 for a film about Muhammad Ali, some boxing footage.
22 We could have claimed fair use but we didn't think
23 the qualify would be good enough, so we licensed it.

24 The qualify that they delivered to us at
25 the end was unacceptable, unusable. We weren't

1 going to get it used.

2 So then, we went back and ripped it from a
3 bootleg we found somewhere and we used that
4 material. Then we went back to ESPN and said we
5 actually wound up claiming fair use and we didn't
6 even use your footage and we would like our money
7 back. And it wound up in a negotiation.

8 So just to give you some idea, in all of
9 our documentaries, there is footage that we license
10 and footage we claim fair use on.

11 MS. CHARLESWORTH: But going back just to
12 follow on my colleague's question, this specific
13 example of the Hitler Youth moment, exactly where
14 would this footage be coming from? It must exist.
15 I assume that this existing somewhere. Like where
16 is it, in what medium?

17 MR. PEREZ: Well, I think probably Leni
18 Riefenstahl films are on DVD and Blu-ray.

19 MS. CHARLESWORTH: So you would be seeking
20 to use those as your primary source material.

21 MR. PEREZ: Correct.

22 MS. CHARLESWORTH: One more question for
23 you.

24 MR. PEREZ: Sure.

25 MS. CHARLESWORTH: How do you define

1 "biopic"? What is your definition of that, which I
2 always pronounced "bi-op-ic," incorrectly.

3 MR. PEREZ: That is a tough question.

4 I think I would answer that by saying it's
5 very difficult for me to define. I sometimes know
6 it when I saw see and sometimes I don't, but those
7 are the kinds of films, I think, where a particular
8 person or group of people are told -- their story is
9 told in which the film is based on a true story.
10 It's particularly set up for the ability to make
11 fair use.

12 MS. CHARLESWORTH: So the basis is a true
13 story.

14 Are you saying that there are
15 fictionalized elements within that story and that if
16 they're even -- you know, that the totality of a
17 biopic -- in other words, what is the difference
18 between a biopic and a documentary that focuses on
19 an individual?

20 MR. PEREZ: Well, I think a biopic might
21 be scripted versus a documentary, which I think
22 generally is not scripted, but again, there is
23 blurred lines.

24 But to your point about fictionalization,
25 there are plenty of biopics out there that claim to

1 be based on a true story or inspired by a true story
2 that insert fictional characters, fictional
3 circumstances, fictional arguments, lots of
4 different things.

5 And when we are looking at those, we are
6 looking at them not just from fair use but also for
7 personal rights issues, of course, because you have
8 issues --

9 MS. CHARLESWORTH: Right of publicity,
10 yes.

11 Mr. Ruwe, did you have a question?

12 MR. RUWE: You said that the Leni
13 Riefenstahl films were probably available on DVD.

14 Is that an inquiry that would go further
15 before you seek or your client would seek to operate
16 under an exemption?

17 MR. PEREZ: Yes, we would go through that
18 process of trying to figure out where they are, get
19 the footage and whether it's legal to do that or
20 not.

21 MS. SMITH: I understand your position
22 that there is blurred lines between genres, but in
23 your written submissions, you have divided narrative
24 films into "biopics inspired by" and, I guess,
25 "other."

1 Do you have specific examples where the
2 use of short clips, particularly in either inspired
3 by or more particularly not even inspired by, would
4 be a fair use that you would clear as opposed to
5 license?

6 MR. PEREZ: Sure.

7 There is a film that just came out called
8 "Van Dorla" and it's -- I would say it's primarily
9 fictional and they would like to -- the film is
10 basically Joseph Campbell's hero journey. And it's
11 a guy who is lost in life. He has a run-of-the-mill
12 job. He is not particularly happy with his
13 marriage. And so he is searching for something.

14 And it uses images from various films that
15 kind of parallel the situations that existed in his
16 life at that time and it's very explicit. In fact,
17 he refers to the films very specifically which he
18 says this is essentially my journey. So the use of
19 the clips is very transformative.

20 We would also refer you to the stories of
21 Matt Latham and Finite Films. Matt Latham wants to
22 make a satire of the representation of women in the
23 media. Finite Films, they want to use materials to
24 represent the media and they're interested in that
25 because they feel that media literacy for young

1 people is very poor at this time.

2 So again, these are situations where
3 they're at the idea stage.

4 They would come to us and ask this is what
5 we want to do, are we able to take advantage of fair
6 use.

7 And if it's not the case, then we advise
8 them to license it.

9 And if it is the case that we think you
10 could possibly be fair use, then we're guiding them
11 throughout the process.

12 And the key is that we're not only giving
13 the opinion but the E&O insurance companies are
14 agreeing with us. And they're notoriously
15 conservative because they are the ones that are
16 going to have to pay out of pocket at the end of the
17 day.

18 And we have a \$10,000 deductible or
19 \$25,000 deductible for the filmmaker should the
20 claims come in but the insurance companies are the
21 ones that are paying out.

22 MS. CHARLESWORTH: So ultimately, they're
23 the ones in charge of the fair use decision. It's
24 sort of a joke but not entirely.

25 I think we're going to have to move on.

1 Thank you very much. I know we had a lot of
2 questions for you and we appreciate that you took
3 the time to answer them.

4 Mr. Lerner.

5 MR. LERNER: I don't have an introductory
6 statement, but if it would be possible, I would like
7 to respond to a question that you posed to Chris
8 which you said well, in a narrative film, you might
9 be using a clip that is really just for
10 entertainment value.

11 And we have no interest in an exemption
12 that covers clips just for entertainment value.

13 Many of my clients who are documentary
14 filmmakers license clips because they're
15 entertaining all the time and that is how it should
16 be.

17 There are lots of situations, however,
18 where you want to make fair use of something and
19 licensing is not available and it's not -- it might
20 be entertaining, but the point is that you are
21 actually making a point about that film.

22 And fictional films do that -- are now
23 doing that more and more where they are making fair
24 use in order to make a point that is transformative,
25 that does add new meaning, that does satisfy fair

1 use according to the four factors.

2 MS. CHARLESWORTH: Can I ask you, so do
3 you think that -- in the past, we have talked about
4 comment and criticism as being a condition for the
5 exemption, which I think goes to perhaps what you
6 are saying.

7 Do you agree that that is a reasonable
8 condition for an exemption here?

9 MR. LERNER: I think that comment and
10 criticism probably will cover most of the uses that
11 our filmmakers are wanting to make, probably a big
12 majority of those, but it doesn't have to be a
13 parallel standard where you have something that is
14 just comment and criticism as opposed to saying if
15 you make fair use as has been defined and refined by
16 the courts, then you are able to use the exemption.

17 MS. CHARLESWORTH: Right, although we
18 typically try -- I mean in drafting the
19 exemptions -- I mean I am sure you know that we try
20 to provide some guidance. And just saying something
21 is fair use doesn't really give a lot of information
22 to someone because you might have to hire Mr. Perez
23 to tell you whether it's fair use, but that -- I
24 mean when you include a condition like comment or
25 criticism, it kind of gives additional guidance,

1 obviously, that is tied to the fair use standard
2 very closely.

3 In terms of when you are thinking about
4 whether this exemption applies to you, think about
5 whether you actually are commenting on this as
6 opposed to just saying I am writing a film, it would
7 be great to have a clip of this to move my story
8 along, I mean, which are sort of two different
9 things.

10 MR. LERNER: We tell our clients all the
11 time, if you are just using the clip to move your
12 story along, then that is not an appropriate use.

13 And I have many, many clients -- at least
14 one of them is here in the audience -- where I have
15 had to say if you want to use this clip and you want
16 to make fair use of it, it's going to be more
17 constrained, it's going to be more difficult, it's
18 not -- you are not going to be able to do everything
19 that you would do if you licensed it. And that's
20 100 percent appropriate.

21 And so I would just say it does make sense
22 to have some guidance, for example, in the
23 recommendation or in other spots, but we have the
24 documentary filmmaker statement of best practices
25 and fair use and lots of guidance about fair use and

1 awareness of fair use among fictional and narrative
2 and documentary filmmakers. It's through the roof
3 compared to what it was.

4 And also, when you want to talk about
5 guidance, you actually have a lot more contours than
6 if you simply say criticism and commentary.

7 That being said, criticism and commentary
8 will probably cover most of the uses. And we think
9 that would be -- we can certainly work with that but
10 we don't think that is ideal.

11 MR. CHENEY: Could you give an example of
12 something that would be outside of that criticism
13 and comment that you would suggest would be fair use
14 that might help define the contours of this?

15 MR. LERNER: One example might be parody.
16 So a fictional filmmaker wants to parody something
17 and wants to use a clip in order to make that
18 parody. That could possibly be a form of criticism
19 and commentary and probably be wrapped up --

20 MS. CHARLESWORTH: I think most people
21 think parody is criticism and commentary.

22 MR. PEREZ: We have another project that
23 is in development about a fictional story set in a
24 real-life setting.

25 We have a U.S. soldier coming back from

1 Vietnam who comes back and he realizes that he just
2 doesn't fit in. At that point, the American
3 reaction to soldiers coming back was not favorable.
4 So he just is miserable.

5 And he wants to use a clip from the "Dick
6 Cavett Show" that aired at the time that basically
7 reflected that attitude that the American public had
8 toward soldiers coming back.

9 And I think some people might argue that
10 we're not commenting directly on that clip, we're
11 not criticizing that show, but it's a transformative
12 use because it's a reflection of the real-life
13 setting in which the story takes place, but the rest
14 of the story is fictional in that the soldier never
15 really existed and the story of his family never
16 existed.

17 MS. CHARLESWORTH: Some might argue it's
18 not a fair use, I think, is the other side of the
19 coin because it's used -- you know, you could
20 produce many different things to fill that role, to
21 fill that need in a film.

22 I mean I am not saying whether it is or it
23 isn't. I am just saying that whether that is a fair
24 use could be a debatable point.

25 And that is part of what we were driving

1 at here, is we have to create an exemption which
2 applies in a general way, which is an unusual thing.
3 Courts usually decide specific cases with a lot of
4 specific facts.

5 Mr. Learner, did you have anything else to
6 add?

7 MR. LERNER: I just wanted to say if you
8 had a news organization creating a documentary,
9 there could be news reporting types of uses.

10 And also something that was made
11 documentary but for a film somehow has some kind
12 also of educational value. So you could conceivably
13 have educational uses that were maybe also partly
14 commentary and criticism, maybe not, but maybe some
15 news reporting would also be included in the
16 documentary and maybe that would also include
17 criticism or commentary.

18 And we can answer questions.

19 MS. CHARLESWORTH: We are going to
20 continue on.

21 Mr. Benmark.

22 MR. BENMARK: I have no introductory
23 statements but I am available to answer questions
24 you have.

25 MS. CHARLESWORTH: We seem to have a lot

1 of them. So thank you for that.

2 Mr. Sanjami.

3 MR. SANJAMI: I also don't have any
4 introductory statement but I will answer questions.

5 MR. TAYLOR: Thank you.

6 Mr. Morrisette, we heard from.

7 Mr. Neill.

8 MR. NEILL: Good morning, again, everyone.

9 I will heed the instructions and jump
10 right to the things that I want to get to.

11 Just to introduce those, though, a little
12 more specifics on the work that I do. It's a lot
13 like the work that Chris Perez doesn't do. We are a
14 nonprofit provider of legal services. So we are
15 probably working with folks at a little earlier
16 stage.

17 We have worked with a variety of
18 filmmakers and those filmmakers -- many of them are
19 actually distributing a lot of media, including
20 YouTube and other venues.

21 And so some of them distribute in the
22 classics for film, film festival, and then go to a
23 distributor model, but a lot of them are
24 distributing simply using the Internet.

25 So obviously, the record now is showing

1 that all of those who include -- who make
2 non-documentary film use of content as well as
3 documentary use of content use it in ways that, as
4 Mr. Quinn mentioned, enhance -- many of those folks
5 enhance political, social and cultural discourse.

6 And I want to hit on two points in
7 particular that seem to still be in question
8 regarding why the full exemption is appropriate
9 under Class 6.

10 MS. CHARLESWORTH: When you say "full
11 exemption," what do you mean?

12 MR. NEILL: By "full exemption," I mean,
13 first of all --

14 MS. CHARLESWORTH: Everything under the
15 sun?

16 MR. NEILL: As it's proposed. And that
17 specifically means two things in the record that
18 seem to still be under discussion, particularly
19 which are that Blu-ray and HD content should be
20 included and able to be accessed; and number two,
21 particularly, that really the limitation should not
22 be on -- the access shouldn't be limited to uses for
23 documentary purposes.

24 So there is certainly a lot of evidence
25 regarding specific uses that would be harmed on the

1 record. There is 46 -- a list of 46 narrative
2 fictional -- whatever term you want to use. I will
3 use the term "non-documentary" because that might be
4 the best term for that.

5 There is also -- we included, obviously,
6 evidence of documentary filmmakers like Michael
7 Shang on the record. Her work is also full of
8 evidence showing the inadequacy of the alternatives
9 proposed by the opponents, such as video recording
10 screens, screen capture, required licensing.

11 So getting to the two points I want to
12 make regarding HD content, obviously, as has been
13 discussed, 4K ultra HD is here. We have on the
14 record statements from filmmaker Rick Bowman about
15 the fact that at the recent American Film Market
16 event in Los Angeles, the, quote, distributors
17 didn't even want to look at films unless they had
18 been filmed in 4K.

19 And we can support some of the comments we
20 have heard from Jim Morrisette and Mr. Quinn
21 regarding the need for higher quality content.

22 So regularly in addition to doing fair use
23 reviews and signing off on letters to E&O insurance
24 companies that was mentioned earlier, we also work
25 with filmmakers when they do get a distribution

1 contract.

2 And in recent years as we have been
3 working with folks, we have done distribution
4 contracts with folks like PBS and also some
5 international distributors, as well.

6 And we have seen the standards rise a bit
7 for distributors. There is certainly a lot of
8 evidence, as well, with audiences, whose demand for
9 the higher quality of content is there. And just
10 the need to basically get across their messages
11 requires HD content.

12 But essentially, when our filmmakers are
13 going to distributors, we are finding more and
14 more -- and we are actually dealing with some
15 situations right now where filmmakers are getting
16 rejections and having to go back and do extra
17 processing, doing up-resolution of footage,
18 re-editing and --

19 MS. CHARLESWORTH: Who is rejecting? Can
20 you give me a couple of specific examples of
21 distributors who are rejecting the films?

22 MR. NEILL: Sure.

23 Well, actually, one of the films that I
24 mentioned, I am not going to mention the distributor
25 because the deal isn't finished. We're in the

1 middle of dealing with that, but it's an
2 international distributor that distributes to
3 broadcasts all across the globe and it's for
4 worldwide distribution outside of the U.S.

5 So it's a major broadcast distributor and
6 they -- what happened there, the filmmaker is simply
7 having to go back and actually have a technician,
8 because they are not specialized in doing this, do a
9 number of up-resolution, taking a variety of
10 footage, some of archival footage. Folks are
11 actually able -- we have talked about some older
12 footage -- they're able to get archival footage that
13 is clearly from a time when there wasn't a certain
14 quality available. Sometimes that will be able to
15 pass, but they still will probably want some kind of
16 up-processing done to it.

17 MS. CHARLESWORTH: But they are making a
18 technical fix that fulfills the distributor's
19 specifications.

20 MR. NEILL: Trying to, yes.

21 And the interesting thing is that without
22 access, those hurdles -- they already have enough
23 hurdles in terms of trying to get -- many filmmakers
24 we do work with, we working with for free or we are
25 working with for a nominal fee.

1 So they are already overcoming this hurdle
2 and they are having to maybe pay for insurance.
3 They are also going to have to deal with if I can't
4 get the footage, you know, through circumvention,
5 then I have to go through all of these other steps
6 to try to make the footage fit into the requirements
7 of the distributor.

8 And allowing this exemption helps to
9 alleviate some of that burden. And so that is
10 regarding the need for HD content.

11 The other piece that I wanted to address
12 directly is regarding the need for the exemption for
13 all types of filmmaking instead of just simply for
14 documentary filmmaking.

15 As we said on the record in our comment,
16 we encourage the Copyright Office to pass an
17 inclusive exemption that covers any filmmaker who
18 uses copyrighted motion pictures.

19 And to back that up a little bit, to
20 explain that a little bit more, I just wanted to
21 mention that, again, drawing bright lines between
22 types of filmmaking is extremely difficult. I think
23 we just saw that in the discussion.

24 And I have been using this term
25 "non-documentary" ever since I heard "fictional" and

1 "narrative" just because I do find it very difficult
2 to draw a line. And I guess I would find it more
3 difficult than almost anyone because I work with a
4 lot of YouTubers.

5 And many folks I work with who are
6 distributing online -- I mean they might not even
7 call their film fictional or narrative.

8 MS. CHARLESWORTH: You are talking about
9 now short videos?

10 MR. NEILL: That would be short films or
11 longer-form films, absolutely, just in terms of the
12 venue that they're distributing on. They might be
13 distributing online instead of, say, maybe a
14 traditional film festival and distribution route.

15 MS. SMITH: Do the people who distribute
16 online or through YouTube have the same sort of the
17 resolution requirements as those distributing
18 through film festivals?

19 MR. NEILL: That is really an interesting
20 question, actually.

21 I guess the best way I could answer that
22 reasonably -- I will see if maybe over the summer if
23 I might be able to put in some more -- if the deal
24 is done, maybe I can give some more details, but the
25 international distributor that I was mentioning,

1 just for what it's worth, the requirements are the
2 same for that.

3 So that person is going to have to do
4 those fixes for both. And they were required to do
5 that for both because what is happening is --

6 MS. CHARLESWORTH: For both what?

7 MR. NEILL: And that distributor is going
8 to have it on broadcast and that distributor is
9 going to have it in what are called "catch-up
10 rights" online, that is, online after the broadcast.
11 And the requirements were the same there and they
12 had to do up-processing and up-resing. So yes.

13 And I just -- so it is really hard to draw
14 lines.

15 I think that biopics, in particular -- I
16 know we talked about it, but they are great examples
17 of the mix of fictional and nonfictional elements.
18 I find it extremely difficult to give those a hard
19 definition, either.

20 And I just wanted to mention that we
21 certainly work with a lot of folks who are
22 distributing online. And just to have them looking
23 at this exemption -- and think of a lot of those
24 folks who don't even get to the point of getting
25 legal assistance -- looking at that exemption and

1 saying well, maybe I am not a fictional filmmaker,
2 am I a narrative filmmaker, I don't know if I am.

3 I think that may be a little daunting.

4 Fair use already requires a lot of challenges and we
5 are working carefully with those folks to try to get
6 that right.

7 I would also mention that regarding the
8 specific comments on the record, regarding this idea
9 that films with fictional content are, quote,
10 typically entertainment -- I know we touched on that
11 briefly -- but obviously, whether films are -- I
12 know that that's taken from a statement that was in
13 the 2012 rulemaking recommendation, but whether or
14 not films are, you know, nonfictional films or --
15 excuse me, I apologize -- non-documentary films,
16 typically, entertainment is irrelevant to whether an
17 exemption for a non-documentary filmmaker should
18 exist.

19 MS. CHARLESWORTH: Why is it irrelevant?

20 MR. NEILL: So even the use of the word
21 "typically" rather than a word like "always" --

22 MS. CHARLESWORTH: But the point is you
23 have to show substantial adverse effects. There
24 isn't -- it's not a 100 percent showing one way or
25 the other.

1 Again, I reiterate, we have to deal at
2 some level in generality here. So when we are
3 drawing lines in this process, we have to do it with
4 sort or looking at the likelihood that something is
5 more likely to be fair use versus less likely.

6 So that's why it's relevant.

7 MR. NEILL: I think that -- well, you
8 know, the fair use, I think the best way to respond
9 is that the fair use test is really an individually
10 applied test to each circumstance and that the best
11 way to respond is that there are infringing uses
12 that can be made in documentaries and we just talked
13 about that.

14 And we all help get people licenses. I
15 help people get licenses every day, but there are,
16 obviously, you know, many non-infringing uses that
17 can be made of documentaries but the same goes for
18 non-documentary film. Really, there can be, you
19 know --

20 MS. CHARLESWORTH: I think traditionally
21 there has been -- I am sorry, I am violating my own
22 rule. I interrupted you, but I think traditionally
23 in a non-documentary setting, the content is often
24 licensed and you have a market for the use of clips
25 in non-documentary films that is pretty well

1 established.

2 So, obviously, we're very interested in
3 this issue. I said this at the outset, but we're
4 struggling with what the -- whether there would be
5 any boundaries to what you are proposing, how you
6 would protect -- how you would tailor something so
7 there was truly a fair use and you weren't, for
8 example, undermining a market, which is one of the
9 fair use factors.

10 MR. NEILL: So I think that the exemption
11 proposed really does tailor to the fair use test and
12 trying to -- I think there is a very real and
13 existing license market on the documentary side, as
14 well.

15 And again, one of the nice things about
16 actually going down that line of thought that you
17 talked about is -- this was even in the opponent's
18 comments -- was that okay, well -- and even
19 conceding that non-documentary uses are typically
20 entertainment or typically primarily entertainment,
21 the nice thing about that is that that means there
22 is a very narrow set of uses that could be fair use
23 and those are the uses that we're talking about
24 here, that there are uses, and that was talked about
25 earlier, but we work really carefully with folks and

1 there are uses where folks really do need to make
2 fair use.

3 And I would just leave with you two
4 things. Number one, as you are hearing all the
5 testimony today, I would say number one, keep in
6 mind that the proposed exemption, again, regarding
7 what you were just talking about, only permits uses
8 covered by fair use. So if the use is not fair use,
9 then any circumvention and copyright infringement
10 claims persist; and number two --

11 MS. CHARLESWORTH: But again, that is just
12 sort of circular, saying if it's fair, you can do
13 it.

14 I mean we like to try to get a little more
15 guidance to people when they are applying the
16 exemption. So saying it's a lawful use can be
17 helpful but it --

18 MR. NEILL: I think that the guidance we
19 are talking about when you mention things like
20 cutting lines about commentary or criticism or
21 cutting lines based on type of filmmaking, my
22 contention there would that it's a more confusing
23 line to draw and it doesn't really provide helpful
24 guidance, would be my suggestion there.

25 And this is the last thing I would

1 mention, is that if a copyright holder doesn't
2 provide a license to footage and if that footage is
3 behind a technological protection measure, it's
4 simply not available for public discourse.

5 So thank you.

6 MS. CHARLESWORTH: Now, I think we're
7 going to move onto the other side of the room. They
8 have been so very patient and probably have a few
9 things to say in response and then we will come back
10 to Mr. Morrisette.

11 Mr. Williams.

12 MR. WILLIAMS: Thank you for having me
13 here again today on behalf of MPAA, ESA and RIAA.

14 My clients do not oppose the existing
15 exemption being renewed for documentary filmmaking.
16 We are not here to fight against that.

17 We are opposed to expanding the exemption
18 in five proposed ways. That includes eliminating
19 the limitation to use short portions of motion
20 pictures.

21 We're opposed to expanding it to cover
22 fictional filmmaking.

23 We do not think that you should eliminate
24 the requirement for criticism and comment.

25 We do not think it should be expanded to

1 cover Blu-ray discs, hacking of those discs.

2 And then we don't think it should be
3 expanded beyond motion pictures to all AV works.

4 I am going to first touch on the first
5 three of those, short portions of fictional versus
6 documentary filmmaking and criticism and comment.

7 We think those are crucial or, as the
8 registrar said in 2012, critical to keeping this
9 exemption close to what is typically going to
10 qualify as fair use.

11 When you start eliminating those
12 requirements, you get into much murkier waters. And
13 we do think in contrast to our friends here, that it
14 is helpful for people have those guiding principles
15 in the actual regulation.

16 MR. CHENEY: Mr. Williams, just to come
17 back to something that was mentioned earlier, there
18 was a term "educational." Would that be something
19 that is a term that we could add to that list?

20 MS. CHARLESWORTH: I think that goes to
21 another exemption class, which we will probably see
22 many of the same people there.

23 MR. WILLIAMS: I am going to touch that in
24 a second, the relationship between those different
25 classes, but I don't think we would be opposed to

1 adding educational to criticism and comment. I
2 think that is one more way to bring it closer to
3 fair use.

4 And we're not saying that using a portion
5 of a motion picture in a fictional film is never
6 going to be fair use. That's not what we're here to
7 say. It's just that it is much murkier waters.
8 It's much clearer in the documentary context. So we
9 think it's important to keep this proceeding in that
10 clear space.

11 The reason it's not as clear as in
12 fictional filmmaking, we think the use will often be
13 engaged in in order to kind of gain the audience's
14 attention to get them to stay immersed in the film
15 and that that is something that should be licensed
16 under Campbell and other cases. If you are using a
17 preexisting work to grab the audience's attention
18 and suck them in, that is something that typically
19 should be licensed.

20 MS. CHARLESWORTH: Just to make the record
21 clear, when you say "fictional," do you think that
22 means the same thing as "narrative" in the
23 proponent's proposal?

24 MR. WILLIAMS: Right.

25 My understanding how they are using

1 "narrative" is that they are using it to refer to
2 fictional or scripted fictional films.

3 I kind of enjoyed coming into this and
4 pondering the difference between New Media Rights'
5 comment that put it very succinctly, I thought, what
6 is the difference between fiction and nonfiction and
7 that's an interesting metaphysical kind of
8 existential question, but I don't think we have to
9 actually answer it perfectly in order to come up
10 with a definition of documentary that would help
11 clarify what the existing exemption covers.

12 And we actually think this would be quite
13 helpful -- and we have said this in the past -- to
14 split apart this existing bundle exemption that
15 covers motion picture uses and clips from motion
16 pictures so that they are separate exemptions that
17 would clearly cover defined uses of documentary
18 filmmaking, remix video uses, educational uses,
19 nonfiction, multimedia eBooks.

20 Right now, the way it's set up, in our
21 view, it's hard to distinguish between them and it's
22 hard to know whether a non-commercial video, for
23 example, consumes all of educational videos or
24 whether a documentary film consumes educational
25 uses.

1 We don't think that is the way the office
2 has intended it because they are clearly separate
3 classes there, but because there are no definitions
4 and because some of them are quite similar, we are
5 afraid that someone who really should be operating
6 on the educational uses restriction might just say
7 well, we're a noncommercial video maker. So we do
8 think that would be helpful.

9 It's hard to perfectly define. I grant
10 them the difference, but I think it's kind of easy
11 to spot what we think of as a documentary film.

12 I just very briefly looked for some
13 definitions and I will throw one out. I don't know
14 that it's perfect. I am sure you could poke holes
15 in it and we would be happy to comment on any
16 conversation that you guys come up with in response
17 through a letter, but just to -- in Wikipedia citing
18 the Oxford English dictionary, they say a
19 documentary film is a nonfictional motion picture
20 intended to document some aspect of reality
21 primarily for the purposes of instruction or
22 maintaining an historical record.

23 And you can throw in that there is some
24 non-scripted element to it that is probably based on
25 truth.

1 So we do think having a definition would
2 be helpful and that there is a distinction under the
3 law between that kind of filmmaking and fictional
4 filmmaking.

5 MS. CHARLESWORTH: Where would you put
6 biopics in this?

7 MR. WILLIAMS: So I think there are very
8 few examples in what has been put forward -- and I
9 think you have been putting your finger on that
10 today -- of actual uses of clips of encrypted
11 sources of video in motion pictures.

12 And what I think of as a biopic -- one of
13 examples that have given is the Linda Lovelace movie
14 about the adult film star and the struggles she went
15 through that led to the case Arrow versus Weinstein.
16 And that case did not involve the use of clips of
17 encrypted video. It instead involved restaging of
18 scenes from a motion picture that came out earlier.

19 And so that type of film doesn't by
20 necessity involve, as I see it, any type of clip
21 uses. It might involve clips but that film did
22 not --

23 MS. CHARLESWORTH: But does it fall more
24 on the documentary side of the line or the
25 non-documentary side of the line?

1 MR. WILLIAMS: In my view, it would fall
2 more on the non-documentary side of the line because
3 it's a fictional, scripted take on the historical
4 identity.

5 MS. SMITH: Can you address the Cesar
6 Chavez use.

7 MR. WILLIAMS: I confess I haven't seen
8 that film or how they have used the clips.

9 MS. SMITH: I just want to say I think in
10 the record, they do say that 1201 was
11 implicated.

12 MR. WILLIAMS: Right. And I think that is
13 getting to the questions you had on archival
14 footage. And, of course, I don't think when that
15 footage was shot, it would have been encrypted. And
16 so somewhere out there there is original source
17 footage.

18 I think what they are saying is that
19 either they would have to get a license to put their
20 hands on that footage or it's easier and more
21 convenient to use a DVD of the footage that is out
22 there in the marketplace.

23 And I am not so sure that in either of
24 those instances, the answer shouldn't be try to go
25 get the original first, at least.

1 MS. SMITH: And try to get the original
2 unencrypted on DVD.

3 MR. WILLIAMS: Correct. Well, I don't
4 know that it would be on a DVD, but the original
5 footage, however it was shot, I don't think would be
6 encrypted. It would be a commercial product that
7 would have been put out containing the footage.
8 That would be encrypted.

9 MS. SMITH: And if that was not possible
10 or the examples of the Leni Reifenstahl films, would
11 you think that they would need a license?

12 MR. WILLIAMS: I think obtaining a license
13 for a fictional film would be preferable to using
14 it through circumvention, yes, because of the issues
15 I was raising. It's just murkier waters when it
16 comes to fair use whether they really need to use
17 the original footage.

18 I will continue a little bit.

19 Some of the other examples that they
20 raised were cinema verite. That, again, as I
21 understand it and as they describe it doesn't
22 involve clip usage. It's capturing unaltered
23 reality, is what they say. And so I don't think
24 that is an example of a need to circumvent any type
25 of technological measure.

1 Many of the other cases that they cite for
2 the notion that you can make fair use in fictional
3 films, we would not object with that principal. You
4 can make fair using in fictional films, but these
5 cases do not, again, involve use of clips from
6 encrypted sources.

7 The Bourne versus Fox case was about the
8 "Family Guy" episode. We saw a little bit of
9 "Family Guy" images earlier today. It's an animated
10 show that doesn't involve clip usages and it was
11 also a case involving a claim about music.

12 It was a claim about a parody of "When You
13 Wish Upon a Star." So it was not a case about clip
14 usages. It was a case that shows in a fictional
15 work, you can make fair use, but I don't think it's
16 particularly relevant here.

17 And I would note that in that case, Fox
18 actually did seek a license first in that case
19 before making the promoted use, just for the record.

20 There are some examples they gave and I
21 haven't been able to see them because I think they
22 are still things that are in production, like Matt
23 Latham's desire to use certain images of women from
24 motion pictures in order to make a good point about
25 how we see women in media.

1 Some of those might rise to the level of
2 fair use. Without seeing any of them, it's hard to
3 say, but again, I think the record contains so few
4 examples like that that really, we shouldn't wade
5 into this new murky water with creating a fictional
6 use exemption.

7 Simon here from Fox is going to talk some
8 about the fact that the movie studios are eager to
9 license uses of their films. And so there is a
10 market impact.

11 And I think Jack acknowledged that usually
12 the standard practice when you are dealing with
13 fictional work is to seek a license.

14 I think when Simon delivers the testimony,
15 you will see it might be relevant to multiple
16 classes.

17 So as I said yesterday, if you would be
18 willing to look at the transcript from this
19 proceeding when you are considering educational
20 uses, for example, that would be appreciated.

21 MS. CHARLESWORTH: I mean we are trying to
22 keep each record clean and whole. So it'll probably
23 be in our heads, though.

24 MR. WILLIAMS: I understand that.

25 MS. CHARLESWORTH: I just want to be clear

1 that we are not incorporating, necessarily, parts of
2 records from one class to another just because it
3 becomes very murky, to use a word that has been used
4 already.

5 MR. WILLIAMS: I appreciate and I
6 apologize that we are not able to put the witnesses
7 on all of the panels all the time, but we have tried
8 to make sure we have brought them to the most
9 relevant panels.

10 MS. SMITH: On sort of on a separate
11 matter, in 2012, the office also granted exemptions
12 for use of screen capture -- it was sort of
13 unsettled whether or not the exemptions were
14 necessary -- to joint creators who contend that a
15 exemption for screen capture software is necessary.

16 MR. WILLIAMS: We don't oppose renewal of
17 those exemptions. I'm not saying it's necessary but
18 we don't oppose the renewal of those exemptions.

19 MS. CHARLESWORTH: Do you think the screen
20 capture technology may include circumvention? There
21 is an area that I know we have the same questions
22 coming under every round.

23 It's your position -- is it your position
24 that it may at times or that it never does?

25 MR. WILLIAMS: I think our position is

1 saying that it has been -- and we haven't done the
2 kind of technical studies that DVDCAA has done over
3 the years. We have basically assumed that the
4 studies they have done are correct and at least
5 specific products that they have studied, the source
6 material is being captured after it's decrypted, and
7 in that event, it would not be an exemption.

8 MS. SMITH: So you are not aware of any of
9 your clients taking an infringement position or
10 saying it's a violation based on --

11 MR. WILLIAMS: No, I am not aware of any
12 actions against any screen capture technology
13 players.

14 MS. CHARLESWORTH: And you're opposing the
15 expansion to audiovisual -- can you just address
16 that -- audiovisual works as opposed to motion
17 pictures.

18 MR. WILLIAMS: Sure.

19 As I take it, that would mean we go beyond
20 motion pictures to video games, but I didn't see any
21 real discussion in the record of why circumvention
22 would be necessary in that space or how they would
23 go about using game footage. And so just on that
24 basis, I don't see any justification for expanding.

25 And I don't have much more here. I know

1 we need to move along.

2 The last thing I just want to touch on
3 quickly was Blu-ray. We don't believe that you
4 should expand this exemption to cover Blu-ray and we
5 don't think that they have met their burden to show
6 that they do need to do that.

7 We have in our comments an explanation of
8 the fact that pretty much everything that is on
9 Blu-ray can be obtained on DVD or through some
10 online video source.

11 Because we're not opposing renewal of the
12 exemption for those new sources and material, we
13 don't think they need to get to the Blu-ray disc and
14 undermine the technological measures that are used
15 in connection with Blu-ray.

16 I would note, as you saw yesterday, even
17 if you just bought a standard definition DVD several
18 years ago and you wanted to obtain an HD digital
19 copy of that, you could use the disc-to-digital
20 program and for \$5, you would have an HD digital
21 copy. We are not thrilled that under the exemption
22 you could circumvent those copies, but that is kind
23 of water under the bridge. So if you can get that
24 HD source material, we don't see why you need to
25 circumvent Blu-ray discs.

1 MS. CHARLESWORTH: So are you saying for
2 any content that is out on SD DVD, you can get that
3 upgraded to HD DVD?

4 MR. WILLIAMS: I think it's a little bit
5 of a stretch to say everything available in standard
6 def, you could do that with, but yes, a huge
7 majority of studio titles that are out on DVD can be
8 converted, using Vudu's service for \$5, to an HD
9 digital copy.

10 MS. CHARLESWORTH: And when you are saying
11 "converted," does that mean -- can you explain a
12 little bit about that.

13 Obviously, if we have an exemption that
14 doesn't include Blu-ray and people are looking for
15 HD, we need to understand how accessible that is.

16 MR. WILLIAMS: And I know your time is
17 limited, but I would encourage you to play around
18 with some of these services. They work pretty well.

19 And three years ago when we were here, we
20 were basically describing if you wanted to convert
21 your DVD, you would have to take them physically
22 into a Walmart and convert them, but now if you sign
23 up for Vudu, which is an online service, you put
24 your DVD in the disc drive, the service recognizes
25 that you have a lawful copy of that DVD, and you

1 tell them I either want to pay \$2 and get a standard
2 definition digital copy or you pay \$5 and get an HD
3 digital copy. And it's very seamless, takes
4 minutes, and you have got that resident on your
5 laptop.

6 MR. DAMLE: And to be clear, you wouldn't
7 oppose an exemption for HD content, streamed content
8 or downloaded content.

9 MR. WILLIAMS: Right.

10 So as I read the current exemption, there
11 is no limitation that if you own a download or pay
12 for a download of HD quality, that is excluded. I
13 don't see anything in the exemption that excludes
14 that from the current.

15 I think one thing that they have raised in
16 their comments as an interesting question that I
17 don't know the answer to is whether you intended
18 last time around when you say distributed online
19 video to use the term "distributed" in a copyright
20 sense and actually limit it to only copies that were
21 downloaded or whether you intended it to cover
22 streaming.

23 I think if you read the recommendation, it
24 often refers to things like transmitted digital
25 video, which to me would imply streaming is covered,

1 but if you just use the word "distributed," you
2 could argue it's not covered. I am not sure you
3 what intended to do.

4 I think certainly as long as Blu-ray stays
5 in the safe space, we wouldn't be objecting to using
6 "transmitted" instead of "distributed."

7 MS. CHARLESWORTH: On that issue on
8 Blu-ray, why is it important to distinguish
9 Blu-ray -- which is my understanding is Blu-ray, the
10 technology, has been hacked, maybe not widely
11 hacked -- I mean what is the concern specifically
12 about Blu-ray?

13 MR. WILLIAMS: I think you are right it
14 has been hacked and it has not been widely hacked in
15 the way that CSS was. And because it's a kind of
16 premium product for us and in the technological
17 measure has proven to be much more robust and better
18 at adapting than previous measures, we would like to
19 retain the protection for that product.

20 I think Bruce can probably speak quite
21 well to the importance of it, but that is part of
22 our reasoning and we don't think there is a real
23 need for it given the existing exemption that
24 already covers these type of products.

25 That was the last topic that I wanted to

1 touch on other than there is a lot of talk about the
2 gatekeepers and I understand why that is the case,
3 but I just would remind you that in the legislative
4 history and the manager's report, there is a pretty
5 clear statement that if the problems people are
6 facing are due to some requirements imposed by
7 intermediaries or distributors, that is not a valid
8 grounds for an exemption.

9 It's page six, I believe, is the manager's
10 report, which in the Copyright Society Journal
11 reprint is on page 639.

12 And that is all I would have for today.
13 Thank you very much.

14 MS. CHARLESWORTH: Thank you.

15 Mr. Swart.

16 MR. SWART: Good morning. I am the EVP
17 and General Manager for Fox Home Entertainment
18 managing U.S. and Canadian business for 20th Century
19 Fox.

20 As you know, we produce and distribute
21 motion pictures and television content.

22 Recent pictures include "Night at the
23 Museum: Secret of the Tomb," "Taken 3," "Gone Girl"
24 and the academy award winning "Birdman."

25 And some of our current TV shows, as

1 mentioned, is "Family Guy," "Simpsons," "Empire,"
2 "Last Man on Earth" and "New Girl."

3 And I am going to leave all the legal
4 arguments to our counsel, but I will instead try to
5 provide relevant facts about our business. And to
6 the extent I don't have information needed, I would
7 be happy to follow up and get you that information
8 to the extent I can share that.

9 And I understand the panel today is
10 focused on derivative uses of our content in other
11 film works and I will speak specific to that issue,
12 but I hope you will agree that my testimony is
13 relevant to other proposals, as well, as previously
14 mentioned.

15 So although my primary responsibility at
16 Fox is monetizing our creative assets through sales
17 of DVD and Blu-ray discs, as well as through all
18 methods of digital dissemination, I will also speak
19 today about our ongoing licensing efforts because
20 I think, as everyone knows, we have a \$16 billion
21 to \$17 billion consumer business in the United
22 States, but that business is changing dramatically
23 and I know there is a lot of headlines out there
24 about how the business is shifting.

25 And so our challenge is to devise new

1 business models to leverage new points of
2 distribution and make sure that the consumer has
3 access to our content in the best available way in
4 a legal and protected environment.

5 As you know, we invest substantial
6 resources in creating and distributing films and it
7 is a high-risk business.

8 You know, one of the movies I stated,
9 "Night at the Museum," took about \$170 million at
10 the box office and the reported budget on that was
11 about \$125 million and the marketing was in the tens
12 of millions of dollars in the U.S. And that movie
13 six months after its release is now close to
14 approaching break even as opposed to profit.

15 You know, a few years ago, the original
16 movie was in profit by the time it reached the
17 ancillary markets. So the marketplace is changing.

18 Every dollar spent by the consumer is not
19 always equal in terms of profit implication. I am
20 sure most of the filmmakers in the room understand
21 that.

22 MS. CHARLESWORTH: Can I ask you, because
23 we're talking about basically some -- one of the
24 questions here is whether it's an unlicensed use
25 versus a use that requires a license. And we have

1 had a lot of discussion about, for example,
2 non-documentary films.

3 Can you remark a little bit about that
4 market, the licensing market for derivative uses and
5 whether you think that would be impacted by the
6 proposal that proponents have put forth in terms of
7 using clips in, say, narrative films.

8 MR. SWART: We actually do a pretty
9 vibrant licensing business. We have a clip
10 licensing business. We have a team of three people
11 that actually looks and considers 2000 applications
12 a year on average. So we actually have a business
13 organization and we are set up to actually
14 accommodate and handle those requests.

15 MS. CHARLESWORTH: Do you see any
16 impact -- let's say we were inclined to grant an
17 exemption for short clips, fair uses in narrative
18 films. There is already been exemption for
19 documentary films.

20 Do you see that as materially impacting
21 the sort of clip licensing that you do or do you
22 think that it would be have little impact?

23 MR. SWART: I think it would probably have
24 a pretty substantial impact on that business unit,
25 certainly. So I think there are some fairly

1 significant commercial implications of that.

2 And I think one of our primary concerns is
3 that once works are circumvented for any reason,
4 they're far more susceptible to piracy because, as
5 you know, piracy is a massive issue for us. We keep
6 track of and monitor that with the MPAA.

7 And once you have unlocked a movie that is
8 out there, for whatever reason -- your question
9 about Blu-ray encryption -- and I will defer to
10 Mr. Turnbull later -- but the reason why we're so
11 strongly in support of keeping the encryption and
12 holding Blu-ray out is because when it comes to
13 piracy, the biggest issue that works in a pirate's
14 favor is time.

15 If they get out in front of us -- we had
16 "X-Men: Days of Future Past." Before we released
17 the movie in the ancillary market in the U.S., there
18 were over 50 million illegal views of that movie
19 worldwide before we even had a product in the
20 marketplace, which we eventually sold around
21 6 million copies of that particular movie.

22 So for us, the fight against piracy is
23 about trying to control timing.

24 So the camcorder version of the movie is
25 available almost immediately as it shows up in the

1 theater. And the minute you release it on DVD or
2 digital in any market in the world, that becomes the
3 source material for a pirate.

4 With Blu-ray, the key thing with Blu-ray
5 is it takes longer to hack than any other form of
6 distributed media.

7 MS. CHARLESWORTH: So is your main concern
8 at Fox about this potential exemption the piracy
9 issue? Is that it rather than the licensing issue?

10 MR. SWART: It's dual. It's about the
11 piracy issue and being able to control and regulate
12 that which we can. And then we believe that would
13 also destroy our licensing business.

14 And as I say, with any distributor we work
15 with, copy protection and encryption is critical.

16 So as we go into the digital
17 marketplace -- and I will share some statistics with
18 you in just a minute -- as we negotiate with
19 distributors and licensees on the Internet and with
20 cable providers, we pay a considerable amount of
21 attention to copy protection and the encryption
22 services to protect our media.

23 As I said, particularly when it comes to
24 advanced access content system that is used on
25 Blu-ray, relative to other types of DRMA, CSS is

1 still doing quite well against hacking and that's
2 why we would caution against undermining the
3 technology, because it at least gives us more time
4 to actually commercially release and exploit our
5 movies before the pirates get access to it.

6 MS. CHARLESWORTH: Do you have any
7 evidence -- maybe this not in your department -- but
8 a connection between sort of the types of uses and
9 using Blu-ray clips and derivative clips in films in
10 the way that has been described here today and
11 piracy.

12 MR. SWART: We don't have a direct link as
13 far as I am aware but I can look into that.

14 As I say, we do monitor the actual piracy
15 resources with the MPAA around the world. I am not
16 sure of the exact link to short form content.

17 So continuing, as you know, the
18 marketplace for digital content continues to evolve
19 rapidly. Three years ago during these last
20 proceedings, the estimates were that roughly
21 30 million digital tablets had been sold. That
22 number is now over 200 million. So obviously, we
23 are seeing a proliferation of portable content
24 packagers. And that makes it very clear to us that
25 consumers want access to our content for these

1 devices.

2 And we estimate that online video revenue
3 will be close to \$9 billion, according to Kagan this
4 year. And in response to that, obviously, we
5 continue to aggressively embrace a variety of
6 methods of dissemination.

7 And as you heard more about on another
8 panel, Mark Tietell of DECE spoke to you guys about
9 UltraViolet whereby consumers can pay one price to
10 access their content on multiple online services as
11 well as on Blu-ray discs and by way of associated
12 digital copies.

13 We kind of led the way in providing legal
14 use for consumers of providing digital copies on
15 substantially all of our new releases because we
16 wanted to provide a legal way for consumers to move
17 their content around. And I believe that was
18 covered earlier.

19 Right now, we have over a thousand titles
20 that are UltraViolet enabled, and that is at least
21 as many that have a digital copy option. So if
22 people buy a disc, they can redeem a code -- if they
23 go online, they can redeem a code and pick their
24 online digital service for which they want to add
25 that title into their library and the definition

1 which they would like.

2 Using UltraViolet retailers such as Vudu
3 and Flixster, consumers can even convert their early
4 DVD's into UltraViolet to enable high definition
5 copies for a very small price.

6 Three years ago, a pilot program at
7 Walmart started and you could go into a Walmart and
8 take your legitimate discs and you could create
9 digital versions of those either in standard
10 definition or high definition.

11 And as Matt said earlier, that is now
12 available for you in home if you have an
13 authenticated disc.

14 MS. SMITH: And do you know how much
15 content is available for --

16 MR. SWART: For us, it's over a thousand
17 titles. It's substantially all of our titles that
18 are out on DVD and that are on digital.

19 MS. CHARLESWORTH: Movie titles?

20 MR. SWART: Movie titles, yes.

21 And in addition to that, we have nearly
22 600 titles that are available on VOD services,
23 through Allied and Amazon.

24 And VOD is for titles that we haven't been
25 able to release in the physical, where it doesn't

1 make sense. So movies for horror movie fans or film
2 students looking for archival movies.

3 And we're actually accelerating that.
4 That is up from about 300 titles a couple of years
5 ago.

6 The challenge we have there is just
7 finding the assets for the condition of the raw
8 materials so we could actually provide it to the
9 services.

10 So where we may not -- the economics may
11 not make sense for us to do a massive press on DVD
12 and Blu-ray and invest in that, we do make these
13 movies available for manufacturer on demand release
14 sources.

15 And Allied is basically a back end out of
16 the midwest that provides services to online
17 retailers -- not so much Amazon because they do it
18 themselves, but other retailers that are interested
19 in offering that service to their clients.

20 And right now, content is available
21 through online services such as Hulu, Netflix,
22 Amazon, iTunes, YouTube, Google Play, Fox.com,
23 through video game consoles, cable set-top boxes and
24 Comcast.

25 And three years ago, we had about 400

1 movie titles and TV titles available through digital
2 distribution. Now, we have more than 1400 titles.
3 So we're going as fast as we can to get the titles
4 out there and available.

5 Three years ago, we had licensed our
6 content to about a half a dozen online providers.
7 Now, there are more than 20 in the United States.

8 So in terms of breakdown to how many
9 titles we have, on EST, we have about 900 titles
10 between Fox and Dreamworks, so about 625 titles
11 available for adding to library on TV.

12 For video on demand, we have over a
13 thousand titles and about 150 titles on TV.

14 And for SVOD, we have about 150 films and
15 144 TV series. And the limitation with SVOD,
16 subscription video on demand tends to be an
17 individual studio's relationship with a premium
18 cable company because the premium cable companies
19 will pay for the exclusive right to that content.
20 So that is the only limitation in putting more
21 movies into SVOD, is the exclusive rights that we
22 sell in advance.

23 MS. SMITH: In terms of the circumvention
24 exemption sought for material distributed online, do
25 you have any specific concerns about the various

1 technological protection measures or is it your view
2 we treat them as sort of all the same online in its
3 own category? Does it matter what type of
4 technology is used for encryption for online?

5 MR. SWART: For our online content right
6 now, we would like to have the AAC3 standard, but at
7 a minimum, it has the DVD standard DRM that goes
8 with it.

9 And we verify -- every service that I just
10 mentioned, we go through very diligently what their
11 DRM is and how robust their DRM is, but usually
12 within those rights, we will allow consumers to make
13 copies of the entire show. Like they could redeem
14 it and move their content around.

15 There is multiple use options allowed with
16 most of the digital providers and it varies based on
17 the provider and I understand it varies by studio,
18 as well.

19 And I think coming back to our physical
20 business, as much as the marketplace is changing,
21 the vast majority today of our transactions still
22 come from DVD's. That is still the most pervasive
23 format out there. We're seeing the Blu-ray part of
24 the business is growing but not as fast as it was
25 before.

1 And the digital library building is
2 growing aggressively and, obviously, subscription
3 streaming is growing aggressively.

4 MS. CHARLESWORTH: And I want to have you
5 wrap up in the next minute or so so we can get to
6 Mr. Turnbull and we have a bunch of questions that
7 have come up, I am sure, listening to you all that
8 we want to ask back to your friends at the other end
9 of the table, so.

10 MR. SWART: I think I can wrap up right
11 there if you would like.

12 MS. CHARLESWORTH: Perfect.

13 Mr. Turnbull.

14 MR. TURNBULL: Thank you.

15 Again, I am Bruce Turnbull. I am counsel
16 to AACSLA here to oppose this particular exemption
17 request.

18 I want to make -- we have obviously
19 submitted comments that you all have read and taken
20 into account.

21 I want to make four points in relation to
22 the hearing this morning.

23 The first is actually something that I
24 have been a little bit surprised and concerned about
25 as the hearing has gone on and last night in

1 preparing and rereading particularly the reply
2 comments and that is the introduction of 4K in ultra
3 high definition into the discussion.

4 It is our understanding, and we would
5 absolutely want the office to take this
6 understanding, that the request that has been made,
7 even as applicable to Blu-ray, does not in fact
8 extend to 4K or ultra high definition content and to
9 the technologies that are about to be deployed to
10 make that content available, including a new,
11 entirely new, AACs technology that would be deployed
12 as part of that system this fall for Blu-ray. It's
13 a different product. It's a different format.

14 And I would not want any confusion were
15 you to take the unfortunate position of granting an
16 exemption with regard to Blu-ray that UHD would be
17 incorporated.

18 MR. DAMLE: Just a question about that.

19 Is that new technology going to be called
20 "Blu-ray"?

21 MR. TURNBULL: My understanding -- I am
22 not sure that the marketing people are done yet, but
23 my understanding is that trademark term is "Ultra HD
24 Blu-ray."

25 MS. CHARLESWORTH: That will be nice and

1 confusing next time around.

2 MR. TURNBULL: And the AACS technology
3 will use "AACS" in its name but will have indicators
4 that --

5 MS. CHARLESWORTH: Just to be clear, we do
6 not understand the proposal to include ultra HD or
7 4K.

8 Mr. Hilkert.

9 MR. HILKERT: Not to step on your time. I
10 just wanted to clarify, we are not seeking ultra HD
11 and our mission of 4K is to talk about the fact that
12 HD in the contemporary system that we operate in is
13 the standard.

14 MR. TURNBULL: I understand --

15 MS. CHARLESWORTH: We now have a three-way
16 agreement on one issue. So we made progress.

17 MR. TURNBULL: Moving on, the other three
18 points that I wanted to make about what is actually
19 before you, and to clarify what is not, is the real
20 lack of evidence with regard to the need to
21 circumvent Blu-ray.

22 We had one this morning and I realize it
23 sort of came up in the discussion, but the
24 discussion of wanting to use archival footage from
25 Leni -- and I would pronounce -- Riefenstahl, I just

1 did a quick search making use of the UCLA Internet
2 here and there are no Blu-rays of her works. There
3 are DVD's but there are no Blu-rays that I could
4 find in a quick search.

5 That is typical of what has been presented
6 in this hearing in this proceeding by the proponents
7 here. They have thrown out we need high definition,
8 we need the high definition, but there are no
9 examples -- the examples of actual Blu-rays that
10 they want to circumvent in order to make use of the
11 content there is really thin.

12 And I mean the "Selma" example, as well,
13 if you do want same kind of search for civil rights
14 footage, you find a number of DVD's. You don't find
15 any Blu-rays.

16 If you talk about a "Dick Cavett Show"
17 that was shown on television in the 1970's, that was
18 NTSC. It was not high definition to start out with.

19 MS. CHARLESWORTH: Here is a question.

20 At least in theory, do you think it's
21 possible that there is some HD content that is only
22 available on Blu-ray even if it's a small category.
23 And if so, do you think that if there were a
24 demonstrated need -- and this is hypothetical -- for
25 that content to distribute a film, do you think that

1 might be a justification in that limited instance to
2 use Blu-ray?

3 MR. TURNBULL: I think that is too
4 hypothetical, quite honestly, that this is so
5 limited -- there is such a limited body of work --
6 and we presented it and the joint creators have
7 presented it -- that is available only on Blu-ray.

8 And in fact, when you go through -- and I
9 don't remember whether it was in record or not -- so
10 even if you had that, there have been the
11 discussions of technical fixes that could be done to
12 the standard definition content to make it
13 acceptable.

14 In fact, we heard quite a bit of testimony
15 about technical fixes that actually did make the
16 content acceptable for the use that people wanted to
17 make of it.

18 And so I think that rather than, and as
19 Mr. Swart said, that you take a technology that has
20 held up reasonably well against the hacking
21 community -- and where as I said yesterday and you
22 will hear more of as things go on -- the only
23 available hacks are commercial products which have
24 in a number of cases been found to be circumventing
25 and are getting taken off the market.

1 And I would note that the proponents in
2 this particular class when asked by the office how
3 would you do circumvention said well, we understand
4 there is software available.

5 It's important to us as a provider of the
6 content protection technology of the TPM to know
7 what it is that they're going to use so that we can
8 deal with the consequences of it if you were to
9 offer an exemption for them.

10 We think that they can get what they need
11 through other means. We have heard about the
12 technical fixes. We have heard about the fact that
13 content is available almost uniformly on DVD's.
14 There is very, very little, a tiny, tiny amount that
15 is limited to --

16 MS. CHARLESWORTH: I think a lot of the
17 record here is about the difference between HD and
18 SD. And assuming that it's true that there is very
19 little Blu-ray-only content, the question then is to
20 the extent that you accept their argument that you
21 need HD to fulfill modern current distribution
22 requirements, if that's a legitimate claim, then
23 they're saying that is going to be Blu-ray.

24 So that is really the question we're
25 grappling with. If you want to address that for us.

1 MR. TURNBULL: I understand.

2 Again, I think if you read deeper into,
3 for example, PPS standards, they talk about
4 up-converting of content being acceptable within
5 their definition of HD. So it seems to me you don't
6 need the original source of Blu-ray in order to meet
7 those requirements.

8 MS. CHARLESWORTH: So your response is
9 that they should up-convert the SD.

10 MR. TURNBULL: They should engage in the
11 technical fixes, which although are inconvenient and
12 the like, are available to them.

13 Finally, I just again underscore the
14 concerns that we have about the harm to our
15 technology and to the content owners who have relied
16 on that technology, to the extent that there are
17 exemptions granted, that it will point people toward
18 tools that we believe are not permitted under the
19 law and so we need but would be encouraged by
20 various forms of exemptions.

21 MS. CHARLESWORTH: So I understand, is it
22 your position that granting the exemptions to
23 Blu-ray might increase the number of tools that are
24 available or increase the use of tools that are
25 already currently on the market?

1 MR. TURNBULL: I would hope it wouldn't
2 increase the number that are available. I think we
3 have done a good job of technology, but there are
4 some that have been made available and it would
5 encourage people in thinking that those are
6 legitimate tools.

7 MS. SMITH: And if people think those are
8 legitimate tools and use them more and that
9 compromises Blu-ray, is it on a device level or
10 model level or can you talk a little bit more about
11 how those specific tools compromise?

12 MR. TURNBULL: The tools work in two basic
13 ways at this point. One is that they, the purveyors
14 of these tools, having obtained means that we don't
15 know, device keys, which are the key to -- which are
16 the linchpin in decrypting the content.

17 And so if you have a circumvention tool
18 that has a legitimate device key in it, then that
19 can basically decrypt any movie on Blu-ray.

20 The second way that they work -- and this
21 is the way the SlySoft works is SlySoft has a device
22 key they keep at their server and they take each
23 title as it comes out -- and this is one of the
24 reasons it takes a little time to hack the AAVS
25 technology -- because they have to attack each

1 title. And then they distribute to their customers,
2 if you will, the title key, which is another way of
3 getting at the decryption.

4 Normally, a device uses its device key to
5 do a decryption of the title key which is then used
6 to decrypt the movie. SlySoft does the decryption
7 to get to the title key and then disseminates the
8 title keys.

9 MS. SMITH: And so can you talk a little
10 bit about -- I may not phrase that right -- but
11 Blu-ray's ability to revoke keys.

12 MR. TURNBULL: To the extent that we find
13 out what device key is being used, we can and do on
14 a regular basis revoke the device keys. There are
15 actually a series of values given to all them, but
16 there are a series of values that we can revoke.

17 And what we do is say typically to
18 software layer providers who make the software for a
19 Blu-ray disc that is played on the computer or maybe
20 a game console, that they have to upgrade their
21 technology and include a new key to their legitimate
22 users.

23 And then every month, we revoke keys. And
24 it does have some effect and it will -- the problem
25 is that the bad guys, if you will, do a good job at

1 hiding what keys they are using. So if we don't
2 know what key it is, we can't revoke.

3 MS. SMITH: And to revoke keys, you need
4 access on a software level, not like on a per user
5 level.

6 MR. TURNBULL: Well, if a key were to be
7 hacked from a set-top player, that would be an
8 individual device. That individual device has its
9 own individual key.

10 A software product that is used across a
11 range of implementations on the computer uses a
12 single key for all of a particular implementation
13 that they have deployed. And so those are the keys
14 that we're aware of that have been compromised. We
15 don't know of any that have been compromised off of
16 a set-top player. So we haven't had to actually do
17 that on an individualized basis.

18 MS. SMITH: Just one more. And if you
19 have to keep revoking keys, can you run out of keys?

20 MR. TURNBULL: No, no.

21 MS. CHARLESWORTH: And Mr. Taylor, we
22 heard from earlier. So we now have some questions
23 going back to you guys.

24 And I know Mr. Morrisette maybe had a
25 comment earlier, but the things I'm interested in

1 hearing about from the filmmaking community -- we
2 don't really discuss the request to broaden this
3 from short clips.

4 I'm particularly interested in hearing
5 about the issues of converting your SD DVD to a high
6 def DVD which seems like would be an appealing
7 alternative in many situations and apparently is
8 broadly available, and also, the upgrade process,
9 you know, where you enhance the resolution.

10 I think some of that has been addressed in
11 your papers but what we're trying to sort out sort
12 of realistically, are those tools available to you
13 as an alternatives to circumvention, which is a very
14 important question in this proceeding.

15 So I threw out a bunch of issues for this
16 side of the room. Maybe you can figure out the
17 best -- Mr. Lerner is stepping up to the plate.

18 And then Mr. Morrisette, did you have
19 something you wanted to add before Mr. Lerner?

20 MR. MORRISSETTE: Yes. And let me address
21 some of your questions -- some of your comments
22 about the up-converting.

23 We have been doing this for three years
24 since we have had the exemption and it takes
25 expensive equipment and somebody with my level of

1 expertise to do it to a point where you can actually
2 use the footage in an edit system that is making a
3 feature-length documentary and it still doesn't look
4 very good because you are making up pixels. It's
5 three times or six times more resolution than
6 standard def.

7 MS. CHARLESWORTH: Pardon me -- I'm sorry
8 to interrupt -- but do the distributors accept that
9 film for distribution?

10 MR. MORRISSETTE: Sometimes they don't and
11 often they don't.

12 Like for our show on Roger Ebert with the
13 film clips, some of them squeaked through and some
14 did not and we had to pull those clips.

15 MR. DAMLE: This is after up-converting.

16 MR. MORRISSETTE: Yes.

17 You are essentially taking an image that
18 is the interlaced standard def image in a square
19 format, stretching it out to widescreen and adding
20 hundreds of fake lines, repeated lines into the
21 picture to get the actual spec of the file to be
22 high def, but the visual image quality of it is not
23 acceptable in many cases.

24 In fact, with BBC -- we have had many
25 shows on BBC throughout the years -- they actually

1 have what they call a visual quality control expert.
2 And that person just sits there and watches the
3 show.

4 And the show's going along looking great
5 and then all of a sudden, there is a really fuzzy
6 clip that doesn't look good and then the show
7 continues with high definition footage. They will
8 flag that. Even though it technically passes their
9 specifications, it would be flagged.

10 MS. CHARLESWORTH: And if you can also
11 address high def DVD's as an alternative -- I'm
12 sorry -- the Vudu conversion.

13 MR. MORRISSETTE: Vudu basically is two
14 options. One is the streaming option, which you do
15 not get a file. It's just packets of random data
16 that is played on your computer and it evaporates as
17 soon as it plays.

18 Downloads are an issue in terms of what is
19 available. It's also highly compressed, downloads.
20 It's not the same level of data rate as Blu-ray
21 would be. It's about one-fifth the data rate. And
22 they do this in order for it to play smoothly on
23 your computer.

24 MS. CHARLESWORTH: Just to clarify, if you
25 go through Vudu and swap out your SD DVD and you get

1 the high definition download, it's your contention
2 that that HD download is still inferior quality to
3 Blue-ray. And by what magnitude?

4 MR. MORRISSETTE: Well, it's data rate.

5 It depends on what the copyright holders decide, how
6 good a quality is good enough. If their goal is to
7 have people watch it on their phone and tablet, they
8 are not going to give us -- I mean a 30 megabits per
9 second data rate is the way you will get it off of a
10 circumvented Blu-ray disc.

11 MS. CHARLESWORTH: Mr. Lerner.

12 MR. LERNER: If I could just add quickly
13 to a couple of points.

14 In order to do up-conversion, you either
15 have to have a Jim Morrisette, who is a trained
16 engineer who has been doing this for 40 years, who
17 works equipment that can't even be rented out
18 because it's so complex, or you have to send it out
19 to a processing house and that can cost several
20 hundreds of dollars an hour to work with a short
21 clip.

22 So if you are making fair use, you might
23 not be only making one use. It quickly comes to a
24 point where really, the only people who can do
25 up-conversion, if it's even acceptable, which often

1 it isn't, is professionals like Jim who have this
2 massive amount of expertise.

3 Also, with respect to HD digital
4 inventory -- we heard about this from the written
5 comments about HD digital downloads -- but my
6 understanding is that is a very, very small subset
7 of DVD's out there and there are many, many, many,
8 many titles that are not available through this
9 program.

10 And with regard to the short clips, while
11 we acknowledge that most of the clips that will be
12 used are short, we don't think it's appropriate to
13 use a bright line test for that. The Supreme Court
14 has cautioned against using a bright line test and
15 we think it would be appropriate to follow the
16 Supreme Court's jurisprudence on that.

17 Furthermore, we have shown in our comments
18 that the court has had no problem invalidating
19 illegitimate fair use claims.

20 MS. CHARLESWORTH: But this goes to the
21 conversation we were having earlier. It's unlikely,
22 I think, that a very lengthy clip incorporated into
23 a film that goes well beyond the need or comment or
24 criticize or to provide commentary on that clip
25 would be found to be a fair use, I think.

1 I mean this is, again, about speaking in
2 generalities. I mean all of these exemptions for
3 film have always been based on the idea that they're
4 short clips. And the idea that there would be no
5 recognition that in general you can't use a lengthy
6 motion picture clip or that you can use one in a
7 film and that we would be suggesting that that is
8 typically fair use seems a little -- well, certainly
9 well beyond anything we have said before.

10 And so I think -- I mean I assume -- well,
11 I shouldn't assume -- but it seems like there has
12 been a lot of good use made of the existing
13 exemption based on short clips.

14 So to say that would be removed, I think I
15 am not seeing a good case being made for that other
16 than, yes, in certain other completely unrelated
17 circumstances, the Supreme Court or other courts
18 have said you can use a full work, for example, but
19 clearly, that is not what we're talking about here.

20 We are talking about incorporating bits of
21 existing motion pictures into new motion pictures.

22 And I mean are there many -- can you
23 give -- I didn't see anything in the record that
24 suggested that you were putting lengthy clips from
25 copyrighted films into your film.

1 MR. QUINN: Can I just speak to that,
2 because I think what we're really getting at here is
3 the idea of bright lines. So in most cases, the
4 term "short" is sufficiently vague.

5 MS. CHARLESWORTH: It is actually not even
6 a bright line in itself. I agree with that. So
7 it's guidance.

8 MR. QUINN: Right.

9 And so but my point is that I just think
10 we need to be cautious that when you talk about
11 bright lines -- I have been making documentaries for
12 50 years. In the early days, we used the fair use
13 law and then clearance culture came up and so big
14 rights holders were threatening everybody -- you
15 know this history. They were sending cease and
16 desist letters and there were a lot of threats of
17 lawsuit.

18 And what became to be a professional --
19 and this is what people were being taught in schools
20 and this is what almost every lawyer would tell you,
21 you have to clear everything.

22 Now, there were some bright lines. I
23 don't know where they came from. They weren't in
24 the copyright law. For instance, we were told news
25 can still use fair use but you in the documentary

1 world cannot.

2 There was something called a 30-second
3 rule which you could find in the NBC standards and
4 practices book, that you could use 30 seconds but no
5 more.

6 And so I just caution us when we are
7 talking about documentary versus narrative, when we
8 are talking about length, that no, what we use is
9 generally short. And what we mean by "short" is we
10 can only use as of much as we need to make our point
11 and no more.

12 MS. CHARLESWORTH: I think that is well
13 put. And the existing exemption says short. And
14 obviously, short is not a bright line and there is
15 some interpretation, but the point is we're not
16 saying use very long clips or excessively long
17 clips.

18 And I think that is good guidance when we
19 are trying to, again, speak in generalities of what
20 would likely be a fair use.

21 MR. QUINN: The caution I would have is
22 that bright lines, because we have lived with them
23 in the past, they have a history of creating a real
24 burden and misinterpretation of the law.

25 I just wanted to respond to one other

1 thing, too, that we are rights holders. So when you
2 talk about piracy, yes, we have concerns about
3 piracy, but let's be clear that we are not the
4 problem. There are no instances, no allegations,
5 even, that anything that we do leads to piracy.

6 So I mean I don't know why it even is
7 relevant to our making fair use and needing the
8 limited exemption that we are seeking. I think that
9 is something that should be taken off the table and
10 certainly has nothing to do with us other than we
11 suffer from it, also.

12 MR. CHARLESWORTH: We are running a little
13 late but we will try and go over just a couple of
14 minutes.

15 Mr. Lerner, did you have another comment
16 or response?

17 MR. LERNER: I just wanted to add one bit
18 of clarity on short portions.

19 So we don't disagree with what you said
20 about it not being a bright line rule.

21 Another way to think of it might be to say
22 it is only -- circumvention is permitted only as is
23 necessary to conduct the use in question -- is it
24 commentary, educational use, whatever it may be.

25 And we think that would be better than

1 short portion, but we're not as concerned about
2 short portions as we are, for example, about the
3 ability to access HD content that we need to make
4 fair use and the ability as narrative filmmakers to
5 use it, as well.

6 MS. CHARLESWORTH: Those are your big
7 asks.

8 MR. LERNER: You could say that.

9 MR. MORRISSETTE: You talk about short
10 clips. Well, that is all we rip. When we
11 circumvent a DVD, we're not circumventing and making
12 a copy free file of the whole movie. We don't have
13 the time for that.

14 MS. CHARLESWORTH: And I appreciate that
15 and I think -- Mr. Lerner, did you have something
16 further?

17 MR. LERNER: One quick point very quickly.

18 One of our UCI Intellectual Property, Arts
19 and Technology Clinics clients is here who you will
20 be hearing from in a different context next week.

21 She does in-depth, six-hour seminars on
22 particular films that are wall-to-wall criticism and
23 commentary. Right now, she is only able to do them
24 live but it's conceivable that someone like her or
25 she might come forward and say I want to make a film

1 where I need to deconstruct scene by scene a
2 particular film, would that constitute a short
3 portion, would it not. It probably would have many,
4 many excerpts.

5 So that is one example where the term
6 "short portion" might be stretched, but again, it's
7 not nearly as important as the other concerns that
8 we brought to you.

9 MS. CHARLESWORTH: Now, one thing I
10 asked -- I think we asked over here, is there a need
11 to expand this to video games? I saw one reference
12 to a video game in the record, but I mean this
13 doesn't seem to be -- what is the need to circumvent
14 video games for this exemption?

15 MR. BENMARK: One thing I should say is
16 that it's really just the question of principle, but
17 we do think video games are a part of popular
18 culture in the same way that films and television
19 shows are part of popular culture.

20 So there is really no reason to not be
21 able to get video game footage. And if someone
22 wants to make, say, a comparison of a particular
23 video game to a film --

24 MS. CHARLESWORTH: But you would have to
25 film the video game, right, because you don't

1 have --

2 MR. BENMARK: I think there are tools
3 online where you can pull footage.

4 MS. CHARLESWORTH: But to put it into a
5 film -- you don't have your audiences sitting there
6 playing a video game. They are just watching a
7 depiction of a video game. So you would film the
8 video game.

9 MR. BENMARK: But you would possibly have
10 to bypass the TV to do that.

11 MS. CHARLESWORTH: Is there any instance
12 of anyone where they made a film where they needed
13 to bypass the TPM in a video game?

14 MR. QUINN: I can describe a project we
15 were developing. Steve James actually did "Hoop
16 Dreams" and had children of that age who were
17 playing video games and he became extremely
18 interested in kind of the effect of video games on
19 teenagers and addiction and those kind of questions.

20 And so as he was thinking about that film,
21 one of the questions that he was asking us was how
22 can I in film recreate a bit of the experience of
23 the viewer of what these kids are going through in
24 the film he was going to make. So he was looking to
25 get high resolution images from video games.

1 We ended up not doing the project, not
2 necessarily for that reason, but there are people
3 who are doing -- there are films that I have seen at
4 film festivals that are very much using excerpts
5 from video games to critique them to talk about
6 their sexism, their violence, other aspects of video
7 games.

8 So it's something that documentary
9 filmmakers have been paying attention to.

10 MS. CHARLESWORTH: Any other examples of
11 use of -- I mean that project sounds like it didn't
12 go forward.

13 MR. QUINN: It did not.

14 MS. CHARLESWORTH: Do you guys have any
15 further questions on this?

16 MR. WILLIAMS: If I could just quickly
17 qualify one thing I said earlier on the short
18 portions issue.

19 If you are going to clearly expand or
20 clarify the exemptions such that it applies not only
21 to distributed downloads but transmitted video, I
22 think we would find it crucial that you retain the
23 short portions limitation, because if you haven't
24 paid for access to the full copy, you shouldn't at
25 the end of the day be able to take a full copy off

1 of a video service and end up with a full copy.

2 MS. CHARLESWORTH: And just I had one more
3 question. Mr. Perez, someone -- I think it was
4 Mr. Turnbull who looked something up on the
5 Riefenstahl film and said that the --

6 MR. TURNBULL: There are no Blu-rays.

7 MS. CHARLESWORTH: There are no Blu-rays
8 available.

9 Is that your understanding, as well?

10 MR. PEREZ: I haven't had a chance to look
11 it up, but in the case where there was no Blu-ray
12 available, then he would have to go through DVD.

13 MS. CHARLESWORTH: Anything further?

14 MR. RUWE: I expect a very brief answer to
15 this.

16 Mr. Swart, we have heard about the expense
17 associated with upresing. Can you quantify the
18 piracy damages that are avoided by the time that
19 Blu-ray is able to, in other words, buy in avoiding
20 being pirated?

21 MR. SWART: Sorry. The piracy damage
22 during that window --

23 MR. RUWE: Yes, that window.

24 MR. SWART: -- of one to two weeks?

25 It would be almost 75 to 80 percent of our

1 total Blu-ray sales of that title would be impacted.

2 So the way the marketplace works is that
3 the first two to four weeks is where the vast
4 majority of the Blu-ray business happens and then it
5 drops off dramatically and steadies down as the
6 price drops.

7 MS. SMITH: So if someone were to
8 circumvent Blu-ray that has already been released
9 three months ago, do you see additional losses from
10 piracy?

11 MR. SWART: We do. As I say, we track the
12 illegal views and we track the source material. So
13 the challenge is the pirates will take the best
14 quality source material available. So you see the
15 camcorder being replaced as soon as the digital
16 version comes available. That gets replaced as soon
17 as the key gets unlocked. That gets replaced as
18 soon as the Blu-ray gets unlocked.

19 MS. SMITH: If the pirates have sort of
20 already come in in the first two weeks of the
21 Blu-ray and then three months later --

22 MR. SWART: There is a quality perception.
23 So even people that are consuming pirated content,
24 they would rather watch the DVD than the camcorder
25 version and they would rather watch the Blu-ray

1 version than the DVD version.

2 So just to the extent we can protect the
3 content, it's really important. That's why you see
4 so many studios right now looking at global street
5 days. It refers to Korea or Switzerland going first
6 or Russia going first because it cannibalizes all
7 the other markets, especially in technically
8 developed countries.

9 MR. CHENEY: Mr. Swart, do you think that
10 the exemption that we're talking about today really
11 affects this Blu-ray concern that you have? It
12 seems to me that a lot of the films are being made
13 months and years after the fact. So would that
14 really have an effect on your Blu-ray sales?

15 MR. SWART: I think the circumvention
16 techniques certainly would because you have no
17 control of that. And I think frankly from a Fox
18 standpoint, that's why we did set up an entire
19 licensing division for just this kind of use.

20 So we actually do have a business that
21 says any time we see a demand for our content, we
22 realize it's a good thing. So everything we are
23 trying is to just create a model around that that
24 allows it to be legally and properly managed.

25 MS. CHARLESWORTH: Mr. Lerner, I think,

1 had another comment.

2 You're withdrawn?

3 And Mr. Morrisette, we will give you the
4 last word.

5 MR. MORRISSETTE: One more clarification.
6 And the video game story brought it up.

7 Set-top boxes, DVD players and gaming
8 consoles have one and only one output, HDMI, and
9 that is copy protected. You cannot just plug your
10 game console into a digital recorder, even into a
11 laptop. It won't work. The only thing that is
12 available that you could record on some of the older
13 boxes is an analog standard def signal, which is not
14 up to the technical equipment.

15 So even that example of the video games,
16 we would need to break the HDCP hardware encryption
17 that is on every HDMI connector on every TV in the
18 world.

19 MS. CHARLESWORTH: So maybe it would be
20 easier just to film it.

21 Video games are another interesting
22 subject. We will be hearing more about them but I
23 appreciate that and I appreciate all the technical
24 comments as well as the legal points that were made
25 today. This is a very interesting area.

1 It's definitely evolved in the last three
2 years from what I am hearing and it will continue to
3 evolve.

4 So we will take all of your thoughts under
5 consideration and hopefully come out with something,
6 you know, that everyone will feel okay about.

7 All right. Take care and we're going to
8 reconvene at -- the next one will start a little bit
9 late at 11:30 so people can have a brief break.

10 (The proceeding was concluded at
11 11:15 a.m.)

12

13 MS. CHARLESWORTH: For those of you on the
14 next panel, Class 20, Smart TVs -- two of you have
15 been here before, I think.

16 Mr. Williamson, welcome to the Rule 1201
17 rulemaking proceeding.

18 I think you probably heard maybe some of
19 the instructions earlier today but we try to take
20 turns when we speak. And we're going give you each
21 an opportunity to make a brief opening statement and
22 then we will shower you with questions.

23 And for the record, this is, again,
24 proposed Class 20, jailbreaking smart TVs.

25 And if we can go just from my left to

1 right, have you guys introduce yourself and explain
2 who you are representing here today or what
3 interests you are representing.

4 MR. WILLIAMSON: Just the introduction or
5 the introductory comments?

6 MS. CHARLESWORTH: Just introduce yourself
7 and then we will go back for your introductory
8 remarks.

9 MR. WILLIAMSON: Aaron Williamson on
10 behalf of the Software Freedom Conservancy.

11 The Software Freedom Conservancy is a
12 nonprofit corporation and also represents the
13 interests of some individual developers in the Linux
14 development project.

15 MS. GELLIS: Catherine Gellis. I am a
16 solo technology attorney and here with my Digital
17 Age Defense Project.

18 MR. WILLIAMS: And Matt Williams here for
19 MPAA, RIAA, ESA.

20 MS. CHARLESWORTH: Mr. Williamson, take it
21 away.

22 MR. WILLIAMSON: Thank you very much for
23 giving me the opportunity to speak with you today on
24 behalf of the this exemption.

25 As I understand, you have already heard

1 one exemption or one petition regarding unlocking of
2 hardware this week and I know you are in for several
3 more.

4 I think you are going to see a number of
5 similarities across these requests and across the
6 arguments related to them and I think you are going
7 to see they are all very similar to an exemption you
8 granted in the past which is the smartphone
9 jailbreak exemptions.

10 The non-infringing uses being argued are
11 similar, that the user should be able to install
12 licensed software, should be able to access hardware
13 functionality and view licensed media.

14 The alleged harms are going to be similar,
15 that enabling -- that that exemption will enable
16 infringement of media content and proprietary
17 software either played or installed on the devices,
18 that they will degrade the device security and
19 expose users to privacy and other risks and that
20 they will undermine software and content ecosystems.

21 I think these similarities are very
22 important. And similarities to smartphone
23 jailbreaking is extremely important because as the
24 Copyright Office stated in the final rule that it
25 published after the last rulemaking, it hadn't seen

1 any evidence over the prior three years that
2 granting this smartphone exemption had caused any of
3 the harms that had been put forth by the opponents of
4 that exemption, which are the same harms that are
5 being put forth by the opponents of this smart TV
6 jailbreaking exemption and the other jailbreaking
7 exemptions that you are going to be hearing arguments
8 about this week.

9 Not only did the traditional
10 vendor-approved software and content ecosystems
11 thrive beyond anyone's imagination, but new markets
12 for applications and alternative operating systems
13 arose or proliferated where they hadn't before.

14 And security hobgoblins related to
15 jailbroken devices never fully materialized although
16 there have been several high profile privacy issues
17 and security vulnerabilities related to the software
18 provided by handset manufacturers by telephone
19 networks and by their partners.

20 What Conservancy's petition focuses on
21 uniquely is that the TPMs on smart TVs and some of
22 the other devices, as well, control access not only
23 to the operating systems software of the
24 manufacturers of the smart TVs or their vendors and
25 content partners, they also control access to open

1 source software produced by communities of
2 developers such as those represented by my client,
3 Software Freedom Conservancy.

4 MS. CHARLESWORTH: Can I stop you for a
5 minute there. You said the TPMs at issue here
6 control access to the content that is accessed
7 through my smart TV.

8 Did I understand you correctly on that --

9 MR. WILLIAMSON: I am --

10 MS. CHARLESWORTH: -- that the TPMs that
11 you are talking about also control access to the
12 actual content that is delivered, creative content?

13 MR. WILLIAMSON: I am sorry if I gave that
14 impression.

15 MS. CHARLESWORTH: If you could clarify
16 what the TPMs protect and maybe if they are
17 distinguishable from TPMs that protect, say, motion
18 pictures that I view on my television. That is an
19 important issue for us to understand.

20 Although there are similarities, it's also
21 a different device and we want to make sure we
22 understand the technology and the TPMs at issue and
23 what the potential concerns might be with respect to
24 copyrighted content versus installing interoperable
25 other software that is not necessarily -- could be

1 protected by copyright but is a different issue.

2 MR. WILLIAMSON: One of the other comments
3 in support of this exemption, the one that Jay
4 Freeman I think explained, that the technical
5 details of what these TPMs do and what they do and
6 do not protect, extremely well.

7 Essentially, these TPMs, which are to be
8 clear, firmware encryption and software or firmware
9 on the devices that check for particular encryption
10 seem to verify that an update should be allowed and
11 also administrative access controls similar to the
12 kind that exist on any kind of computer.

13 So you might have a computer at home that
14 you grant yourself super user access to highest
15 possible permissions but you would only grant a
16 child, say, permission to use certain functionality
17 or certain applications. And that is the same
18 general kind of administrative access control that
19 is in place on these devices, although they would
20 need distinguishing between, for example, operating
21 system software which would receive very high
22 privileges to access, say, the hardware on the
23 device and application software which might receive
24 lower privileges.

25 So those are the two TPMs at issue.

1 And as Mr. Freeman pointed out in his
2 comments, they are primarily about -- the primary
3 purpose of them is device and application security.

4 The point is not necessarily even to --
5 though they do control access to software on the
6 operating system, software and application software
7 on the device, that is not necessarily the primary
8 purpose and intent.

9 As for the content played on these
10 devices, they typically -- smart TVs are typically
11 mostly platforms for streaming content from
12 providers such as Netflix or Amazon or Hulu and
13 those providers provide their own applications that
14 embed their own encrypted stream handling.

15 And so the mere fact that you can get
16 access to install new software on the device doesn't
17 necessarily give you the abilities to attack those
18 encryption schemes.

19 MS. CHARLESWORTH: You said doesn't
20 necessarily give you that ability.

21 Is it possible that it would allow you to
22 then hack into the encryption schemes for, say,
23 Netflix? In other words, if I circumvent my smart
24 TV, is there a way then for me to hack into one of
25 the third-party applications that is supplying

1 content?

2 MR. WILLIAMSON: I will say that there is
3 no evidence in the record as far as I have seen that
4 that risk is increased by allowing jailbreaking of
5 the TPMs on the device software and operating
6 system.

7 I would also point out that all of these
8 providers, Netflix, Hulu, Amazon, also provide
9 streaming applications, streaming content on home
10 computers, usually through browser applications, but
11 that essentially work the same way and that
12 essentially provide their own handling of encrypted
13 streams.

14 Those devices, of course, are unlocked by
15 default. And so it would not expose that content to
16 any greater risk than exists on platforms where
17 those providers are already providing their
18 applications and their content.

19 MS. CHARLESWORTH: So are you saying it
20 just completely -- that there is no relationship,
21 whatsoever, between the TPMs on that system that
22 protects the smart TV generally and the delivery of
23 content into that television? You know, in other
24 words, are they just completely unrelated systems or
25 is there any technical relationship?

1 Forgive me for asking sort of probably a
2 stupid question to anyone who is this
3 technologically sophisticated, but sometimes those
4 systems theoretically, they could be interconnected
5 in some way, and so once you hack into the TV, it
6 might be easier to steal Hulu. That is the concern,
7 right?

8 If you could help me out here, that would
9 be good.

10 MR. WILLIAMSON: The only reason I
11 hesitate is you are sort of asking me to argue
12 against myself, but I will take a crack at it.

13 To the extent that jailbreaking the
14 device, itself, enables you to put new software on
15 the device, if it was possible for some
16 user-supplied software to decrypt those streams from
17 Hulu or whatever in realtime, then yes, it would be
18 possible then that it would -- it would be possible
19 that the jailbroken device would make it easier to
20 infringe that content than the non-jailbroken
21 device, but I have two points to make about that.

22 One is that if that was possible, it's
23 just as possible on a home computer where this
24 content is already being provided and I don't think
25 we see widespread infringement of streaming content

1 from Hulu or Netflix on home computers. Certainly,
2 we see no evidence of that in the record.

3 Second, decryption, especially realtime
4 decryption of streaming content, is not a
5 computationally inexpensive task.

6 The computers within smart TVs tend to be
7 relatively underpowered. They're designed for the
8 very specific purpose that they're serving. They
9 are sort of low powered computers that typically
10 wouldn't have the sort of general processing power
11 of a home computer.

12 So I think that it's unlikely that you
13 would be better off if you were someone intending to
14 exploit or circumvent a TPM on the device software
15 for the purposes of piracy, that you would be better
16 off doing that on your television than you would on
17 your home computer.

18 MR. DAMLE: So just to make this clear,
19 but you are saying that circumventing the TPM on the
20 television software does not weaken or affect --
21 doesn't weaken the TPM that is separately on
22 Netflix; is that right?

23 MR. WILLIAMSON: Yes, that is my belief.

24 MR. DAMLE: And it would require the
25 person who has jailbroken the smart TV to install an

1 additional piece of software that would do the work
2 of actually decrypting the stream from Netflix.

3 MR. WILLIAMSON: Correct.

4 MR. DAMLE: And that same piece of
5 software could also be installed on a PC without
6 having to jailbreak anything.

7 MR. WILLIAMSON: Correct.

8 And also, that person would be outside of
9 the scope of this exemption, which is the purpose of
10 this.

11 MS. CHARLESWORTH: Did you have anything
12 else, Mr. Williamson, before we move onto Ms. Gellis
13 in terms of your opening thoughts?

14 MR. WILLIAMSON: I did want to highlight
15 that these TVs -- and I don't think that -- I'm not
16 intending to put this forth as a limiting factor,
17 but these televisions are built on freedom of source
18 operating systems, software that is licensed by its
19 developers explicitly to give users -- anyone who
20 chooses to exercise them the rights to copy, modify
21 and share the software.

22 These are the rights that permit TV
23 manufacturers to build their televisions on this
24 software, but these rights explicitly extend to the
25 TV owners, as well. In fact, the TV manufacturers

1 are required by the license of the software to
2 provide notice to the TV owners that they have use
3 rights under the license.

4 And so this exemption would give effect to
5 the intent of the copyright holder whose software is
6 embedded on these TVs already. And I think that is
7 a powerful argument.

8 MS. CHARLESWORTH: So here is a question I
9 have.

10 What do people want to do when they
11 circumvent the smart TVs? What is it they want to
12 install? And can you give specific instances of
13 things that people want to do that they could not do
14 because of the prohibition in 1201.

15 MR. WILLIAMSON: Absolutely.

16 I think what I have seen is that most
17 people who are currently sort of hacking their TVs
18 are doing so to make it operate more like the
19 computer that it is. It's a special-purpose
20 computer that the manufacturers have sort of locked
21 down certain characteristics of it, but they have
22 installed software that makes it easier for that
23 TV -- the TV computer to operate on their home
24 network so they can access it from their laptop.
25 They can sort of move -- they can operate it from

1 their laptop. There are programs for essentially
2 remote control from a laptop.

3 There are also several sort of
4 applications that people have devised to sort of
5 make the TV do things that it didn't previously do.

6 I talked in our comments about sort of
7 almost trivial applications to increase the text
8 size or display channel content where it didn't
9 before, because some of these, like increasing the
10 text size, are useful as sort of accessibility aids
11 and there is certainly -- and Jay Freeman's comments
12 with regard to tablets, not exactly the same use
13 case, talked about others where a smartphone, for
14 example, would tell a blind user when the screen had
15 shut down so that they could wake it back up, not go
16 unnecessarily fishing with it.

17 And so I think accessing media on external
18 devices is one thing that users want to do, using
19 the TV as sort of a remote monitor for their
20 computer. There are all sorts of things.

21 I think that ultimately what I see
22 happening with televisions is the same thing that we
23 have seen on other devices that have been readily
24 sort of hackable, routers, phones and tablets, for
25 example. People have created entire new

1 alternative operating systems for those devices.

2 And this started to happen in the sort of
3 open LG TV community where developers have installed
4 almost an entire alternative operating system
5 alongside the manufacturer's operating system. And
6 it just opens up the functionality of the TV to more
7 uses. And eventually, I think it creates a market
8 for alternative operating systems based entirely on
9 open source software.

10 MR. DAMLE: In the reply comments, we got
11 a comment from LG. I wonder if you wanted to
12 address any of the points that they made.

13 In particular, I think they mentioned the
14 fact that -- they mentioned something about the
15 television -- if you jailbreak the television, it
16 can be used to access other users' televisions. I
17 don't know what they meant by that.

18 And then also, they pointed to the fact
19 that they have a sort of SDK to allow developers to
20 build applications for the LG TV.

21 And so if you just address those points in
22 particular or anything else you want to address in
23 those comments.

24 MR. WILLIAMSON: Sorry. The two points
25 were they have an open SDK --

1 MR. DAMLE: They have an open SDK, and,
2 also, this point that they make about security,
3 privacy and it prevents the TV from being used in a
4 malicious way to attack other users. I wasn't
5 totally clear on what their point was.

6 MR. WILLIAMSON: I think what I understood
7 the point they were making there was that if a user
8 circumvents the TPMs that are -- as they said, to
9 some extent these TPMs are primarily designed for
10 systems security. So to prevent unauthorized
11 software from being installed inadvertently or
12 against the user's wishes.

13 So I think that what they were imagining
14 the circumvention technique to be was defeating the
15 sort of firmware checking that exists on the
16 television.

17 So when you, for example, go to supply
18 your television with a firmware upgrade, it might be
19 encrypted according to some scheme devised by the
20 manufacturer.

21 I think that what they were imagining it
22 was, we were defeating that checking mechanism on
23 the television, itself. And as I understand the
24 circumventions that are commonly used for these
25 devices, that is not actually what is happening.

1 What is happening is that developers are
2 essentially reverse engineering the encryption
3 scheme, itself, so they can produce firmware updates
4 that comply with the encryption scheme and are
5 accepted by the checking software system on the
6 television.

7 Now, that means that when the user
8 intentionally wants to sort of trick that mechanism,
9 they can do that, but it wouldn't make the TV more
10 susceptible to third-party malware being installed
11 on the television because that check is still in
12 place.

13 So I think that they were targeting a
14 circumvention that is not commonly in use, if it's
15 in use at all.

16 Now, there is an argument from
17 manufacturers here and in every other unlocking
18 exemption that the security of the device will be
19 degraded because a jailbroken device will stop
20 receiving authorized updates from the manufacturer.
21 That may be true in some cases. I think it's
22 probably not true in every case or for every
23 circumvention. We don't -- there has been no
24 evidence or specifics supplied by the manufacturer
25 on that point.

1 However, I think that argument is a little
2 bit disingenuous, in part because the sort of
3 product life cycle on these televisions is so very
4 short. Televisions are coming out every year and
5 the older televisions, from what I have seen, do not
6 continue to receive upgrades and support security
7 updates for a very long period of time after they're
8 first released.

9 So if manufacturers were supporting these
10 televisions for years on end and providing security
11 updates that prevented users from -- users' TVs
12 from being hacked, then that argument might carry a
13 little more weight, although still, I think it's up
14 to the user. The user is making an active choice to
15 stop receiving those updates in order to have access
16 to more functionality on the television.

17 So for an individual user, I really think
18 the manufacturer should say you absolve us of
19 liability if you do this, but otherwise, there is no
20 harm posed to the manufacturer if the user then gets
21 malware. The user made that choice, but I don't
22 think that these TVs are updated so frequently or
23 for such a long period by the manufacturers that
24 they really are kept much safer by keeping them in
25 the stock configuration.

1 MS. CHENEY: Mr. Williamson, LG contended
2 that they have plenty of accessibility features
3 available.

4 Can you tell us what kinds of
5 accessibility features aren't available that they
6 would need to access or to adjust for certain
7 disabilities and would like to use their smart
8 television but they can't view things or hear things
9 as they would like?

10 MR. WILLIAMSON: I am happy to speak to
11 that. I am not -- this is not primarily an
12 exemption targeted to accessibility, although we
13 mentioned it in our comments. And I don't know -- I
14 haven't studied specifically what accessibility
15 features are lacking on LG's televisions, but
16 examples that I raised in the comments were taken
17 primarily from efforts related to Samsung
18 televisions. And some of them were for earlier
19 models of Samsung smart televisions.

20 So, for example, there was no way on those
21 televisions for a user to increase the size of the
22 subtitles or the closed captioning. There was also
23 an application that allowed you to change the color
24 to make it more readily visible.

25 I think that it's laudable that LG and

1 other manufacturers make efforts to address
2 accessibility concerns. I think that it's -- I also
3 think that it should be the option of a disabled
4 person who finds that the TV that they own does not
5 meet their needs, I think that they should have the
6 right unquestionably to adapt the TV if they are
7 able or to work with someone to do that so that it
8 does meet their needs.

9 MR. DAMLE: You were going to address the
10 open SDK on LG.

11 Is that something -- first of all, what
12 does it do and is that something only available on
13 LG -- certain LG TVs? Do other smart TVs have
14 some other SDKs?

15 MR. WILLIAMSON: An SDK is a software
16 development kit that will typically be used by an
17 application developer to develop applications
18 targeted to a particular inventor's architecture or
19 television. So it makes it possible to use, for
20 example, the graphical user interface libraries
21 provided by that television, et cetera.

22 I think that it's great that LG's open
23 source -- this is software that doesn't run on the
24 television, by the way. It's software that you
25 would use as a developer on your development machine

1 in order to develop software for the television.

2 It's great that it's open source. That is
3 certainly something that my client is in favor of,
4 but it doesn't necessarily -- so first of all, it
5 doesn't at all address the TV owner's access to the
6 software that already exists on the TV.

7 It does allow developers to compile
8 applications that can be run on a TV now and that
9 they -- I think they said in their comments that LG,
10 in particular, make it possible or makes it
11 relatively easy for users to run their own
12 applications on their own TVs. I haven't tested
13 that. I don't own an LG TV.

14 I don't think it's true across
15 manufacturers -- certainly every manufacturer of a
16 smart TV would provide some kind of STK to some
17 class of users. Whether they provided those only to
18 other specific vendors probably varies by
19 manufacturer. And then whether their sort of
20 software distribution channel will allow users to
21 supply their own software, et cetera, probably
22 varies by manufacturer, as well.

23 What these things don't address, I think,
24 is the ability of users to gain access to lower
25 level functionality on the television.

1 So the SDK will allow you to access
2 functionality that the TV manufacturer has
3 specifically made available through the SDK, but it
4 won't necessarily allow you to, say, produce new
5 operating system software or software that accesses
6 aspects of the TV's functionality or hardware that
7 they haven't chosen to make available.

8 MR. DAMLE: When you say low level, you
9 mean accessing the actual guts of the TV directly,
10 the actual chips, the actual hard drives, whatever.

11 MR. WILLIAMSON: Probably a little higher
12 level than that.

13 So, for example, as I said before, a lot
14 of people who modify their TVs choose to install
15 software that will make new network ports available
16 so they can just, you know, use a network shell
17 program on their laptop in order to access the
18 television. And so that sort of thing is probably
19 not the kind of functionality that is enabled by an
20 SDK.

21 MS. CHARLESWORTH: Thank you.

22 Ms. Gellis.

23 MS. GELLIS: I'm here in part to be a
24 second voice echoing what Mr. Williamson has said,
25 but I also want to continue the story I started

1 telling yesterday which is to talk about the optics
2 as they apply to these Classes 11 through 27. And
3 that is to emphasize that the class proposed here is
4 yet another class involving a computer.

5 In this case, the computer is TV-shaped
6 but no less a computer than the type of computers
7 Congress understood were computers when it passed
8 the DMCA back in 1998.

9 There are several reasons why this matters.
10 One I suggested before is that the DMCA is not the
11 only law that now addresses computing, particularly
12 with regard to some of the negative consequences
13 opponents worry about, for instance, that somebody
14 might spread viruses or malware. We have other laws
15 and regulations that deal with those sorts of harms.

16 It's important to remember that this
17 petition is not asking for permission to perform
18 that sort of conduct. Instead, this exemption only
19 addresses what people can do with their own
20 computers, computers that in this case happen to
21 come in the shape of a TV.

22 Furthermore, none of the possible harms
23 that opponents worry about are the sorts of harms
24 that 1201 is intended to remediate. The exemption
25 doesn't seek to bypass the TPM in a way that affects

1 the copyright interest of the software -- the
2 exemption doesn't seek to bypass the TPM in a way
3 that affects the copyright interest of the medium
4 that gets justified by this TV. Mr. Williamson
5 talked about that in some detail.

6 We also had comments yesterday about how
7 there are TPMs within TPMs that the media, the
8 programming, may have its own TPM that this
9 exemption doesn't reach bypassing that TPM.

10 This is only about the TPM that gives you
11 the access to the software that runs the physical
12 hardware that is in your house's television.

13 This is particularly important to be able
14 to have the sort of control over this device
15 because the smarter TVs get and the more they can
16 do, the more they can do that the owner might not
17 want them to do.

18 For instance, in the pre-digital days, we
19 never had to worry about the little black and white
20 TV sets with rabbit ears telling anybody what you
21 watched unless you happened to be a Nielsen family.

22 Now, that we're dealing with smart TVs,
23 we are running into issues where sometimes these
24 televisions are reporting back to a mother ship
25 about what you are watching. And even there has

1 been -- I believe there is some evidence in the
2 record about these televisions perhaps eavesdropping
3 on things going on in the home and reporting back to
4 the mother ship what that was.

5 So that may be something that --

6 MR. DAMLE: When you say "eavesdropping,"
7 are you saying that -- are you referring to the fact
8 that some of these TVs have cameras and microphones
9 that --

10 MS. GELLIS: Yeah, and that the user
11 should be able to be the operating control of
12 whether those devices are live and recording
13 anything and sending it to any particular
14 destination.

15 And in order for the user to have that
16 sort of control, they may need to have access to the
17 software that is making those decisions. They need
18 to be able to control the software that is
19 controlling access to that sort of hardware.

20 MS. CHARLESWORTH: Do you think there
21 could be a reverse problem here where let's say
22 you're living with someone who circumvented your
23 television to eavesdrop on you? In other words, I
24 mean that is a significant concern, right, the
25 privacy issue. And I am just wondering -- maybe

1 Mr. Williamson has some thoughts on this -- like
2 have there been actual -- I mean I saw some of the
3 allusions in the record, but I mean is this really
4 happening or are there documented instances?

5 And also, do you think there is any
6 concern that other members of the household -- you
7 know, different members of the household may do
8 things that would violate or at least be
9 inappropriate in relation to the people they are
10 living with?

11 MS. GELLIS: There is always the risk that
12 anybody could have any sort of electronic device
13 that could do any of these things.

14 One of the points that I have been making
15 with regard to these classes is it's not that you
16 are being asked to bless those sorts of activities.
17 There is other law that can fill in and address
18 that. There are eavesdropping laws that vary state
19 to state and we have the Federal Wiretap Act.

20 Deploying your technology to eavesdrop on
21 a person where the lawmakers would not allow you to
22 is not something that this exemption would allow.

23 MS. CHARLESWORTH: But the argument is
24 that if you come out with a law that you can
25 circumvent your TV to do things, it kind of gives an

1 imprimatur of okay-ness to it, right, in other words
2 that it -- I mean I am not saying I necessarily
3 agree with or accept this argument, but we heard
4 this a little bit in the last class, that when you
5 say it's okay to circumvent your television, then
6 people consider that and may not be thinking about
7 other laws and do stuff.

8 I mean it's just a question that I guess
9 is maybe perhaps a little philosophical, but if you
10 say this is okay, is it possible people would do
11 this for malicious purposes, because that wasn't a
12 concern actually raised in some of the files in this
13 class.

14 MS. GELLIS: Well, I think no more than a
15 home PC or technology that people already have that
16 isn't before this office to consider exemptions for
17 could potentially do this.

18 We're talking about people having access
19 to the tools they own, to use the tools how they
20 choose.

21 We always have a scenario where people can
22 choose to use tools in ways that are illegal, but
23 that doesn't impugn the entire tool, itself.

24 This can be used for positive purposes,
25 but right now, the way 1201 acts, we have precluded

1 all positive outcomes because we are worried about
2 the negative outcomes, which is why I think it's
3 important to address the core copyright concerns
4 that 1201 is intended to address. And that is the
5 framework by which any permission or blessing would
6 happen.

7 That is to say that the copyrighted work at
8 question is the software that operates the hardware
9 and that there is no risk to that copyright interest
10 if we let people violate the TPM that gives them
11 access to that particular copyrighted work.

12 I think if we keep to that rubric, people
13 will do what people will do, but I don't think there
14 is the danger of us inadvertently sanctioning
15 anything beyond what this office and the Library of
16 Congress can actually do.

17 MR. WILLIAMSON: I have some thoughts.

18 MS. CHARLESWORTH: I am just curious. I
19 mean it's an interesting question whether TVs can
20 be used in that way. And I mean I am not -- whether
21 it impacts on this is another question, but do you
22 have anything you would like to share on that?

23 MR. WILLIAMSON: Absolutely. The answer
24 is yes, that TVs with a microphone and a camera
25 could be used for this purpose.

1 There was some outcry not too long ago
2 when people sort of heard about a future of Samsung
3 televisions, a voice control feature, and when
4 people started reporting on this, technologically
5 savvy people said well, the only way this feature
6 could possibly work is if Samsung is transmitting
7 your voice back to a server somewhere, processing
8 it, learning what you said and then telling your TV
9 to perform some kind of function.

10 And people were saying oh, wow, so I'm
11 walking around my living room and my Samsung
12 television is just listening to me and reporting
13 back to Samsung.

14 Now, it turns out, at least according to
15 Samsung's PR response, that you need to, I think,
16 press a button to enable the voice recording for
17 that particular feature, but it's certainly
18 possible -- I mean as far as I know, you could use
19 LG's SDK to develop an application and install it
20 without circumventing any TPMs that would turn on
21 and use the camera and microphone silently in the
22 background on your television.

23 As far as I know, you could on a
24 non-jailbroken iPhone create an application that did
25 that -- buy a \$99 developer certificate and install

1 it on the phone or on your spouse's phone, for
2 example. So it is certainly possible.

3 I think that that kind of concern needs to
4 be balanced against the general security concern,
5 which is that by and large, these computing devices
6 are not very secure. Security has been a focus for
7 Apple and Google in producing their smartphone
8 operating systems, but there are constantly
9 vulnerabilities, like serious vulnerabilities,
10 discovered and exploited and patched. And they have
11 sort of the best people in the industry working on
12 this.

13 I am fairly certain -- and I don't mean to
14 disparage the manufacturers -- but I am fairly
15 certain that Samsung and LG do not have the best
16 security persons in the industry working on these
17 TVs because it has not yet come to the attention of
18 the public in the same way it has for phones, for
19 example.

20 But if I am able to circumvent the TPMs
21 on my TV and install an open source operating
22 system -- sorry, for my client's sake, I will say
23 Freedom Software Operating System -- that, for
24 example, is based on one of the existing operating
25 systems that can automatically update when new

1 security releases are made from a sort of existing,
2 well-established structure of ongoing development,
3 then there is good reason to believe that my
4 television is going to be more secure than one
5 produced by Samsung or LG and then abandoned to the
6 product life cycle two years later, and that I would
7 therefore be more secure in that context against
8 attacks from, for example, remote attackers who get
9 into my TV through the network and then exploit some
10 vulnerability in order to access these lower level
11 features through a security vulnerability introduced
12 by the manufacturer.

13 MS. CHARLESWORTH: Thank you.

14 Ms. Gellis, did you want to conclude your
15 remarks?

16 MS. GELLIS: I just had one other point to
17 conclude with.

18 One of the other themes in my comments
19 throughout those classes is the other regulations
20 that govern technology can be a friend to this
21 office if there is concern about some of these
22 other outcomes, but one thing that they can't do
23 very well, which 1201 can do, is because they're not
24 copyright statutes, they're not well tailored to
25 encourage innovation, whereas we are looking at the

1 copyright statute which is inherently designed to
2 incentivize innovation.

3 And in this case, if we look at the
4 scenario I think Mr. Williamson described of if the
5 law can stay in place and the manufacturers can
6 essentially become complacent about nobody else can
7 mess with it, so we got it covered and so whatever
8 world we create and that is it, they don't
9 necessarily have the incentive to develop whatever
10 fixes would adequately address security concerns or
11 innovations that make things interesting and
12 exciting anyway.

13 By allowing people to interact with their
14 own technology, we are encouraging the type of
15 development of knowledge that this Copyright Act is
16 supposed to do.

17 And I think that is something that to the
18 extent that the Copyright Office does get to bless
19 things, I think that is actually important and
20 consistent with its overall mission.

21 MS. CHARLESWORTH: Thank you.

22 Mr. Williams.

23 MR. WILLIAMS: Thank you for having me
24 here on behalf of MPAA, RIAA, ESA. And we have a
25 Williamson and a Williams. Just for the record, I

1 am Matt Williams.

2 So we oppose this exemption because
3 hacking the smart TV enables infringement on an
4 entertainment hub that is really designed for
5 consuming entertainment on your television rather
6 than serving as a multi-purpose device.

7 It's an innovative platform developing at
8 a rapid pace. We don't want that to be disrupted by
9 efforts to twist it into something it is not
10 supposed to be.

11 I think there are more distinctions here
12 than similarities to other contexts where you have
13 granted exemptions in the past.

14 I just want to highlight a couple of ways
15 that this exemption could lead to piracy.

16 The first is it enables infringers to
17 install illegal applications such as Popcorn Time
18 onto their televisions and that that application has
19 been referred to in the press as "Netflix for
20 pirates."

21 MS. CHARLESWORTH: Can that also be
22 installed on a PC?

23 MR. WILLIAMS: It can. I am going to
24 address that in a minute. I can talk to it now if
25 you would like me to.

1 It's true that you can do that on a PC,
2 but the importance of having TPMs on entertainment
3 hubs like a smart TV is people want to access
4 content on that platform. They don't want to
5 necessarily plug their laptop in order to engage in
6 piracy on the TV, which is the center for
7 entertainment in the home.

8 So these TPMs on smart TVs actually do
9 serve a copyrighted purpose because they make it
10 more difficult for people to engage in piracy in a
11 place where they would want to engage in piracy.
12 And you can never prevent piracy in all forms on all
13 platforms. It's not possible, but it is important
14 that in the one place where everybody goes to sit in
15 the living room and watch television, if you can put
16 TPMs in place to prevent it in that context, that
17 is very valuable to my clients.

18 So just a very brief description of
19 Popcorn Time so I give you an idea of what it is,
20 because you were talking about can someone get
21 illegal access to Netflix. And I will speak to that
22 in a second, but this is something distinct. It's
23 installing a competing illegal application onto the
24 television. So you are not gaining access to
25 Netflix or Hulu, but you are gaining what the press

1 has described as an equivalent or something that
2 actually gives you the current, in-theater films
3 that are available online through torrents to stream
4 them down to your television.

5 So putting something like that on a TV, of
6 course, would be very damaging to the motion picture
7 industry.

8 That application in particular, a UK court
9 recently said it has no legitimate purpose at all,
10 that the entire point of it is to infringe
11 copyrights.

12 And if you look on their website, they say
13 that Popcorn Time is the result of many developers
14 and designers putting a bunch of APIs together to
15 make the experience of watching torrent movies as
16 simple as possible.

17 And the "as simple as possible" part is we
18 would like to avoid by keeping TPMs in place. We
19 don't want it to be as simple as possible, of
20 course, to find movies on torrent. We want people
21 to be using the installed applications on their
22 smart TVs to get legitimate access to that type of
23 content.

24 They say pretty brazenly that they will
25 give you the latest movies, that they take these

1 movies from other places like YTS and Easy TV, places
2 that have, if you go to their websites, long lists
3 and catalogs of currently running TV shows currently
4 in theaters, films. "Ex Machina," which is
5 currently in theaters, was listed when I went there.

6 And so even if there are some separate
7 TPMs that in theory protect a Netflix or a Hulu or
8 a downloaded copy from Vudu that is resident on the
9 TV, this is still a real threat regardless of that.

10 And to the second point, is this a danger
11 to these other methods of gaining lawful access.
12 And LG's comments -- they know their TVs a lot
13 better than I do; I am not a computer engineer --
14 but they do say in those comments that it would be
15 possible for someone, a bad actor who could find a
16 hacked TV, to access content resident on the TV and
17 remove that content from the TV.

18 So there may be instances where these
19 secondary TPMs from the primary content provider
20 are not successful in preventing that type of
21 piracy, as well.

22 MR. DAMLE: Do you agree with what
23 Mr. Williamson in describing the sort of TPM within
24 a TPM sort of said, that there is no real connection
25 as a technical matter between the TPM on the

1 operating system software of the television and the
2 TPM that Netflix puts onto its ap, its smart TV ap?

3 So do you agree with his description?

4 MR. WILLIAMS: I'm not sure I entirely
5 agree. And unfortunately, I am not really prepared
6 to speak to exactly how the technology works, but I
7 do know that my clients view them as interrelated in
8 the sense that it's another layer of protection for
9 their content.

10 So when people are considering am I going
11 to license a service that is going to be installed
12 on a smart TV, both of those types of TPMs are
13 considered during that process.

14 So I do think it's probably accurate but I
15 can't really say this because I don't know. It's
16 probably accurate that there are multiple TPMs
17 involved when you are talking about opening up the
18 operating system of the TV or versus the individual
19 pieces of content that might reside for the lawful
20 provider. I don't know that that is always true.

21 And I would also state if, for example,
22 someone had managed to get a piece of content in the
23 clear through circumvention and something else and
24 it was sitting there resident, there would no longer
25 be two layers of protection in that event. I think

1 there would only be one layer of protection.

2 MS. CHARLESWORTH: You talked about the
3 fact of Popcorn Time or similar illegal ap being
4 installed in the television.

5 Is there any specific evidence of that
6 sort of activity that you can point to for the
7 record, in other words, people hacking TVs to
8 install pirate aps?

9 MR. WILLIAMS: Sure.

10 We do have in the record -- and I have to
11 flip through the exhibits to give you the exhibit
12 numbers -- we have in the record articles about
13 Popcorn Time that describe to you what it does. I
14 don't know any of them specifically talk about
15 hacking a TV in order to accomplish that, but as I
16 understand it from the manufacturers, you can't
17 install that on the TV unless you hack it because
18 their quality control process is not just about
19 protecting privacy and protecting the functionality
20 of the system, although those are important aspects.

21 A portion of their process is about
22 copyright protection. And they won't let you -- if
23 you apply to put Popcorn Time as an ap on their
24 TVs, they won't let you do it because it's an
25 illegal application.

1 MS. CHARLESWORTH: Do the motion picture
2 studios work with the television manufacturers like
3 in this area in terms of security as a general
4 matter? And is there a relationship there in terms
5 of between the two industries in terms of protecting
6 content?

7 MR. WILLIAMS: Yes, my understanding is
8 there is, and I can't speak to each and every studio
9 or content provider, but I know there are
10 relationships. There are conversations about
11 security, certainly.

12 Just to return quickly to a couple of
13 points, one of the proponents, the Exploiteers in
14 their reply said that smart TVs don't have the
15 necessary storage and processing power to run
16 software like Popcorn Time. I am not sure where
17 they got that information, and like I said, I am not
18 an engineer, but my understanding based on talking
19 to the manufacturers is you can install something
20 like Popcorn Time on a TV. It's capable of running
21 it. It's just that they wouldn't allow it unless
22 it's hacked.

23 And they can access streaming 4K. So I
24 find it hard to believe they can't run something
25 like Popcorn Time.

1 Also, as you noted, LG allows independent
2 developers to make applications for their
3 televisions and then they go through the UC process.
4 And so there is an alternative for that type of
5 activity.

6 If they're not at the end of the day doing
7 something illegal and if they create a product that
8 interoperates well with the TV, they can get onto
9 the TV.

10 As you noted, the privacy concerns go both
11 ways here. In LG's comments, they certainly seem to
12 say that it's a much larger threat to have a hacked
13 TV in terms of your privacy at home than to have a
14 TV that is functioning properly.

15 So then just in sum, I think I would just
16 like to focus again that these TPMs are not just
17 about a business interest.

18 Sometimes the Copyright Office tries to
19 distinguish between business interests and copyright
20 interests, but here I think there is a very clear
21 copyright interest that these TPMs are protecting.
22 So that's why we are really asking you to deny this
23 proposal.

24 And I would be happy to answer any
25 questions that you have.

1 I would say there is no proposed language
2 in the record on this from the proponents that they
3 are actually specifically asking the exemption to
4 say. So I would love to hear more about that
5 because it's hard to kind of argue with something
6 that is not actually there.

7 And that is my final point.

8 MS. CHARLESWORTH: I mean just for the
9 record, I mean I think that the class was in our
10 notice. So at least in our thinking, that is the
11 proposal we're considering, so.

12 MR. DAMLE: I can read it. It's allow
13 owners of computer-embedded televisions, smart TVs,
14 to circumvent firmware encryption and administrative
15 access controls that control access to the TV's
16 operating systems for the purpose of accessing
17 lawfully acquired media, installing licensed
18 applications and making for interoperability of
19 external devices.

20 MR. WILLIAMS: I was unclear if the
21 language in the PRN would actually be the final --

22 MR. DAMLE: I think it was more of a
23 description of what the exception would cover rather
24 than specific regulatory language. That is sort of
25 what we decided this time around.

1 MS. CHARLESWORTH: We decided to take a
2 more functional approach rather than fighting over
3 words at the beginning to focus on what it is people
4 are trying to do, but we did try to craft the
5 descriptions in the notice to carefully reflect what
6 we thought people were seeking and to be fairly
7 all-encompassing of all the permutations, because as
8 you know, many times we get multiple proposals.

9 So we thought this would be more
10 efficient, actually, to have a conversation about
11 the actual substance of the proposal rather than
12 getting into the fine tuning at the outset.

13 MR. WILLIAMS: Thank you for clarifying
14 that.

15 We are still feeling our way through as
16 things evolve a little bit. So it's helpful to know
17 that. We always said it would be best to have the
18 actual proposed language in front of us at some
19 point in the process. I know timing-wise, that is
20 difficult to achieve, but whenever that is possible,
21 we would love to comment on that language.

22 MS. CHARLESWORTH: Mr. Williamson, can you
23 install Popcorn Time on a hacked TV?

24 MR. WILLIAMSON: That is a good question.

25 MS. CHARLESWORTH: As we know those TVs

1 today. Obviously, they could change in the future.

2 MR. WILLIAMS: So I think that it is
3 probably possible to.

4 So in order to install Popcorn Time on a
5 television, you would have to first compile it for
6 that television's architecture. And I suspect at
7 this time, the Popcorn developers have not created a
8 build process that would allow you to do that. It
9 requires a substantial amount of work.

10 Now, obviously, if people really wanted to
11 do that, if there was a good reason, there was a lot
12 of demand for that, somebody would put that effort
13 in.

14 MR. DAMLE: How many different types of
15 architecture are out there? Does each manufacturer
16 have sort of an architecture, something compiled for
17 LG TV to run an LG TV, something for Samsung to
18 operate a Samsung TV, or is it more finely built
19 than that?

20 MR. WILLIAMSON: It's more finely
21 separated.

22 I don't have a very clear picture
23 specifically with regard to TVs. Most of these TVs
24 are built on a system board purchased from a vendor
25 like Broadcom, for example. And Broadcom would have

1 a particular architecture built on usually a chip,
2 an ARM chip, an arm sort of architecture. ARM has
3 various architectures.

4 And so older generations -- newer
5 generations of televisions are more likely to share
6 an architecture than would older versions,
7 regardless of whether it was cross-manufactured or
8 not, but you would most likely -- or I think
9 definitely you still need to be building for the
10 specific software environment, as well as you would
11 have to know what existed on the thing that you were
12 building, et cetera, but suffice it to say, I guess
13 it's possible to put Popcorn Time and run Popcorn
14 Time on a television like this, but what I think the
15 Exploiteers were pointing out is that it's
16 computationally expensive to process the display
17 video.

18 Now, Mr. Williams pointed out that TVs
19 already can display streaming video. There may be
20 special purpose hardware in use for that purpose
21 that the software wouldn't -- Popcorn Time that was
22 installed on a TV like that wouldn't have access to.
23 I am not sure.

24 So I don't think we can take for granted
25 that it could run on one of these TVs in a way that

1 would provide useful video, but another really
2 important point to be made is that televisions
3 are -- and as Mr. Williams said here -- they are to
4 some extent special purpose hardware configurations.
5 They are both for streaming and content. They don't
6 have large amounts of disk storage or any disk
7 storage. They have only small amounts of sort of
8 random access memory in them.

9 And so the way Popcorn Time works is to go
10 onto the Internet, download an entire movie through
11 a torrent and store it and then play it back.

12 And so you would have to go through the
13 same inconvenience that Mr. Williams described
14 before of -- if you were to run it from your
15 computer, you would have to hook up your laptop, but
16 if you were to run it on your television, you would
17 have to hook up some kind of the external storage
18 for the movies to be downloaded somewhere so that
19 they could be played back on your TV.

20 MR. DAMLE: So it's your understanding,
21 although to the user it may seem like it's
22 streaming, but what is actually happening on the
23 back end on Popcorn Time is it collects all the
24 torrent bits and puts it together into a single file
25 and then plays it?

1 MR. WILLIAMSON: That's my understanding.

2 I don't think it's possible to stream from a
3 torrent.

4 MS. CHARLESWORTH: And I think I also
5 heard you suggesting that it would be much more
6 difficult to install Popcorn Time on a television
7 than it would be, say, on a PC.

8 Is that what you are saying?

9 MR. WILLIAMSON: Right.

10 Well, in order to install any software for
11 a particular hardware architecture, you have to
12 basically design a compilation process that targets
13 that architecture. So Popcorn Time, as I understand
14 it, was developed for the PC architecture at the
15 time. So they would have to -- and it's not a
16 trivial matter to design a compilation process for
17 another architecture. It's called
18 cross-compilation. You would be copying on one
19 architecture, the computer, for another
20 architecture, the television.

21 It's not -- it's certainly not impossible.
22 And I think, honestly, if there was -- people are
23 already circumventing access controls on their TVs
24 and installing new software.

25 And I think if somebody really wanted to

1 use Popcorn Time to pirate movies on their Samsung
2 televisions, they could go through the effort of
3 creating that compilation process.

4 I think the fact that nobody has, is maybe
5 an indication that it is not well suited to the
6 capabilities of a television.

7 MS. CHARLESWORTH: Well, thank you very
8 much.

9 Once again, this was interesting and we
10 really appreciate your expertise, Mr. Williamson.
11 It sounds like you know a great deal. It was
12 helpful to hear from you today, in particular.

13 We are going to break for lunch now. Our
14 next Class after lunch will be Class 23, called
15 "Abandoned Video Games" for short.

16 And we're scheduled to start that at 1:45.
17 I think that still works. So we will reconvene here
18 at 1:45 for Class 23. And enjoy your lunch.

19 (The proceeding was concluded at
20 12:30 p.m.)

21

22 MS. CHARLESWORTH: Good afternoon and
23 welcome to the Sixth Triennial 1201 Rulemaking
24 Proceeding.

25 I see some people have been here and some

1 new people as well. We are here this afternoon to
2 consider proposed Class 23, which is titled
3 "Abandoned software -- video games requiring server
4 communication."

5 And as I am sure you all know, we are
6 interested in hearing evidence and arguments both
7 for and against the proposed exemption to allow
8 circumvention of TPM's on video games to allow
9 communication with -- well, consisting of
10 communication with a developer operating server for
11 the purpose of either authentication or to enable
12 multiplayer matchmaking where developer support for
13 those server communications have ended.

14 And the shorthand term we are using for
15 that is basically "abandoned video games," although
16 I think from the paper, it's clear some people have
17 not abandoned them.

18 We have, I think, one presentation we will
19 be starting with.

20 Mr. Frankel, do you have a multimedia
21 presentation?

22 MR. FRANKEL: No, it's just a couple of
23 points that I think would belong more when I give my
24 statement. So it's just a couple of slides. It's
25 not a demonstration.

1 MS. CHARLESWORTH: Well, we can wait then
2 and just call you up in due course. Thank you.

3 So we are interested in hearing your
4 thoughts. As we said earlier, if you can try to
5 avoid speaking over each other, that would be
6 great. If you have something that you want to add
7 to the discussion, just tip your placard up and we
8 will try to call on you as quickly as we can.

9 The format we have been using -- and we
10 have a lot of people once again on this panel -- is
11 very briefly, if you can keep them brief opening
12 statements. We do sometimes interject questions
13 into your opening statement and then allow you to
14 continue on, but if we can kind of move through
15 quickly, and as you have done before, we are really
16 interested in the areas of contention or the areas
17 that aren't clear in the record.

18 So we have read your or written
19 comments carefully. So there is no point, really,
20 in repeating things that you have said in the
21 written comments, but we are much more interested in
22 hearing sort of your focused responses on some of
23 the issues raised by the other side.

24 So with that introduction, I guess we will
25 start with Mr. Diamante, and have you each just

1 before we start with the opening statements, each
2 identify yourself for the record and just explain
3 who you are representing here today.

4 MR. DIAMANTE: My name is Vincent Diamante
5 and I am here on behalf of the Museum of Art and
6 Digital Entertainment in Oakland. And I am an
7 educator and a professional game developer and I am
8 in support of this proposal.

9 MS. CHARLESWORTH: Ms. Albert.

10 MS. ALBERT: I am Kendra Albert. I am a law
11 student at Harvard Law School. I co-filed the
12 proposal with the Electronic Frontier Foundation.

13 MS. CHARLESWORTH: Ms. Gellis.

14 MS. GELLIS. I am Catherine Gellis. I am
15 a solo attorney. I am here on behalf of my Digital
16 Age Defense project.

17 MR. Stoltz: Mitch Stoltz. I am an attorney
18 with the Electronic Frontier Foundation. We're a
19 co-proponent of this class.

20 MR. GHOLAMI: I am Parham Gholami. I am
21 representing Azentium. I am a game developer.

22 MR. WILLIAMS: Matt Williams, again, for
23 MPAA, ESA, RIAA.

24 MR. FRANKEL: Simon Frankel, here for the
25 Entertainment Software Association.

1 MS. TONSAGER: Lindsey Tonsager, here for
2 the Entertainment Software Association.

3 MS. CHARLESWORTH: So Mr. Diamante, we are
4 now circling back to you for a brief opening
5 statement.

6 MR. DIAMANTE: I will try and make this
7 brief.

8 I am here as an educator as well as a
9 developer.

10 For the last seven years, I have taught at
11 USC's Interactive Media and Games Divisions, which
12 is the long-time number one school for video game
13 design in the world.

14 And the teaching of video games is perhaps
15 connected to computer science but not really the
16 same. It's not just disseminating technical stuff
17 but also building intimacy with games and game
18 design, the poetics of video games.

19 And in fostering students into the world
20 of video games, we see the importance of video game
21 history and comprehension in forming the voices that
22 our growing population desires and needs.

23 And in a world full of service-side
24 controls, not just in video games but everywhere
25 with calendars and thermostats in cars having

1 service-side controls, there is an ever growing fear
2 of permanently losing the things that we thought we
3 had a grasp on.

4 And the possibilities of the products that
5 these companies have very little attachment to or
6 decide that they have no attachment to any further,
7 shelving those products away from the people to whom
8 they once were had, games that do not occupy any
9 sort of inventory space, that don't require any more
10 retail infrastructure, that are easier to discard
11 than those ET cartridges lost in the desert back in
12 the 80's, games that have lost their capacity to
13 teach as a result of losing their ability to be
14 comprehended, analyzed, played by the next
15 generation of game designers.

16 But it's not just game designers that
17 learn from these games. It's all players. These
18 games actually teach much the same things that
19 novels and films and poetry do, the relationships
20 that people have with themselves, with nature and
21 with other men.

22 I am also a developer over at
23 thatgamecompany, which is a local video game
24 developer that has created some of the most
25 culturally and artistically relevant games in

1 history as voiced by critics, museums, players and
2 the ESA and industry members, as well.

3 Our three most recent games were published
4 by Sony for the PlayStation 3 console: Flow, Flower,
5 and Journey.

6 They have been curated in a number of
7 collections and installations.

8 Flow is a fixture of MoMA's applied design
9 collection.

10 Flower was recently selected to comprise
11 the start of the Smithsonian permanent collection of
12 video games, thanks in part to the support of ESA.

13 These two games question and reveal the
14 players' relationship with their own identity as
15 well as with nature.

16 Our most recent game, Journey, experienced
17 inarguably more critical and commercial success than
18 its predecessor, having players reconsider their
19 relationship with not just the game characters, but
20 the players that motivate the characters from the
21 other side of the network connection.

22 In light of current statutes, it is not so
23 surprising that despite the years it has been noted
24 for its artistic aspirations and merit, it has yet
25 to be collected by any museum.

1 How difficult would it be to do so, say,
2 mere decades in the future, where the Sony of then
3 is far different from the Sony of now?

4 And I say this not to put specific light
5 on Journey or that game company but to point to the
6 intents of games, themselves.

7 Journey is just one of many games that
8 uses an online server to authenticate and manage
9 multiplayer play.

10 If we are not able to have this exemption,
11 I fear we may inevitably lose all online games for
12 which the focus is exploring, revealing and
13 redefining our relationships with other people.

14 And I would like to leave you with a
15 specific player-game relationship: President Obama
16 and basketball. Many decades from now, I imagine
17 people will deeply analyze the connection between
18 U.S. foreign policy of the early 21st century and
19 basketball of the late 1990's. Why? Because
20 President Obama himself, looks at his role amongst
21 his cabinet as well as that of the U.S. in the
22 world as one of a wing player.

23 To a person with knowledge of the game of
24 basketball, not just surface understanding of rules
25 and procedures but experience with the play of the

1 game, that is rich information about the President's
2 decisions and aspirations, and in fact, the U.S.'s
3 decisions and aspirations.

4 For us and the generations to come,
5 increasingly molded, if not defined, by the games we
6 play, that tomorrow's world be able to learn as
7 much.

8 Thank you.

9 MS. CHARLESWORTH: Thank you. I guess I
10 was going to say "you're welcome," but thanks for a
11 very moving explanation of the cultural value of
12 video games.

13 I had a question for you in terms of the
14 games that have been collected. I think you said
15 the Smithsonian and MoMA, games that you were
16 involved in developing -- I mean was there
17 cooperation between the museum and the developer in
18 those cases to help install the game?

19 In other words, did the museum just pluck
20 a game from off the shelf and put it in the museum
21 or was there some cooperation with the developer so
22 that those games could be featured in those very
23 prestigious institutions?

24 MR. DIAMANTE: Yes, there was some
25 cooperation between the -- in the case of the

1 Smithsonian, we at thatgamecompany were involved as
2 well as Sony Santa Monica. Sony is our publisher
3 and thatgamecompany is the developer of Flower, the
4 game in the Smithsonian.

5 MS. CHARLESWORTH: And on the Journey
6 game, you said it hasn't been collected yet, but do
7 you have any sense -- has any museum or curator
8 approached -- I'm sorry -- is that Sony? Who is
9 your company? I didn't follow all of the
10 developers, but has the developer of that game been
11 approached by any collection or museum to include it
12 in the collection?

13 MR. DIAMANTE: Yes, thatgamecompany has
14 been approached. I believe Sony has also been
15 approached directly about the inclusion of Journey
16 as a fixture in an installation or other collection.
17 To my knowledge, that has not been the case, though.

18 MS. CHARLESWORTH: I mean is it your -- do
19 you have any -- do you know whether Sony or the
20 developer has said no or it just hasn't happened
21 yet?

22 MR. DIAMANTE: So as a developer, we no
23 longer have that sort of authority over the games
24 that we have developed. That is part of the
25 relationship that we had with Sony as a publisher.

1 So Sony -- it really is Sony's final say as to how
2 the game is actually used. And when we actually
3 entertain these E-mails or other communication, we
4 forward them to Sony.

5 MS. CHARLESWORTH: But you don't know one
6 way or the other whether Sony actually objected to
7 including the game in a museum or did they actually
8 say no?

9 MR. DIAMANTE: I cannot say for certain
10 whether they have explicitly stated no to any
11 forwarded communication.

12 MS. CHARLESWORTH: Thank you.

13 Ms. Albert.

14 MS. ALBERT: Hello. Good afternoon.

15 So I am both here with the EFF and in my
16 personal capacity, but I also am here as a gaming
17 enthusiast who has been playing online multiplayer
18 games since age eleven.

19 And I want to talk a little about the
20 prevalence of multiplayer and authentication server
21 shutdowns and the effects the shutdowns have on
22 communities, specifically. I leave the preservation
23 question to the my colleagues.

24 So our petition -- I am going to just talk
25 through a couple of examples that were in our

1 petition in a little more detail because I think
2 that will be helpful in illustrating the many
3 different types of issues that the exemption reaches.

4 The petition contained -- at least the
5 games that were deactivated in 2014, I think it's
6 over a hundred.

7 It's not that there aren't many, many more
8 games where the servers have been deactivated, but
9 rather making a comprehensive list, it was such a
10 daunting task that we weren't sure we were able
11 actual to complete it.

12 So the games that were deactivated in 2014
13 are just a small subset of many, many games that are
14 no longer playable unless communities are able to
15 resurrect the server or circumvent authentication
16 controls.

17 So in 2014, something very specific
18 happened that sort of changed the landscape in this
19 particular way, which is the shutdown of Gate Five,
20 which is a third party who ran multiplayer servers
21 for a lot of major game publishers.

22 So Gate Five controlled multiplayer servers
23 for many, many large franchises, including Borderlands.

24 For Arma 2, which has a really active
25 online community, this was really negatively affected

1 by this and for Nintendo.

2 So sometimes -- in the case of GameSpy,
3 sometimes the developers and publishers stepped up
4 and reactivated servers or came out with patches for
5 other options and sometimes they didn't.

6 And communities developed solutions that
7 would allow them to continue to play the games that
8 they lawfully owned. There is a long list of
9 communities that have worked on this project, on
10 that problem; some of them include
11 Battlefield 1942, Ghost Recon, Star Wars
12 Battlefront 1 and 2.

13 MS. CHARLESWORTH: Do you know why GameSpy
14 shut down?

15 MS. ALBERT: So they have been sold to, I
16 think, Glue Interactive. And I think they were no
17 longer making money. I believe it was a financial
18 concern, but I am not super familiar with their
19 internal politics.

20 So those are like some of the major
21 projects that were launched in 2014 after the
22 GameSpy shutdown. There are others that have been
23 going for longer and address other particular
24 issues.

25 One is the Save Metal Gear Online project

1 which we also talk a little bit about in our
2 petition. This is a group of independent developers
3 who loved the game Metal Gear Online 1 and Metal Gear
4 Online 2, which was also shut down, so much that
5 they spent over 90 hours reverse engineering the
6 server protocol just to be able to play it online
7 again.

8 So just because they did not have server
9 traffic logs for the first Metal Gear, what they had
10 to do was literally just sit there and send
11 different values to find out what the server
12 returned until they were ultimately successful.

13 And their community -- they have been
14 talking really publicly about how difficult this was
15 and how important this game was to them.

16 MR. DAMLE: Is that a console game?

17 MS. ALBERT: That is a console game.
18 I think Metal Gear Online is PS2 and then Metal Gear
19 Online 3 is PS3.

20 MR. DAMLE: Did that require jailbreaking
21 consoles?

22 MS. ALBERT: Metal Gear Online 1 on the
23 PS2 did not require jailbreaking consoles in order
24 to run the file to connect to the server.

25 MR. DAMLE: And then for Metal Gear

1 Online 2?

2 MS. ALBERT: I think it may have required
3 it.

4 So then the next game I want to talk about
5 is totally different. It's an arcade cabinet back
6 when you actually went to places to play games
7 rather than sitting on your couch.

8 And there are two different games,
9 Technika 2 and 3, both of which were deactivated by
10 their -- after their publisher got bought by another
11 company.

12 I have actually played Technika 2 in an
13 arcade running on a player server. It looked
14 fundamentally like just this normal -- you just
15 walked up and you put in your quarters. And for
16 some reason, it still uses quarters, but the
17 Technika 2 and Technika 3 are rhythms games,
18 somewhat like R4 DS Revolution or Guitar Hero. I
19 have never played anything else like them.

20 And the John Doe that provided testimony
21 about the process of creating the Technika 2 and 3
22 server said he had no games like those on the market
23 and so it was very important to him that he was able
24 to continue playing them.

25 The other thing about Technika 2 and 3 is

1 that these are literally little arcade cabinets.
2 That means that if John Doe hadn't been able to
3 provide alternate servers, arcades would literally
4 throw them out. They would go dark, sort of like
5 the plot of "Wreck-It Ralph." So that is another
6 example of the many, many different types of games
7 that are effected by this issue.

8 I just want to say a little about the
9 communities that grow up around these games and what
10 they mean to people, because I think it's often sort
11 of we hear a lot about copyright infringement or
12 piracy or people wanting to play games online for
13 free.

14 And I think I can speak for the folks who
15 I have talked to who say that they would gladly pay
16 huge amounts of money to be able to play these games
17 online again. Often, some of these folks have
18 actually sought to license the games from the
19 publisher or get a license in order to run the
20 server and been unable to.

21 So these are the folks that preorder the
22 games. These are the folks that are like building
23 up hype, the ones that line up outside the GameSpots
24 at midnight to try to buy the game as soon as
25 possible so they can get home and play.

1 And these people use game time to connect
2 socially, to explore and make the things the
3 publisher, the developer, could never imagine just
4 evolve.

5 So I think it's super important for these
6 communities, specifically, that the chilling effects
7 of DMCA 1201 and the potential of legal liability
8 not deter them from being able to run the servers.

9 MR. DAMLE: That's an interesting point.
10 Can you talk a little, to the extent you know, about
11 what happens when one of these -- when the communities
12 get built up around a certain game and then the
13 servers get shut down, what happens to these
14 communities? Are they able to reconnect? Do the
15 communities just sort of do they fade away?

16 I would be very curious to know whether
17 the communities are only in the game or is it do
18 they have sort of like other kinds of means of
19 connecting.

20 MS. ALBERT: So honestly, it depends. So
21 what often happens if there is an announced server
22 shutdown is that communities will start recording
23 traffic logs in order to potentially build up a
24 server. That's what happened in the case of when
25 GameSpy announced they were going to shut down the

1 servers, folks started taking action to create
2 alternative servers.

3 MR. DAMLE: But absent the ability to do
4 that.

5 MS. ALBERT: So often, gamers will just
6 disperse.

7 And one sort of thing that often sometimes
8 happens is that when companies shut down servers,
9 they will shut down without warning like forums or
10 other communication mechanisms that allowed people
11 to communicate about the game.

12 So if you just imagine that like you can
13 never find all the people who you were playing with
14 because the thing that connected you was the game or
15 often it was the server, but also the forums that
16 the game company made run.

17 So it can be really, really difficult to
18 sort of recreate it in any meaningful way. And the
19 longer it takes for someone to sort of get a server
20 set up or create an alternate site for
21 communication, I think the more players that they
22 lose.

23 MS. CHARLESWORTH: Can I ask a question.

24 Some of the comments suggested that you
25 might buy a game and then you can play the game, but

1 to access the multiplayer functionality or the
2 community functionality, that was sort of a separate
3 charge or a separate license from the publisher or
4 developer.

5 I mean it sounds like you are very
6 experienced in this world, but what is your
7 perception of that? Is that true a lot of the time?
8 What kinds of games fall into that category? What
9 kind of services fall into that category? And how
10 would you break out the market that way?

11 MS. ALBERT: So to my knowledge, the
12 online multiplayer -- sort of paying for online
13 multiplayer is only something that is relatively
14 recent on consoles. So I think it's the PS4 and the
15 Xbox One require a paid subscription in order to
16 play online multiplayer.

17 That has not been the case before on
18 previous consoles. That is not the case for the
19 current Nintendo console and definitely not the case
20 for PC.

21 One other thing I would say about that is
22 that there are some games where there is sort of an
23 ongoing subscription fee, but most games with online
24 multiplayer don't fall into that category.

25 So I think I'm saying that sort of the

1 broken out pay to play online is definitely the
2 exception and not the rule.

3 MS. CHARLESWORTH: Do you have anything
4 else to add?

5 MS. ALBERT: No. Thank you.

6 MS. CHARLESWORTH: Ms. Gellis.

7 MS. GELLIS: Thank you.

8 My concern here is similar to the concern
9 I have raised in other classes, that is, the class
10 involving the computing logic necessary to make a
11 computer function.

12 This is not a proposed exemption seeking
13 literal access to a copyrighted work for the sake of
14 simply having access to a copyrighted work as a
15 piece of content. The proposed exemption would only
16 apply to lawfully acquired works.

17 This exemption is simply about making the
18 work work.

19 Furthermore, if people legitimately have a
20 copy of the software and legitimately have computing
21 devices capable of being operated by the software
22 and the only reason these devices cannot be
23 controlled by the software is because of the TPM,
24 then the people should be able to bypass the TPM's
25 in order to be able to use the computing device as

1 they see fit.

2 MS. CHARLESWORTH: Thank you, Ms. Gellis.

3 Mr. Stoltz.

4 MR. Stoltz: With the panel's permission, I
5 will be like have Mr. Gholami go before me.

6 MS. CHARLESWORTH: Sure. Mr. Gholami, you
7 represent?

8 MR. GHOLAMI: Azentium.

9 MS. CHARLESWORTH: Azentium. Okay.
10 Are you working with Mr. Stoltz then?

11 MR. GHOLAMI: No.

12 MS. CHARLESWORTH: We're just going out of
13 order.

14 MR. GHOLAMI: That is correct.

15 MS. CHARLESWORTH: We're happy to have
16 Mr. Stoltz then go later.

17 MR. GHOLAMI: My name is Paul Gholami. I
18 am the cofounder and director of Azentium, a
19 five-person studio based in San Diego.

20 Before becoming a game developer, I was
21 film preservationist for the University of
22 California, San Diego.

23 It's an honor and privilege to be here
24 today.

25 Last year, the plug was unceremoniously

1 pulled from over hundreds of titles, with entire
2 games and stories within them lost. The victories,
3 the defeats, the friendships made and destroyed, the
4 experiences gained and lessons learned, only
5 fragments of those games remain floating around
6 aimlessly on the web, barely holding on in the
7 memories of their players.

8 That some games will prove to be more
9 valuable, more significant than others, there is no
10 doubt, but it is not my place to decide, not our
11 place to decide what lives and what dies.

12 We are obligated to preserve them for the
13 future, to keep them safe for the generations to
14 come. Preservation is not about curation. We take
15 everything we can get our hands on and hold on for
16 as long as humanly possible.

17 Every game gives a peek into our world as
18 it was. They're products of their time and culture.
19 What does Animal Crossing tell us about how we
20 interact with other people online? Why did
21 thousands of people desperately hold onto Halo 2 in
22 its final hours as the servers were shut down and it
23 slowly faded into the annals of history.

24 While these questions may seem silly or
25 even absurd on the outset, these are games that have

1 sold millions worldwide. They have resonated with
2 adults and children alike.

3 It's one thing to hear about a game or
4 read about a game. It's an other to place yourself
5 in that space and become a part of its world.

6 A game is nothing without its players and
7 in the mere act of playing, they become members of
8 that game. They author stories never before
9 conceived by any of the game's creators. And in
10 that way, they hold ownership over their copy of the
11 game. They possess the right to do with it as they
12 will.

13 As it stands today, DMCA denies us
14 ownership. It rejects the very possibility that
15 these games could personally touch and affect the
16 lives of their players. It closes the door on any
17 opportunity for us to genuinely explore and
18 understand our own creations.

19 We cannot allow for games to be marched
20 into certain historical oblivion. Treating games as
21 merely products is the act of a cynic.

22 They are not just an assortment of codes
23 and 3D models. They are works of art capable of
24 showing the best and worst in us.

25 The very nature of games beckons for the

1 growth of global communities. We cannot allow this
2 strength to be perverted into a weakness as a tool
3 to silence communities or wipe entire histories.

4 Even as developers wind their servers
5 down, the community's passion does not simply
6 disappear overnight. The developers can shut down
7 their servers if need be, but give players the
8 opportunity to keep their games alive. Give the
9 next generation of developers like myself a chance
10 to stand on the shoulders of giants and learn from
11 the work of our predecessors.

12 Sega's Chromehounds reshaped my
13 understanding and appreciation of game design.

14 As of January 2010, the multiplayer
15 defining part of the game is now entirely
16 inaccessible. I cannot revisit and reassess the
17 game that left such a lasting impression on my
18 approach to game design. An important personal
19 touchstone is lost, likely never to return.

20 Allow us the opportunity to study these
21 works and discover ways to advance our craft.

22 Without this exception, hundreds of
23 thousands if not millions of community members,
24 developers, preservationists and academics will be
25 locked out from historic and culturally important

1 games from a future where they can be studied and
2 enjoyed by anyone.

3 It shouldn't be that way. There is room
4 for every game. Let us just open the door.

5 Thank you.

6 MS. CHARLESWORTH: Thank you.

7 I have a question. You mentioned a game
8 that you had lost access to the multiplayer. What
9 was the game's name again?

10 MR. GHOLAMI: The name of the game is
11 Chromehounds.

12 MS. CHARLESWORTH: And were you still --
13 are you still able to access that game for your own
14 play, not multiplayer, single-person play, as
15 opposed to multiplayer?

16 MR. GHOLAMI: Yes, you can access the
17 single-player. The issue, though, is that the
18 single-player, at least, is barely relevant to what
19 makes the game what it is, like what makes it so
20 unique and what makes it so interesting from the
21 perspective of the game developer.

22 MS. CHARLESWORTH: Can you explain a
23 little more about that.

24 MR. GHOLAMI: A lot of it has to do with
25 the fact that you as the player essentially impose

1 different squads along with friends. And that gives
2 the chance to -- as a squad member to ally with one
3 of three essentially different countries or
4 factions. There is one that sort of represents the
5 U.S., another one that represents Russia and
6 another one that represents like just a nondescript
7 Middle Eastern country.

8 And so the gist of it is that you as part
9 of your squad can go fight in contested cities
10 players that are allied with another country. And
11 from there, you start to see this incredible dynamic
12 occur in terms of, well, when essentially I had this
13 squad and I was the one that was leading the squad,
14 there were interesting discussions about why are we
15 allying with one group over another, why are we
16 investing in fighting in this part of like this more
17 larger end game war than another place.

18 And you start to see these kinds of
19 discussions of like allegiance and loyalty and
20 dedication that emerge as a result of the mechanics
21 in the game. And this is specific to the
22 multiplayer in a way that just doesn't exist in the
23 single-player at all.

24 MR. DAMLE: And the single player, is it
25 the same game, different mechanics, but everything

1 is AI -- or how does the single-player game work in
2 that?

3 MR. GHOLAMI: So the single-player, you
4 don't have any kind of cooperation with other
5 people. Essentially, you have this -- the game is
6 essentially about you building these mechs or robots
7 and you are piloting these robots and fighting them,
8 but you don't have that same kind of cooperation or
9 like broader kind of community effort that you would
10 have in that multiplayer space.

11 Essentially, the single player, you are in
12 this mech, you shoot a whole bunch of robots and it
13 becomes incredibly soulless. It loses a lot of,
14 again, what makes the game what it is.

15 MR. DAMLE: And it's AI controlling the
16 other.

17 MR. GHOLAMI: Exactly.

18 MS. CHARLESWORTH: "AI" for the record.

19 MR. DAMLE: Is artificial intelligence.

20 MR. RUWE: From the role of
21 preservationists, what is your reaction to the
22 alternative of the LAN systems enabling that sort of
23 multiplayer function?

24 MR. GHOLAMI: The unfortunate thing is
25 even in the case of a game like Chromehounds, LAN

1 wasn't included as part of the game. There are a
2 large swath of games that don't have that as the
3 part of the functionalities of the game in any
4 capacity.

5 MS. CHARLESWORTH: I have a question now.

6 Let's say hypothetically a museum was able
7 to work with the developer to set up that game so it
8 was -- or some preservationist -- so there was some
9 accessibility at least to people who have an
10 historical interest to come in and maybe engage in
11 some amount of multiplayer play.

12 How would that impact your reaction or
13 your feeling as you sit here today about that game?
14 Would some amount of access in a museum or
15 institution help address that problem or do you need
16 to have it in your living room?

17 MR. GHOLAMI: It would go part of the way
18 there. I think what happens is these games are
19 often then long experiences. I think back to when
20 one of my professors talked about how you would go
21 back and read -- she would go back and read a lot of
22 her old works of literature and see in the margins
23 the notes that she wrote so she can see what she was
24 thinking about this particular work 20, 30, 40 years
25 back and having the chance to really explore those

1 feelings and thoughts and understand how she had
2 evolved in relation to her understanding of that
3 craft of that medium.

4 And you don't have necessarily the same
5 opportunity to do that when it's only available in a
6 museum. You don't really have a chance to really
7 sit down and explore.

8 It's great for people who are introduced
9 to it for the first time and want to get a cursory
10 look at it, but for those who have already been
11 impacted by those particular games, it doesn't offer
12 the same kind of advantages as having full access to
13 it like in the living room.

14 MR. RUWE: Can you ever recreate the
15 multiplayer value that you seek to preserve when it
16 appears that that value is dependent upon the
17 players, themselves, and we seem to have heard that
18 the players disperse once the support ends?

19 MR. GHOLAMI: There is absolutely the
20 possibility that players could come back. And one
21 really nice thing, too, is oftentimes for games that
22 don't really have a huge community, they would go
23 ahead and set aside times.

24 And for the record, I am talking about
25 games that still have online functionality that have

1 really small user bases. They will organize
2 together and say on this date and time, we are all
3 going to come together and play.

4 So you still have the opportunity to
5 really replicate that experience or as close to that
6 experience as possible.

7 MS. CHARLESWORTH: Ms. Albert.

8 MS. ALBERT: He actually just said exactly
9 what I was going to say.

10 MS. CHARLESWORTH: Mr. Stoltz.

11 MR. Stoltz: Thank you.

12 Video games that depend on server
13 communication may have the shortest shelf life of
14 any contemporary art form because when servers shut
15 down, which can be in as little as two years after
16 the game's debut, the games become unplayable, or as
17 my co-panelists have described much more eloquently
18 than I can, the game becomes a shadow of its former
19 self.

20 So we are asking for an extension to the
21 ban on circumvention for two interrelated reasons.

22 One is where a person has paid for a copy
23 and they would like to keep that copy working in
24 full, and the second is preservation for posterity.

25 Video games are now recognized as

1 important an artful and cultural artifact as film
2 and server shutdowns are to video games what the
3 decaying celluloid is to film. It's one of the
4 major obstacles to meaningful preservation.

5 So I will speak about personal use.

6 MS. CHARLESWORTH: Can I just interrupt
7 you for a minute.

8 You could preserve a lot of the game
9 without server functionality, could you not? Like
10 in other words, you could preserve a game, a
11 multiplayer game, without the multiplayer
12 functionality just to look at it as a single-player
13 game, like if you were interested in seeing just in
14 general what that game was about in a museum.

15 Is that not correct?

16 MR. Stoltz: Well, you can see generally
17 what a film is about by looking at a few still
18 images of it, but no serious film enthusiast or
19 scholar would consider that a faithful preservation
20 of it.

21 MS. CHARLESWORTH: No, but I am saying if
22 a game has single-player functionality and that's
23 all that is preserved and accessible -- I mean you
24 can get maybe not the complete understanding of the
25 game, but you can certainly see a fair amount of it

1 from that vantage point, can't you?

2 MR. Stoltz: There are hundreds of games,
3 both the ones my co-panelists have described and
4 many of the ones listed in the appendix to our reply
5 comment which cover just a single platform and many
6 others besides where multiplayer play is the essence
7 of the game. It is the primary aspect that gets
8 reviewed by professional critics. It's the primary
9 reason why people buy the game and it's the primary,
10 in a sense, cultural impact of that game.

11 So yes, can you play such games in
12 single-player mode, yes, but it's the difference
13 between playing poker and playing solitaire. Even
14 granting the rules may be similar, the experience is
15 quite difference.

16 MS. CHARLESWORTH: That is true, but maybe
17 that might be a pretty good analogy. It's part of
18 the experience but not the full experience, I think
19 is what you are saying.

20 In other words, if you have a
21 single-player game, you are getting, say, a
22 truncated or different version of the experience but
23 you are still -- there is still some value, I would
24 think, if someone really wants to see what a game
25 was about looking at the single-prayer mode, isn't

1 there?

2 MR. Stoltz: Well --

3 MS. CHARLESWORTH: Is this a hard point to
4 concede? It's really not. It's like I am saying
5 you can kind of see what the game is about but maybe
6 not the whole thing. That's all I am saying.

7 Don't you agree with that?

8 MR. Stoltz: It's a substantially different
9 experience.

10 There are many games for which
11 single-player mode doesn't include the entire game.
12 There are many games for which the ability to
13 connect with other players unlocks realms of game
14 play that simply aren't available even playing
15 against an AI. That is pretty common.

16 And I would like to add, also, that there
17 are significant a number of games that cannot be
18 played even in single-player mode once servers are
19 shut down. We have identified at least four of
20 those that were shut down in 2014 alone and there
21 are many from earlier eras, as well.

22 A game called SOCOM: Confrontation, which
23 was also known for its focus on teamwork and is
24 unplayable after a server shutdown. Another is
25 Metal Gear Online, the one that Ms. Albert

1 described.

2 It's fairly common. And also, in some
3 instances, even if it's not the intention of the
4 manufacturers that single-player mode be disabled,
5 once the servers are shut down, it happens anyway.

6 This happened recently with a game called
7 NBA 2K14 where servers were shut down with the
8 intention that single-player mode would continue to
9 work, but as an unintended side effect, all of the
10 single-player mode people's progress in the game was
11 wiped out.

12 So essentially, a game can be almost
13 completely disabled, even unintentionally at times.

14 A thread has run through these proceedings
15 since the beginning, since actually the very first
16 triennial rulemaking in 2000, that if a person has a
17 lawful copy of a work that they ought to be able to
18 continue using that copy and that copy should stay
19 functional.

20 In 2000, the library granted only two
21 exemptions. One of them was for precisely this,
22 abandoned software that relied on hardware dongles
23 to continue operating.

24 In that era, it was hardware dongle that
25 was the access control that rendered a piece of

1 older software inoperable. Today, it's server
2 authenticity checks that perform that same function.

3 The office has considered this question
4 in, I believe, four of the six rulemakings prior,
5 including this one, and I feel like that has been a
6 consistent theme.

7 And gamers, game enthusiasts, they expect
8 to be able to continue using a copy of a game they
9 have purchased.

10 MS. CHARLESWORTH: Although there is a lot
11 of -- surely there must be some understanding that a
12 lot of times, support is removed, right, because it
13 happens a lot. So when you purchase a game today,
14 isn't there some concern that or knowledge that if
15 there is a server component to it, that it might not
16 be permanent?

17 MR. Stoltz: Knowledge is one thing but the
18 consumer expectation and the idea of a bargain in a
19 commercial transaction are something else.

20 We see this and we have provided evidence
21 in that there is quite often an outcry and a sense
22 among consumers that shutdowns, especially on a
23 short time frame, are in fact denying them the
24 benefit of their bargain. And that is precisely the
25 sort of sentiment that led to preservation projects

1 like the projects that happened in the wake of the
2 GameSpy shutdown. There are at least ten of those
3 that we know of and that all happened in a little
4 over a year.

5 MS. CHARLESWORTH: Is there any disclosure
6 on video games -- when a consumer buys a game today
7 that has an online piece to, is there any disclaimer
8 on the game or in any of the literature that comes
9 with the game that says there is no promise that
10 game play will be supported after two years, or
11 whatever it would say, a warning to the consumer, in
12 other words?

13 MR. Stoltz: There may be but I think that
14 may be a case of the large print giveth and the fine
15 print taketh away.

16 MS. CHARLESWORTH: No, I mean I want to
17 know is there or isn't there. Have you looked at
18 games you bought and noticed that they do or don't
19 say anything? In other words, is the consumer given
20 any notice?

21 MR. Stoltz: I am not aware of the specific
22 disclaimers that appear on the game. What I am
23 aware of is that when you see an ad for a game on
24 TV, often what they're showing you is network play.
25 And when you read a review by a professional

1 reviewer, often what they are discussing is network
2 play.

3 MS. CHARLESWORTH: I am not -- I am not
4 trying to say I have a strong point of view on this
5 one way or the other. I think this is a really
6 interesting class and a very difficult problem, but
7 I mean one of the issues is as a consumer, a lot of
8 times consumers are protected, at least in theory,
9 because they're given notice.

10 I mean would a consumer expect to be able
11 to play the game a hundred years from now? That
12 would seem a little extreme. We all know technology
13 changes.

14 So I think it's an interesting question
15 about how much disclosure there is on a game when
16 you buy it. And I personally don't know the answer
17 to that. So that's why I was asking you -- and
18 maybe other people on the panel, if they have
19 knowledge on that when we get to them can share
20 their thoughts.

21 MR. Stoltz: So I know that after the
22 GameSpy shutdown, Nintendo continued to sell several
23 games and slap labels on them saying this game will
24 no longer work in multiplayer mode.

25 I am not aware of warnings on games that

1 say we may do this in the future. I am not aware of
2 that.

3 I will speak a little about archival and
4 research use.

5 It's only in the past several years,
6 really since about 2010, that museums, archives and
7 libraries, including the Library of Congress, have
8 taken a strong interest in preserving video games as
9 an artistic medium.

10 While someone who is determined to make
11 unlawful copies of games is not going to be deterred
12 by the additional threat of anti-circumvention
13 liability on top of copyright infringement
14 liability, a professional academic, archivist or
15 librarian has to be scrupulous in their legal
16 compliance. And that makes the possibility of
17 anti-circumvention liability a serious obstacle to
18 preservation.

19 And I heard this on the record from Alex
20 Handy at the Museum of Art and Digital Entertainment
21 and several others -- it has also been raised by
22 David Gibson of the Library of Congress -- and I
23 mean we discussed this, but the goal of
24 preservation -- and I would direct you to Alex
25 Handy's comments on this point, but the goal of

1 preservation is to preserve every aspect of the
2 original experience of playing a game, to provide
3 really the maximum amount of data and experiential
4 data for the future, whether that is a museum
5 exhibit for academics or whatever use coming down
6 the road.

7 That is why, say, a video of game play or
8 a game that works only in several modes is better
9 than nothing, but a pretty inadequate substitute.

10 MR. DAMLE: Another question about
11 preservation exemption. How broadly would -- what
12 sort of activities do you anticipate occurring --
13 there was the example of the museum in Oakland that
14 actually allows people to go in and play the games,
15 which goes a little beyond simply preserving it but
16 actually provides sort of the public access to play
17 the games, like an arcade.

18 So if you could talk a little bit about
19 what sort of your core concerns are, whether it's
20 preservation for preservation sake or whether there
21 is an element of your proposal that would go with
22 allowing activity beyond that.

23 Does that make sense?

24 MR. Stoltz: Sure, sure.

25 The proposal is for preservation.

1 Preservation is the essential requirement for future
2 scholarship, future exhibition, future history,
3 really, of historical work.

4 MS. CHARLESWORTH: I have a question and
5 maybe this is definitely for this side of the table
6 and maybe I will direct it to Mr. Stoltz, but I see
7 other people with their cards up, but we will circle
8 around, but to me, there is a distinction sort of
9 thinking through this, server authentication versus
10 multiplayer play which involves matchmaking and
11 things like that.

12 Can you explain sort of if we were to
13 grant an exemption, how would those two different
14 things be effectuated, in other words, in the case
15 where you sort of have a missing dongle or you just
16 can't activate the game for your own play versus
17 multiplayer play? Can you talk about the
18 distinction between those and what the sort of help
19 would be.

20 MR. Stoltz: I'm going to defer to my
21 co-panelists. Are you asking what is entailed --

22 MS. CHARLESWORTH: There are two kind of
23 different things, right?

24 MR. Stoltz: What does the required
25 modification entail?

1 MS. CHARLESWORTH: Yes, at a high level
2 what -- let's say I wanted to -- say a multiplayer
3 game goes offline and I have my community of people
4 and I want to continue having that experience. What
5 would need to be done -- and there was no
6 anti-circumvention issue, right? It was assumed
7 that the exception was granted.

8 How would you recreate that both -- well,
9 maybe on a technical level, do you have to build a
10 new server? How does that process?

11 MR. Stoltz: I will summarize the way we
12 gave an example of this in our comments. It was the
13 statement of John Doe, the individual who performed
14 this process for the Technika arcade game.

15 And to the limit of my technical
16 knowledge, this involves watching network packets as
17 they travel over the network, essentially testing
18 a simulated server communication with one copy of
19 the game and to see to what signals the game
20 responds to and then writing and as an original work
21 a server that can generate those communications.

22 And those communications at the simplest
23 are going to be "you are allowed to run" and at the
24 more complex level, they are "Kendra and Cathy are
25 online right now and would like to play, here are

1 the messages that will initiate your playing against
2 each other."

3 MR. DAMLE: And what changes do you have
4 to make to the games, themselves, if it's a console
5 game to the console? So it's not just setting up a
6 server. It's also changing the copy of the game
7 that you have in some manner, or could be changing
8 the copy of the game you have in some manner.

9 MR. Stoltz: I am going to defer to my
10 co-panelists on that question.

11 MS. ALBERT: I can speak about this a
12 little bit. And I think one of the best examples is
13 the Metal Gear Online discussion where they talk
14 about a couple of different ways in which -- the
15 things that they had to do in order to get the
16 servers up and running.

17 So in the sort of easiest way, what this
18 involves is just changing the IT address that the
19 client connects to. So like this may be hard coded
20 into the game or there may be some -- if the game
21 allows you -- it may allow us to just change the IT
22 address. That is probably the easiest.

23 In some circumstances, you may have to
24 sort of return expected values from the server in
25 order to get the client to sort of connect and work.

1 And in cases where the game is expecting
2 like a particular certificate -- so like a
3 representation from the server or some sort of more
4 concrete security method -- they may have to
5 deactivate that call and change it into a new one so
6 that you can get it to point to your server.

7 Does that help?

8 MR. DAMLE: Yeah, that helps, but so those
9 are the changes you are making to the game,
10 yourself, the deactivation and certificate check and
11 pointing it basically to a new server.

12 MS. ALBERT: And the reason why that is
13 connected to the authentication issue is that
14 often -- it's not necessarily always exactly the
15 same, but it's in cases the sort of stuff that you
16 may have to take somewhere.

17 MR. DAMLE: And is it your understanding
18 that for modern console games, that one of the
19 points that ESA makes is that they necessarily
20 require jailbreaking the console, jailbreaking the
21 console so that now, it's completely jailbroken and
22 you can run pirated content on it or whatever.

23 Is that basically your understanding, as
24 well?

25 MS. ALBERT: One way to do it is certainly

1 by jailbreaking the console.

2 I think part of what I have learned
3 through this process is that many different
4 communities adopt many different strategies for this
5 really particular thing and it really depends on how
6 the game is coded. So I would hesitate to say
7 strongly that it would always require that, because
8 I honestly don't, but definitely for
9 older-generation consoles, it does not require
10 jailbreaking.

11 MR. DAMLE: If hypothetically we were to
12 say you could make changes to the game, you could
13 set up your own server but you can't touch the
14 console, would that basically solve your concerns?
15 You can't jailbreak a console.

16 MS. ALBERT: Yes, jailbreaking a console
17 is a different case.

18 MS. CHARLESWORTH: So just to be clear,
19 you think there is a solution that would solve your
20 problem that would not require us to allow
21 jailbreaking of consoles.

22 MS. ALBERT: Yes. So I would like -- yes.

23 So I think that there are many games in
24 which you can change the multiplayer or change the
25 authentication without jailbreaking the console.

1 And we would like to make sure that is excepted from
2 DMCA 1201, that jailbreaking the console is a
3 separate 1201 issue.

4 MR. CHENEY: At what point are you
5 breaking a TPM, in other words, to do that? I am
6 not clear in this process where there is a TPM
7 breaking. Other than the console you are talking
8 about, where is the TPM that you are breaking? In
9 this scenario, you are talking about not
10 jailbreaking the console.

11 MR. Stoltz: If I could, so the
12 client-server communication protocol, to the extent
13 that involves the application of secret knowledge,
14 could be construed as a circumvention of a TPM.

15 Likewise, a modification to a game so
16 to -- for example, to change the address of the
17 server from which it requests authentication may
18 require the circumvention of a TPM. That is an
19 authenticity check.

20 Going back to the jailbreaking question,
21 it is probably more common on the current generation
22 of consoles that restoring the game to functionality
23 will require jailbreaking of the console.

24 MR. DAMLE: Hold on one second.

25 MR. Stoltz: It's more likely for the

1 current generation of games, but then again, those
2 servers are still running. So they're not the ones
3 most in need of preservation right now.

4 MR. CHENEY: That is interesting. Okay.
5 Thanks.

6 MR. Stoltz: There is absolutely -- my
7 understanding is it's much more common that it is
8 the norm with older consoles like the PlayStation 2
9 that the preservation work can be accomplished
10 without essentially removing all of the anti-piracy
11 features of the console.

12 That is not the case with older consoles,
13 certainly not the case with PC games.

14 And I want to emphasize the importance of
15 access controls in PC games, that there is a company
16 operating out of Australia called Game Ranger that
17 provides matchmaking services for -- I have heard
18 different figures, but between 500 and 700 PC games
19 for which the servers have been shut down.

20 MR. DAMLE: And when they do that, to what
21 extent are those licensed? Do they get licenses
22 from the developer or from the publisher to run
23 those matchmaking servers?

24 MR. Stoltz: To be honest, I don't know.

25 MR. DAMLE: That might be a question for

1 Mr. Frankel.

2 Mr. Gholami, if you don't mind, the
3 opponents have been waiting patiently. So we will
4 continue on and circle back if that is all right.

5 MR. WILLIAMS: Thank you for having me
6 here again on behalf of ESA, MPAA and RIAA.

7 I am going to try to be brief because I
8 don't want to be repetitive of what Simon and
9 Lindsey are going to say on behalf of ESA directly,
10 but what I am here to emphasize is that the
11 coalition of creative industries that I represent
12 endorses ESA's position.

13 And although it sounds like from some of
14 the discussion that maybe consoles are not an issue
15 on this panel as I was afraid they were going to be,
16 I do want to highlight the threat to the integrity
17 of those consoles impacts a wide range of interests
18 beyond video game publishers.

19 In today's marketplace, companies generate
20 and distribute music and movies and video games and
21 are collaborating more than ever before to deliver
22 exciting products to consumers.

23 Recorded music is an essential component
24 of many video games, motion pictures and television
25 shows, as well as music can be enjoyed through

1 consoles traditionally dedicated solely to gaming.

2 Games are also adapted into films and vice
3 versa.

4 So I appreciate fully the proponents of
5 the exemption here today that filed comments. They
6 love the copyrighted works that my clients are
7 putting out and that is a good thing.

8 The fact that people are demanding access
9 to professionally-produced, high-quality copyrighted
10 material more than ever before to me is evidence
11 that the Copyright Act as well as the DMCA are
12 actually working.

13 High-quality, good products are making it
14 to the marketplace and we want to keep the
15 incentives in place to keep generating that content.

16 Access controls to us are a critical
17 component of that success. They protect creators
18 and distributors of content against infringement.
19 They also enable models designed around subscription
20 access, time-limited access, multiuser access and
21 other products.

22 We fear that any exemption that did
23 undermine the integrity of consoles would disrupt
24 this ecosystem significantly.

25 When a video game publisher, for example,

1 that licenses music for use in a game is unable to
2 recoup investments because infringement occurs or
3 other free writing occurs, there are still effects
4 there. The kinds of licensing fees that go to the
5 music producers could deteriorate and lessen as the
6 publishers are unable to recoup their investments.

7 Some people try to accuse us of being
8 Chicken Little or saying this is going to doom us.
9 That is not what I'm trying to say, but even harm
10 that falls short of complete doom is still harm and
11 something that we are concerned about.

12 MR. DAMLE: So are those harms that are
13 traceable to piracy or are there particular harms
14 that you are concerned about that flow from the sort
15 of use case that the proponents are basically
16 focused on?

17 MR. WILLIAMS: Right. So I do think --
18 and this goes to one issue that I was going to get
19 to. I will raise it now.

20 I do think there are some questions as to
21 the non-infringing nature of some of the conduct
22 that they describe. We pointed out the recent
23 Oracle decision from the federal circuit and that is
24 in our view a correct reading of some of these cases
25 about interoperability that says that your final

1 product can't have the original code that was in the
2 original product if you are going to engage in that
3 kind of reverse engineering. The ultimate goal
4 should be a new product that doesn't replace the
5 existing product that you were reverse engineering.

6 MR. DAMLE: I think that when they are
7 reverse engineering, there are packet sniffers or
8 whatever to look at what those outputs are and then
9 writing code basically from scratch to generate the
10 outputs. That seems the classic sort of reverse
11 engineering.

12 Is your view that that is an infringing
13 activity?

14 MR. WILLIAMS: I am not sure what they're
15 describing is equivalent to what you are describing.

16 My understanding is that there needs to be
17 an adapted version of the game plus some code that
18 enables the authentication server to run. And
19 whether it's possible to do that without reproducing
20 any code, as well, is a question that I have.

21 MR. DAMLE: Not reproducing the code but
22 without copying the code, essentially a clean room
23 implementation of the code.

24 MR. WILLIAMS: Sure.

25 Whether the final product contains some of

1 the original code or an adapted version is my
2 question on that.

3 So the primary thing I was trying to
4 express that we are concerned about is more
5 traditional forms of piracy that are enabled when
6 the consoles are opened, such as the Popcorn Time I
7 discussed on the last panel.

8 Some people raised whether smart TV's have
9 the capability to store the movies. I think, number
10 one, the way I understand that that operates is
11 similar to most streaming where it downloads long
12 enough for you to watch the movie so you don't have
13 to have a full connection on the smart TV. So you
14 can use the application to view the movie and then
15 move onto the next one.

16 Here, I think with more significant
17 capacity for storage, there is an even greater
18 potential threat.

19 And there are other applications out there
20 separate from Popcorn Time that actually enable you
21 to make copies of streaming video from subscription
22 services while you are viewing it and then store it.

23 So if you want to, you can sign up for a
24 month, create a number of copies and then save them
25 for later. There are applications that enable that.

1 So if you open up consoles, we're
2 concerned that that type of thing could be done.

3 MR. DAMLE: And if we were to exclude
4 consoles, would that solve your concerns largely?

5 MR. WILLIAMS: No, I don't think so
6 because I would still have these concerns about
7 whether the actual games are being infringed and
8 adapted in an infringing manner.

9 And I think there are other potential
10 harms Simon and Lindsey are going to discuss, as
11 well.

12 MS. CHARLESWORTH: That is one thing I
13 might be interested in hearing more about, and I
14 don't know if it's you or Mr. Frankel or
15 Ms. Tonsager, but sort of this issue of whether you
16 need to create derivative works in order to enable
17 some of the proposed uses.

18 MR. WILLIAMS: Right.

19 And my understanding is that the
20 proponents have said you basically have to adapt the
21 games in order to engage in this activity and they
22 say that is fair use. So I think it's clear there
23 is a derivative work being made, but as I understood
24 the comments and questions, was that fair use or not
25 fair use.

1 I think I have touched on most of what I
2 wanted to cover for today and I will defer the rest
3 of the time to my colleagues here.

4 Just a very final note is that we are
5 concerned about these types of exemptions that even
6 though in some respects the goal might be well
7 intentioned, it can lead to not only the piracy I am
8 describing but also the proliferation of tools out
9 there designed to enable that conduct and that is
10 concerning to us, as well.

11 Thank you.

12 MS. CHARLESWORTH: Where are you on the
13 preservation issue? In other words, do you see that
14 as a distinct sort of concern or interest here as
15 opposed to just continuing the game playing?

16 MR. WILLIAMS: It does seem to me that
17 they're bundling a number of different objectives
18 into one exemption and I do think it's smart to
19 think through each of those uses separately.

20 I am not sure that all of the types of
21 preservation that they're discussing would
22 ultimately be lawful, as you were discussing whether
23 the public can come in and out of a museum and play
24 copyrighted games. It raises issues.

25 So I think it would have to be thought

1 through very carefully and cautiously.

2 MS. CHARLESWORTH: Mr. Frankel.

3 MR. FRANKEL: Thank you. I will try to
4 cover three -- as I was taught in law school, three
5 points.

6 MS. CHARLESWORTH: And this is hearing
7 Exhibit 5 we are now watching on the screen.

8 MR. FRANKEL: There isn't a lot to watch
9 but that's just an outline, three points I want to
10 cover.

11 I will try address many of the points that
12 have been raised already as I go. And I am sure
13 Ms. Tonsager can help me as well to try to respond
14 to many of the questions that the Office has raised,
15 but I first wanted to with respect to some of the
16 points in reply and some raised today, I wanted to
17 make three general points.

18 The first is that when you consider what
19 we're discussing in light of the real world of video
20 games and access controls, the proposed class is not
21 workable and it's not justified by the proponents'
22 evidence, and it's hard to see, although we may
23 discuss it, if there are subclasses that may be
24 justified.

25 I think it's become clear that there are a

1 lot of complexities here in terms of what are the
2 access controls, what is the nature of the game,
3 where is the content residing, what do the
4 proponents want to be able to do and what does it
5 require.

6 And we will come back to some of that, but
7 I think that the class as phrased, it turns out to
8 be quite sweeping. And in the past, the Office has
9 quite appropriately rejected those classes.

10 The comments of the proponents here don't
11 recognize a lot of differences in the types of
12 access controls and the games that are at issue.

13 The proposal as framed -- and the Office
14 has articulated some ways that might be limited
15 today -- but as framed, it would cover all gaming
16 platforms, not just PC's and not just consoles, but
17 smart phones and other mobile devices which we
18 haven't even discussed.

19 And there is no real, as I think -- as I
20 will attempt to explain, I don't think there are
21 limitations that really -- there is not a more
22 limited class that is justified.

23 A couple of examples -- and this comes
24 back to an item that has already been mentioned a
25 couple of times -- the EFF's reply comments that

1 server-based controls operate separately from
2 console-based checks, but what they cite is an
3 article discussing the Metal Gear Online game which
4 specifically says that anyone wanting to play Metal
5 Gear Online on a PS3 needs to be running a hacked
6 console.

7 It may be that very early generation
8 consoles did not have to be hacked for this purpose,
9 but it is the case that more recent ones have.

10 I understand from Microsoft's
11 representative who is here that all but the very
12 first Xbox would have to be hacked -- the console
13 would have to be hacked and it would basically be
14 wide open to any kind of steps that the proponents
15 are proposing here. And I know that is true of the
16 most recent Sony consoles, as well.

17 So we have this problem, which is that at
18 least as to console games, if you are going to allow
19 any kind of circumvention of access controls for the
20 purposes that have been articulated, it would also
21 mean the console, itself, is open for all the issues
22 that we have discussed with respect to Class 19.
23 And we can talk about it later today, but
24 essentially, it would be a device for infringement.

25 And then we get to this issue of sort of

1 this spectrum of games, because it really is a
2 spectrum in terms of at the one end, you have
3 single-player games where all of the content and all
4 of functionality resides on the device that the user
5 is using; and the other end, you have devices where
6 all of the content and functionalities reside on
7 the server, and there isn't a clear dividing line.

8 The EFF comments propose excluding from
9 the proposed class persistent worlds, which are
10 defined as games with additional content residing on
11 the game server, but the proponents' examples of
12 games that are and aren't covered by the proposed
13 class make clear that this is not a distinction that
14 is workable in practice.

15 On the one hand, EFF suggests games should
16 fall within the class even though alternative ending
17 and game content are available only through game
18 servers. On the other hand, they say that World of
19 Warcraft falls outside the class, even though much
20 of the content of this game is actually stored
21 locally on the player's device.

22 And so you have this continuum that really
23 makes it, I think, quite challenging for the
24 Copyright Office and impossible for the public if an
25 exemption is granted to know which games will

1 qualify as something where access controls can be
2 hacked and which would not.

3 The proposed class as articulated by the
4 office uses the word "primarily," that is, the
5 exemption would not apply to video games whose
6 audiovisual content is primarily stored on the
7 developer's server, but again, this is a continuum
8 and it's going to be very difficult to draw a line
9 that would actually allow people to know what they
10 are allowed to do.

11 And it's a little more complex because
12 it's not just the audiovisual content, which are the
13 words used in the proposed class, that often resides
14 on the server.

15 And more generally, there is this
16 conflation in the reply comments as to differences
17 in the features and functionality of older and more
18 recent current video games. And I think the result
19 is that there is a suggestion that the greater
20 interactivity of the current games somehow warrants
21 circumvention of access controls used in older
22 games, that is, because there is more multiplayer
23 play now, there ought to be a circumvention of
24 access controls as to older games with different
25 features.

1 Older games have, not surprisingly,
2 limited online functionality and online map making
3 was incidental for the single player and local
4 multiplayer functionality, but due in part to
5 Section 1201 protections and advances in cloud
6 technology, there has been significant innovation of
7 the last decade in how video games and other content
8 are accessed and experienced by users.

9 So EFF acknowledges that the persistent
10 world that requires robust servers and cannot
11 generally be recreated after a shutdown without the
12 shutdown of the game's developer should be included,
13 games that reside entirely on the server and games
14 that are played through a general purpose web
15 browser.

16 And I think there is an interesting
17 interplay there between this idea that games can't
18 generally be recreated. And we heard a lot and I
19 will come back to it about the need to preserve what
20 has been done, but if what has -- if the game's
21 history resides on the server, it will not be
22 preserved anyway in situations that are being
23 addressed by an exemption.

24 I will come back to that.

25 There are a number of other points I want

1 to make just about the development of innovations in
2 video games that aren't taken into account by the
3 proponents.

4 A number of video games today, including
5 Titanfall and SimCity, which are -- and a number of
6 other games mentioned in the proponents' comments
7 use cloud-computing technology to provide better
8 in-game performance.

9 So, for example, in TitanFall, much of the
10 AI, artificial intelligence, that determines how
11 computer-generated characters react to the gamers'
12 actions in real time is residing in the cloud.

13 And for SimCity, entire calculations would
14 have to be rewritten to make the game function
15 correctly without server access because the game is
16 routinely pinging the Electronic Arts servers for
17 critical pieces of data and relies on that
18 information getting back to move the game along.

19 So like Persistent World, these
20 cloud-based games rely on servers for functionality
21 even if the audiovisual content is not residing on
22 the server.

23 EFF suggests these game would fall within
24 the nebulous controversy of the proposed class.

25 So there is just a lot of uncertainty

1 here. And I think in prior proceedings, the
2 register has rejected the sweeping classes because
3 it is so difficult to delineate and -- quote,
4 delineate the appropriate contours of a class in a
5 factual vacuum.

6 MS. CHARLESWORTH: I have a question as
7 long as you paused there.

8 So how do you respond to the consumer
9 issue here that was raised at the other end of the
10 table, which is you buy a game and a certain number
11 of years later, it's no longer available, we really
12 love it but we can't play it.

13 Is there -- what do your clients about
14 that? What is the thinking in terms of the consumer
15 expectation and the frustration when the game goes
16 away?

17 MR. FRANKEL: I will take some points out
18 of order.

19 I think there is a whole spectrum, again,
20 responsive to that. One is that these server
21 shutdowns occur when the demand -- when the
22 communities have dwindled, in short.

23 And I know that from the point of view of
24 the passionate game lovers, these are large numbers,
25 but in terms of the market, these are situations

1 where the number of consumers who are actively
2 engaged in server-mode play of these game has
3 dwindled to the point that it doesn't make sense for
4 the companies to do it.

5 MS. CHARLESWORTH: And they're right here.

6 MR. FRANKEL: All of them.

7 That is just a point that goes to a number
8 of issues, but it includes the question of what is
9 the substantial adverse impact on the legitimate
10 users.

11 MR. DAMLE: Dwindled down what? Can you
12 give a ballpark? Sort of to like 10,000 players,
13 that is not as cost effective?

14 MR. FRANKEL: I don't have concrete numbers.
15 We can try to get that to you.

16 MS. CHARLESWORTH: And are there
17 disclaimers that when a consumer buys a game, does
18 it say, you know, beware on the --

19 MR. FRANKEL: At least sometimes, yes, in
20 some instances, yes. And I don't know what kind of
21 online disclaimers there are when you log in.

22 And I would take issue with one point that
23 was made. I don't think it's a recent -- very
24 recent development that the online functionality
25 comes with some kind of subscription requirement or

1 payment requirement. That has been going on for
2 quite some time with the development of these
3 persistent world online games, that is, that people
4 are doing something extra to get something that is
5 separate from what they bought. And often, it is
6 actually paying more for the online function, but at
7 least some games do say -- do have these
8 disclosures.

9 And there is connected to Xbox 360, it
10 provides,

11 "In available games, paid subscription
12 required for online multiplayer. Some
13 features and downloads require additional
14 storage hardware and/or fees."

15 MS. CHARLESWORTH: That is sort of a
16 different issue -- I mean that is one issue, sort of
17 you may need to buy extras and subscribe to extras,
18 but the other issue is the games that just simply
19 require some kind of server authentication or
20 something simply to play them where you're not a
21 subscriber to anything extra. It's just the game is
22 no longer playable or playable in a way that you
23 understand it should be if there is no longer
24 support from the server.

25 So that question there is when people

1 purchase a game like that, do they know that it may
2 not last forever?

3 MR. FRANKEL: I just don't know, but what
4 I do know is that what I think you are describing is
5 games where you need server authentication to play
6 in single-player mode.

7 MS. CHARLESWORTH: It could be.

8 MS. TONSAGER: If I can jump in, of the
9 hundreds of games that are included in the exhibits,
10 I am not aware of any of them that require an
11 authentication check for single-player mode.

12 There has been an allusion to NBA 2K14.
13 You can play that game in single-player mode without
14 a server check.

15 MR. DAMLE: They identified four -- in
16 their list of a hundred, there were four they
17 identified; is that right?

18 MR. Stoltz: That is correct, four for
19 2014.

20 MS. TONSAGER: Was that SimCity and
21 Titanfall?

22 MR. Stoltz: No, those are additional.

23 MS. TONSAGER: Which one of the four?

24 MR. FRANKEL: My point is we are talking
25 about an extremely small number of games where this

1 issue comes up at all playing in single-player mode.

2 MS. CHARLESWORTH: What about matchmaking
3 mode, multiplayer where you have a matchmaking
4 server? There is different -- I confess I don't
5 play a lot of video games.

6 There is single-player mode which usually
7 you are saying doesn't require authentication,
8 although I think was one game identified where the
9 server was pinging you because it was supplying some
10 kind of information periodically to allow you to
11 play the game?

12 MR. Stoltz: I think that was SimCity.

13 MS. CHARLESWORTH: Maybe it was.

14 MR. FRANKEL: The SimCity server has not
15 been shut down.

16 MS. CHARLESWORTH: So I guess the question
17 is are there -- what we're trying to figure out is
18 what is really at issue here and what requires
19 ongoing server support.

20 And you are saying that it's a very small
21 universe of things that people can't do with video
22 games, you know, it's a result of the shutdown of
23 servers. And these guys are saying it's a big, huge
24 problem.

25 So we have to sort out basically the

1 evidence here.

2 MR. FRANKEL: Let me address that right
3 now.

4 And again, my second point which is
5 marketplace alternatives to the activities they
6 claim they want to engage in.

7 As we just discussed, almost always the
8 user can continue to play a single-player game after
9 service support has ended.

10 As to the others, as I think the panel
11 alluded to, the Office, players who want to play in
12 multiplayer mode can almost always keep doing so in
13 multiplayer mode using multiple controls on a single
14 console or some kind of hook-up or a LAN.

15 There may be circumstances where that
16 doesn't work but there are many cases that it does.

17 And now we get to a very difficult set of
18 issues raised by the comments here today from the
19 proponents, which is unless they are suggesting that
20 the gaming community -- not the gaming community --
21 a small number of gamers should be able to recreate
22 content that was stored on the servers -- and we
23 don't think that could be what they're suggesting
24 because that would create infringing copies or
25 derivative work -- the impact on game play is going

1 to be minimal.

2 There were a lot of frankly moving comments
3 about history of games and gaming communities, but
4 those histories and the forums they were referring
5 to reside on the servers. And post server
6 shutdowns, they are not going to be recreated by any
7 replacement third party server. They're not going
8 to -- I don't think that they will be and I don't
9 think they under copyright law could be.

10 MR. CHENEY: Are those erased when the
11 server is shut down? Is that content gone, in other
12 words, when the server is shut down?

13 MR. FRANKEL: I don't know. Actually, I
14 don't think we know.

15 It's not on the users' computers. So
16 they're not going to have it, anyway.

17 MR. CHENEY: They are not going to have
18 access to do it from theirs, but is there
19 preservation of that information at the server
20 level?

21 MS. ALBERT: I'm sorry. Can I just
22 clarify.

23 So when you were talking about like the
24 history and the like the communities in these games,
25 we are talking about like literal people and game

1 play practices. We are not talking about catalogs.

2 Like if you think about what multiplayer
3 play is, it's a collections of things that people do
4 in games against each other. And that knowledge
5 doesn't get deleted when someone takes down the
6 official server. People still remember how to play
7 whether the servers are operating or no.

8 I think the content on the server and what
9 we're actually talking about is like -- the content
10 on the server is irrelevant. The history is the
11 ability to play and understand the mechanics that
12 make the games what they are.

13 MR. Stoltz: And at the appropriate time, I
14 would like to offer a clarification to our exclusion
15 from the class massively multiplayer games and the
16 location of stored content.

17 MS. CHARLESWORTH: Why don't you just do
18 that now.

19 And then I want to hear from Mr. Gholami
20 because it you sounds like he has something to say.

21 MR. Stoltz: So our class as proposed
22 excluded what are called massively multiplayer
23 online games.

24 And the reason for that was essentially to
25 streamline the Office's inquiry and to create a

1 well-defined and administrable class.

2 In the industry and among players and with
3 the enthusiasts who wish to take advantage of this
4 proposal, it is understood what an MMO is versus a
5 multiplayer game. That is understood.

6 MS. CHARLESWORTH: And you can explain it
7 to me.

8 MR. Stoltz: I can do better, and that is
9 offer a realistic distinction, which is one that can
10 be easily administered for the purposes of an
11 exemption. And it is this -- and I think it
12 addresses some of ESA's concerns.

13 A game that would be covered by this
14 proposed exemption is a game that can be restored
15 using a lawfully-owned copy and analysis of server
16 traffic but without a copy of the server software.

17 There are some games for which that
18 definition will not hold. They are, for the most
19 part, what people in the industry and fans and
20 consumers would describe as massively multiplayer
21 games.

22 The overlap is not perfect there, but the
23 purpose is to define a class that can be restored to
24 its prior condition of playability without copying
25 code that once existed on a server.

1 MR. RUWE: Would the code that needs to be
2 on the replacement server be a derivative work of
3 the manufacturer's?

4 MS. CHARLESWORTH: Or a copy.

5 MR. Stoltz: Well, it's one that can be
6 made without access. And something made without
7 access is not a copy.

8 MS. CHARLESWORTH: Well, it's a copy but
9 not necessarily infringing.

10 Mr. Gholami, what are your views on all of
11 this? Can you explain the difference between
12 multiplayer and massively multiplayer?

13 MR. GHOLAMI: What I wanted to do is kind
14 of address the first part, which is the value of
15 history. It's not about the exact history of what
16 went on while people were playing the game at its
17 peak, but the kind of impact of the game mechanics
18 and the game systems that were in play. Game
19 systems is like the stuff happening in the game,
20 itself, not the game console.

21 It had an impact on the overall lineage of
22 a lot of these games and how they impacted games
23 that came after them.

24 And in terms of the forums, I am mostly
25 talking about forums that are fan made. These are

1 not forms hosted by the developer/publishers. They
2 are ones they have built on their own and now
3 they're communicating through those channels. So
4 I'm not saying that they're communicating
5 specifically through the forums that the developer
6 or publisher established.

7 And part of -- I also wanted to address a
8 question you had earlier about the value of
9 preserving multiplayer components of games.

10 You originally asked Mr. Stoltz about what
11 is lost as a result of essentially giving up the
12 multiplayer component. And for some games, that is
13 the entire game.

14 There is a title that is called Mystic
15 Knights. It was released in October of 2005 on the
16 PlayStation 2 and it is an entirely multiplayer-only
17 game. There is nothing running like on the server
18 side except essentially connecting those players
19 together.

20 And there is -- if you look online, there
21 are no videos of it. There are some photographs of
22 it, so there is some idea that exists. And you can
23 buy a copy of it right now if you want to, fully
24 legitimately, but there is no way to actually play
25 it. There is no way to make a record of it.

1 In preservationist terms, it is a lost
2 game and there is no way to bring that game back.

3 And also, there was a question earlier
4 about modifying games. At least with something like
5 Game Ranger, it's not modifying the game, itself.

6 A lot of times, it is essentially tricking
7 the game into thinking it's connected to the
8 official servers when it's going elsewhere. So it's
9 not a modification to the core game.

10 And this Game Ranger offers paid services
11 for developers, but these games in particular, like
12 the ones I mentioned, are games by -- to my
13 knowledge, they are not getting any kind of money
14 from any of the publishers that were involved in the
15 release of these games originally.

16 MS. CHARLESWORTH: Thank you.

17 Ms. Albert, did you have further
18 commentary on this general issue?

19 MS. ALBERT: Just one quick thing about
20 trying to distinguish between like preservation and
21 people continuing to play. And I think this is just
22 an important point of what the overall way that the
23 exemption fits together, is that I think the -- the
24 academics that we have spoken to, all of the folks
25 that are in the industry and sort of work on this

1 specific preservational issue feel very strongly
2 that preserving games means keeping them playable.
3 It doesn't mean just video. It doesn't mean like
4 keeping screen shots. In order to really understand
5 what the game meant, you need to be able to go in
6 and play it.

7 And I think TL Taylor's original testimony
8 on our exemption speaks to that specifically.

9 And I think for games that are
10 multiplayer, like my colleague has been discussing,
11 like that means playing multiplayer. And the
12 line -- what you find in the games community is that
13 often the community is the one that are keeping the
14 service logs and are the one on the front lines
15 preserving copies.

16 And drawing a distinction what it means to
17 preserve, what it means for preservational purposes,
18 like there are folks who play tons and tons of Sega
19 Dreamcast games. I have been racking my brain
20 trying to think of when Dreamcast was released and
21 it was a long time ago, maybe like ten or fifteen
22 years. There are newer, better consoles, but people
23 love the Sega Dreamcast so much, that they keep
24 playing. They create new games and do this.

25 And I would like to think they are

1 preserving at the same time that they are playing
2 multiplayer online. So I think that it may seem
3 convenient to distinguish these two characteristics
4 to say that there is something really different
5 going on, but by keeping these communities alive and
6 allowing people to play online, even at specific
7 times, even if the community is so small that
8 everyone gets together at 6:00 on Wednesday and
9 plays it like they used to ten years ago, that is
10 really preserving a form of game play and a history
11 that is important.

12 MS. CHARLESWORTH: Food for thought coming
13 from this side.

14 MR. WILLIAMS: Very briefly, just on the
15 question of the disclosures and what is communicated
16 to the consumer, I do as part of my practice draft
17 website terms of service and I have done terms of
18 service for video games. It's not any of the games
19 that were raised in the comments, but I know that in
20 the terms that I have drafted, there is full
21 disclosure that online support of a website where a
22 game might have to be discontinued, that is an
23 expectation that is disclosed going in.

24 So I can't speak to the specific cases
25 here, but I would be surprised if that is not

1 included in the terms of service.

2 MS. CHARLESWORTH: Mr. Frankel.

3 MR. FRANKEL: I notice at least one of the
4 games that they list in the server shutdown is the
5 Ages of Empires online from Microsoft. That is, as
6 I understand, a massive multiplayer game.

7 But I think Ms. Albert's comments lead me
8 back to where I was, which is the next point I
9 wanted to make, which is that there is this focus on
10 preservation and research, but as we just heard,
11 preservation and research in this context is sort of
12 a spectrum that extends out to being able to play
13 the games.

14 And I think one thing that is unclear is:
15 Play them to what extent? Is single-player mode
16 enough? Is local multiplayer enough or does it have
17 to be something more?

18 And I think that is problematic because it
19 reflects sort of basically the commercial nature of
20 kind of preservation that is part of what is asked
21 for here. And that's, I think, reflected in the
22 fact that eBay put in reply comments on their
23 trading in the games, but that said, ESA agrees that
24 the preservation and research, at least as we
25 understand it, are important.

1 And it's why the ESA and its members have
2 made them a priority and cooperated and supported
3 research and preservation efforts and will continue
4 to do so.

5 And I won't go through all these examples,
6 but these are just some examples of relatively
7 recent activities of ESA and members to preserve and
8 provide access to older games.

9 I think Mr. Diamante's comments dovetail
10 well with this, because what he said was that these
11 games are being preserved and that Sony is doing
12 them, and as far as he was aware, Sony had never
13 declined to cooperate in terms of allowing the
14 preservation of games.

15 And I don't think we're aware of any
16 instances in which manufacturers have not wanted
17 their games to be preserved.

18 MS. SMITH: I am wondering if ESA members
19 have ever granted or denied permission to make a
20 replacement server outside of a museum or academic
21 institution.

22 MR. FRANKEL: We could try to get you the
23 specifics, but this is Mr. Cory Fox from ESA, and he
24 thinks it's been asked for and agreed to.

25 MR. DAMLE: So one of questions I asked

1 this side earlier was whether there is sort of a
2 licensing environment for continued hosting of Game
3 Ranger and I think it was mentioned there are
4 companies out there that are seeking licenses to
5 allow matchmaking servers, authentication servers,
6 to continue to be up if the original publishers
7 decide they don't want to be responsible for
8 maintaining --

9 MS. CHARLESWORTH: Other than the one-offs
10 we just mentioned. We are obviously aware of Game
11 Ranger. It is not licensed by companies here, but
12 as far as we're aware, no one has sought to take
13 action against them.

14 MS. TONSAGER: My understanding is that
15 GameSpy -- the service that was alluded to before,
16 that shut down for entirely different, I guess,
17 economic reasons because it didn't have money. I
18 don't know if it was licensed specifically, but
19 there was no -- industry supported it.

20 MR. FRANKEL: The summation on this is
21 simply there is not substantial adverse impact
22 shown, that there is inconvenience that some, not
23 all uses, are permitted, but that is not sufficient
24 to justify the exemption.

25 The last point I will make is simply that

1 the kind of access control circumvention that is
2 being discussed leads to more infringing activity in
3 the market for copyrighted works.

4 I know the proponents say that that won't
5 happen. In the past, the Copyright Office has
6 rejected that reasoning because it doesn't address
7 the real-world impact of the proposed exemption and
8 that's what applies here.

9 And I will just make two points on this.

10 One is if you create these -- if you hack
11 the access controls to allow these games -- put
12 aside the consoles -- to allow these games to work
13 with a third-party server, those third-party servers
14 will work with any copy of the game, including an
15 infringing copy. So you are basically creating a
16 market for infringing copies of the game when you
17 set up a third-party server that is premised on
18 circumvention of the access controls that are what
19 control the communication between the legitimate
20 copy of the game and the servers.

21 So that is just a real-world impact of
22 such third-party servers as to console games.

23 I won't go on except for the fact, as
24 Mr. Damle pointed out, you're going to have a hacked
25 console. And that is all of the issues that we have

1 talked about in connection with Class 19.

2 Finally, I will just say that as
3 Ms. Charlesworth suggested at the beginning of the
4 session, that the notion advanced by ESA that these
5 games are abandoned and that, quote, "the copyright
6 holders' actual interest in continued sale of the
7 game has ended" is something that the game publishers
8 and the content-maker ESA take great issue with. It
9 is incorrect.

10 And they only further -- those kind of
11 claims only further the public's misunderstanding of
12 the purpose of these kinds of rulemaking efforts and
13 of any resulting exemptions.

14 And the Office may have seen this, but
15 this is one example, a recent article in the Houston
16 Press which said that the Copyright Office was
17 exploring making some video games public domain with
18 respect to this proceeding.

19 And I think if you read this article, you
20 will see exactly the kind of misunderstandings that
21 are created by even suggesting these games have been
22 abandoned.

23 And the fact is, in the real world, video
24 game publishers regularly re-purpose and
25 re-introduce their video game titles often years

1 after they're originally released.

2 Nintendo now sells a number of classic
3 video game titles from the 1980's, including Super
4 Mario Bros. II, Pacman, Donkey Kong Jr. and
5 Excitebike, for online download through Nintendo and
6 the Nintendo 3DS virtual consoles.

7 And granted, those games are outside the
8 requested exemption. They were developed before
9 online functionality, but they are important
10 examples of how video game publishers continue to
11 create markets for their fully copyrighted works.

12 And this issue is obviously of great
13 importance to ESA and its members.

14 Thank you for your time.

15 And if you want to add.

16 MS. TONSAGER: Yeah, I am just here as the
17 game enthusiast, myself, and I am very excited to be
18 on this panel with the gentleman who is involved
19 with Journey because that is a really fantastic
20 game, but I think just to put a pin on something
21 that we're kind of dancing around here, is just how
22 slippery some of the different games are here that
23 we're talking about today.

24 I think Mr. Gholami gave the example of
25 Chromehounds, which is a game featured here. Some

1 interactive and there are these very robust
2 communities -- but those are all very modern games.

3 If you take a look at the hundreds of
4 games that are listed in the proponents' comments, a
5 number of them are very old games where we didn't
6 have this core, online multiplayer functionality,
7 and in fact, single-player mode was the core of game
8 play functionality and you had local multiplayer, as
9 well.

10 So I think at the end of the day when you
11 are faced with a question of what are the adverse
12 effects and are they substantial, for the vast, vast
13 majority of the games that have been put into
14 evidence, you have incredibly robust alternatives in
15 single-player and local multiplayer mode.

16 MR. Stoltz: Could I respond?

17 MS. CHARLESWORTH: Mr. Stoltz.

18 MR. Stoltz: So first off, regarding -- I
19 want to emphasize this synergy between volunteer
20 efforts by passionate fans and players and
21 professional researchers, archivists and librarians,
22 because the very important work of preservation and
23 archival depends in the real world and in large part
24 on the volunteer efforts of people who know a game
25 best and who commit many hours of unpaid labor to

1 restoring it and, of course, preserving the physical
2 media.

3 MS. CHARLESWORTH: Can I ask a question.

4 Who are -- how would you define
5 preservationists as opposed to just people who want
6 to keep on playing? In other words, we obviously
7 can talk about museums and MoMA and a bunch of
8 people playing Pong. And there was an installation
9 there the last time I was there. And I am very
10 appreciative that it was there, but that is sort
11 of -- obviously, we all think of museums or maybe
12 the Library of Congress, whatever, as
13 preservationists, but you seem to be suggesting a
14 broader -- something broader than that.

15 And I am curious to know whether there is
16 any line of demarcation between someone you call a
17 preservationist and someone who just again wants to
18 keep playing the game.

19 MR. Stoltz: Again, I don't think there is
20 a strong line of demarcation because there was a
21 synergy.

22 And I refer you to -- and this was a
23 company not in the context of this rulemaking. It
24 was from several years back when David Gibson at the
25 Library of Congress said,

1 "I personally think that the modeling
2 community has done tremendous work in
3 regards to software preservation. And I
4 truly believe the public institutions will
5 only benefit from employing some of the
6 practices undertaken by the modeling and
7 emulation community as we develop
8 preservation and access strategies."

9 MS. CHARLESWORTH: But that is -- I mean I
10 guess -- like, for example, let's say we were
11 inclined to grant an exemption that really was more
12 focused on the preservation issue as opposed to
13 general continuing play.

14 How would you define -- is there a way --
15 how would you draw that line, if you could? Do you
16 have any ideas on that? I would be interested.

17 In other words, I think a lot of people --
18 even we heard ESA say they're supportive of
19 preservation efforts. There is interest in
20 preserving video games. Mr. Diamante and
21 Mr. Gholami both made very moving speeches about
22 that.

23 And setting aside this whole other range
24 of things that are being discussed here, but on the
25 preservation issue, if we were going to write an

1 exemption on preservation, how would you define
2 those people who would be able to take advantage of
3 that exemption?

4 MR. Stoltz: I would simply define it as
5 returning a lawfully possessed copy of a game to its
6 fully functional state.

7 MS. CHARLESWORTH: You wouldn't tie it to
8 the purposes of the person who is doing that or
9 whether they were sharing it -- whether they were
10 making it available to the public or putting it in a
11 carefully archived place or Section 108 of the
12 Copyright Act.

13 None of those -- I mean usually when we
14 think of preservation, we think of that as distinct
15 from keeping a copy of the work. So that is -- I
16 mean I am picking on you, but if other people have
17 thoughts on that, I would be curious to know.

18 MR. FRANKEL: I think that is an important
19 point, that as defined by the proponents here,
20 preservation is equivalent to being able to play by
21 those who wish and that is not normally what we mean
22 by preservation.

23 Even if we speak of a piece of performance
24 art that is preserved for the public in a museum, it
25 is preserved in some medium and available. It may

1 be a performance art that involves some
2 interactivity, but it is there for people to visit,
3 to preserve. It's not a commodity. And that, I
4 think, is a problem.

5 MS. TONSAGER: And also, there seems to be
6 a blurring between the concept of preservation and
7 just creating a backup copy, which this office has
8 refused to adopt an exemption for backup copies on a
9 number of occasions.

10 And in fact, in this case, it's not just
11 creating a backup copy. It's going much, much
12 further by modifying the code and setting up these
13 additional servers so that you are creating
14 basically a different version of the work.

15 So I think it is really, really important
16 that you are appropriately crafting that class
17 because especially if it's not crafted
18 appropriately, you end up with articles like this
19 where people are confused about --

20 MS. CHARLESWORTH: It doesn't matter what
21 we do, we get articles like that.

22 MR. Stoltz: I think that is an important
23 point. There are probably an equal number of
24 articles that express the view that one may not
25 transmit a description of a sporting event without

1 infringing copyright. That is, of course, false.

2 I don't think it is the job of this
3 rulemaking proceeding to educate the entire public
4 on the finer points of copyright law, but rather
5 simply to define workable classes, but I wanted to
6 respond to this notion of preservation in
7 particular.

8 This isn't -- we're talking about an
9 interactive medium, a medium that involves in most
10 of the use cases that were discussed interaction
11 among people. So preservation of playability is the
12 issue.

13 MS. CHARLESWORTH: People are playing the
14 games at MoMA.

15 MR. Stoltz: Yes.

16 MS. CHARLESWORTH: I understand that Pong
17 is not exactly what -- the least sophisticated, but
18 there were other games there, as well, that were
19 being played, but that was in a museum.

20 MR. DAMLE: And they're playing online
21 through the Internet Archive and they're playing at
22 home. And these are all species of preservation of
23 the experience of playing. And there are synergies
24 between amateur efforts and professional efforts.
25 They depend on one another.

1 MS. CHARLESWORTH: There are, but they
2 could be connected to some sort of institution.

3 You are sticking to your guns and saying
4 you want a really broad -- first of all, we are very
5 open minded and this is not suggesting necessarily
6 any particular direction we're going in, but I mean
7 it did strike me and all of us when we read your
8 papers that there were sort of two different things
9 going on. One was sort of almost museum-style
10 preservation and that interest which traditionally
11 has been viewed as somewhat separate from the
12 ability for everyone to have access to a work in an
13 unconstrained way. That is why I am pushing on this
14 point.

15 MR. Stoltz: Sure.

16 On that point, I think it's incorrect to
17 consider the second of those two categories a more
18 personal sort of preservation as a commercial act
19 because there is no multiplication of copies. This
20 is a person for whom the commercial transaction has
21 occurred. The person owns a copy of the game.

22 MS. CHARLESWORTH: I want to --
23 Mr. Diamante has been extremely patient. I am sorry
24 because I have tunnel vision sometimes. So please,
25 feel free to comment.

1 MR. DIAMANTE: Just a really brief comment
2 on preservation -- on what is required for
3 preservation of games.

4 Preservation of game assets is not the
5 same as preservation of the game.

6 Much like there are many ballets that are
7 actually lost because we have the scores but we have
8 no idea of the translation of the choreographies for
9 those ballets. So the dance is ultimately lost.

10 When playing video games, there are many
11 different things that are happening. And speaking
12 as a developer, often the intent that is from the
13 developer is not actually fully conceived by the
14 developer but rather found along the way.

15 And many video games actually have
16 identities that are rather outside of what the
17 developer was initially thinking on day one of the
18 production. What the game actually is, is rather
19 different from what was set out.

20 And seeing the interaction of players and
21 systems together can create totally different
22 things. It can indoctrinate people to certain
23 morals, let's say.

24 I am at thatgamecompany. We made a game
25 called Journey and the actual system that is defined

1 in Journey is really quite simple. All the game
2 actually dictates is you are a human-like character
3 and there is a mountain over there and just walk to
4 it. That is it.

5 And because of that, actually many people
6 have said that this is really not much of a game, is
7 it, but the context of everything, the systems, the
8 various small, finite-state machines which exist in
9 the game interacting with each other, and
10 ultimately, interacting with two players on opposite
11 sides of a network connection, they turn the game
12 into something else.

13 And that game is what I would hope is
14 worth preserving as opposed to the bits and bytes
15 that actually comprise the game's assets.

16 The game of Journey, ultimately, and what
17 make people connect with that game is the fact that
18 people recognize other people for what they can be
19 and they recognize the potential of the human
20 connection.

21 As opposed to simply just going on a
22 journey and getting to the credit sequence at the
23 very end of the game, it teaches people to actually
24 be better than who they are. And this is not
25 dictated anywhere in the game system.

1 MS. CHARLESWORTH: Now, earlier, very
2 early on, you mentioned that a museum was looking
3 potentially to -- did you say MoMA had actually
4 asked?

5 MR. DIAMANTE: There have been some
6 museums that have asked us about it. I do remember
7 some -- I don't remember all the ones that we didn't
8 follow up on. I remember there is a church --
9 actually, there was a church in England that
10 actually successfully got some communication with
11 Sony.

12 All the communication regarding Journey --
13 actually, when it comes to us as a developer,
14 because the game is owned by Sony, we forward that
15 to Sony.

16 MS. CHARLESWORTH: And I understand that
17 and I appreciate your -- and you had a couple of
18 other games that you said had been preserved like
19 the Smithsonian example.

20 Is that playable at the Smithsonian?

21 MR. DIAMANTE: Yes, it is playable at the
22 Smithsonian.

23 MS. CHARLESWORTH: So the point -- this is
24 actually what I was driving at. It sounds to me
25 like it's possible for museums to preserve games in

1 playable states. Is that not the case?

2 MR. DIAMANTE: Certainly with certain
3 games. Most of the games that are preserved are
4 older games with less sophisticated online
5 functionality. Many modern games have much more
6 sophisticated functionality.

7 Journey is relatively simple in what is
8 required in terms of matchmaking, multiplayer. It's
9 multiplayer but it only requires two people at any
10 given time.

11 Because the matchmaking happens via Sony
12 and their PlayStation network system, simply having
13 a copy of Journey in an exhibit in a museum is not
14 enough and neither is having two copies of that game
15 sitting side by side in that same museum. That
16 would not actually reflect the experience of
17 Journey, unfortunately.

18 MS. CHARLESWORTH: Would you need the
19 matchmaking server? What else would you need so two
20 players could play Journey in the museum?

21 MS. ALBERT: I am so sorry. Can I just
22 clarify something about Journey?

23 When you start playing Journey, you don't
24 know that it's a multiplayer game -- or you don't
25 know that there is going to be another player you

1 are interacting with, that the other person is
2 human.

3 MR. DIAMANTE: Many people --

4 MS. ALBERT: I just spoiled the game. I
5 am sorry.

6 If you saw there were like two boxes
7 sitting next to each other and they were both
8 playing Journey, the trick of the game is you don't
9 know that like there is another human in the game
10 playing and that would be totally ruined and that is
11 exactly why --

12 MS. CHARLESWORTH: No, why couldn't you
13 have that in a museum, actually, where two people
14 walked up -- I am trying to -- I am struggling here
15 because -- I mean I am truly struggling to
16 understand if you can replicate this stuff outside
17 of the museum, why can't you replicate it in a
18 museum. I am not getting this.

19 MR. GHOLAMI: Part of it is the
20 accessibility of it in the sense that a game like
21 Journey is two hours long. And for us that are
22 accustomed to movies, that isn't very long, but this
23 is a multiplayer session that is essentially two
24 hours.

25 And it's hard for someone sitting in a

1 museum to sit for two hours. And also you have
2 difficulty in terms of being able to present it
3 in that duration of time is incredibly difficult.

4 MS. CHARLESWORTH: Again, I think we're --
5 I don't want to draw too much longer on this point,
6 but I could imagine an archive where people could
7 sign up and have a schedule and come play the game.

8 It's an important question because as I
9 said, preservation use is differently thought of
10 than general, all-purpose use.

11 Is there any response to that?

12 MR. FRANKEL: I will say it makes me think
13 of a museum in San Francisco where there are
14 exhibits that you don't realize there is someone
15 else in another part of the same place who is
16 actually interacting -- you are interacting with,
17 but I think this discussion underscores the
18 difficulty of extending the notion of preservation
19 to what the proponents are talking about, which
20 really is simply use, access and distribution.

21 MS. CHARLESWORTH: Mr. Gholami.

22 MR. GHOLAMI: I wanted to go, I guess,
23 more broadly back to some points made about the
24 value of multiplayer. And this multiplayer is part
25 of games going back to essentially when maybe

1 Internet access was publicly accessible for even
2 going back to the original Dune or games that are
3 from the 90's. These are games where the
4 multiplayer component was a huge defined part of it.
5 They spawned these entire communities, literally
6 conventions, that were just focused on that.

7 And so I think it's not entirely accurate
8 to say that single-player is the only important or
9 the major important part of some of these games
10 where, in fact, I think the opposite is true.

11 And in addition to that, Nintendo does
12 sell a lot of older titles. In fact, they do sell
13 Mario Bros. on the Nintendo. That is an instance of
14 a game that the online functionality is included in
15 the original DS version. It still shows a button to
16 connect online to play and you choose it and it says
17 you can't connect.

18 So they do essentially try to sell games
19 and then not have the functionality that was
20 included with the base game originally.

21 MS. CHARLESWORTH: Mr. Stoltz.

22 MR. Stoltz: So a few points, but
23 particularly about this notion of licensing and
24 about the impediments caused to museum archives and
25 educational institutions on why the ban on

1 circumvention.

2 I think it's important to note that a lot
3 of the games -- at least some of the games we have
4 discussed -- many of the games in need of
5 preservation are essentially orphaned works.

6 So regardless of ESA members' commendable
7 efforts to support preservation, often those who
8 must give permission cannot be located. And I think
9 this is a pretty common occurrence.

10 About the value independently of
11 preservation of personal use both in synergy with
12 professional preservation but also as an adverse
13 impact on lawful use in its own right, is that when
14 the companies stop making playback devices, there
15 is -- to use an analogy here, there is nothing to
16 stop someone from building a new 8-track player to
17 keep enjoying their old 70's cassette.

18 And the fact that these particular works
19 of art require authentication or server
20 communication shouldn't make them lose their
21 expressive and artistic functions because the
22 original manufacturer of 8-track players is no
23 longer manufacturing them.

24 And then also to go back to something that
25 Mr. Frankel said earlier -- and I want to emphasize

1 that we are asking for an exemption that would cover
2 the preservation of games on consoles that would --
3 that would require in some sense jailbreaking.

4 And I want to draw an example there -- I
5 want to draw an analogy there to the exemptions that
6 have been granted for video clips.

7 And I know we will be discussing those in
8 DC next week, but there, as here, circumvention is a
9 necessary step in the process of recognized lawful
10 use. And it is also a necessary step in certain
11 forms of infringement, although usually not the only
12 or easiest method of infringement.

13 MS. CHARLESWORTH: But a more relevant and
14 closer example is last year, we denied an exemption
15 for circumvention of consoles because of the strong
16 showing that it's related to piracy.

17 So I mean that is what they're talking
18 about when they're saying they're concerned about
19 allowing an exemption for this. They're concerned
20 that when you circumvent a console, you can play any
21 pirated video game.

22 And so that is why -- which is an
23 important concern, because part of this is to
24 balance the interest in protecting creative works.

25 MR. Stoltz: Absolutely.

1 I would submit that the opponents of this
2 proposal have not demonstrated any causal
3 relationship on this record.

4 So speaking again of real-world impact, we
5 have provided many examples of both professional and
6 volunteer efforts to preserve the functionality of
7 lawfully-owned copies.

8 What ESA has put on the record is a series
9 of screen shots taken from somewhere on the Internet
10 where unidentified people are discussing the
11 infringement of video games.

12 We will submit and concede that
13 infringement occurs, but the important point for
14 this rulemaking is whether granting an exemption
15 will cause a material increase in infringement. And
16 the evidence on this record provides not a hint of
17 that.

18 Rather, the evidence on this record shows
19 that the people who are engaging in this
20 particular -- in the work that would be covered by
21 this exemption are people with an incredible amount
22 of vested interest in the thriving of a particular
23 game, the very people who would not want to see it
24 diminished by widespread infringement and by people
25 with institutional constraints.

1 MS. CHARLESWORTH: I appreciate that. I
2 think what I am struggling with here is we have
3 heard a lot of concerns, important concerns, raised
4 by the other side. And you have raised important
5 issues, as well.

6 So we are trying to wade through this and
7 for purposes of this proceeding, figure out what is
8 non-infringing use, you know, but you just keep sort
9 of saying we want the really broad, broad exemption
10 even though there are concerns about hacking
11 consoles.

12 The question is what you are asking for,
13 can it be in any way narrowed to address some of the
14 concerns of the video game makers. And that is part
15 of this hearing, is to explore that just so we can
16 then take that back and sort of understand what your
17 best position is.

18 So if what your position is you really
19 want the broad and you are asking to circumvent
20 consoles and everything, we will take that back and
21 certainly think about it carefully, but I just want
22 to make sure that I understand that you don't see
23 any way to narrow this in terms of people who do
24 this or the type of circumvention or any of that
25 other than a persistent worlds issue which you were

1 clear about earlier.

2 MR. Stoltz: I wouldn't say that.

3 If the Office were to grant an exemption
4 that is, say, limited to professionals or limited in
5 some sense by the role of the individuals involved,
6 that would be an improvement over the status quo.

7 What I think the Office needs to be
8 careful with is not to grant an exemption that is so
9 narrow as to be useless. And that is -- for
10 example, I know the individuals involved in video
11 game preservation at the Library of Congress. My
12 understanding is there are four of them, and each of
13 them is only spending about a quarter of their time
14 on it.

15 It's at this point and on this record
16 uncontradicted. It not sustainable in this
17 three-year period without at least the ability of
18 volunteers to participate at some level. That is my
19 concern.

20 MS. CHARLESWORTH: I thank you and I
21 appreciate your response to my comment.

22 Ms. Albert.

23 MS. ALBERT: Sorry for interrupting
24 earlier. I just feel so passionate about Journey, I
25 had to jump in.

1 I do want to talk very briefly about some
2 of the alternatives to sort of circumvention that
3 were raised in the course of the discussion as a way
4 of just addressing like what those look like in
5 reality for the folks on the ground. Again, with
6 the focus on the real world communities and for --
7 my colleague has already talked a little about
8 licensing, but I have been talking to folks who
9 represent video game communities that have sought
10 licensing for servers or licensing for versions of
11 games.

12 Often what happens, especially if the game
13 is older, is that sort of the original developer has
14 been bought by someone who has not -- it will be
15 impossible for them to trace the intellectual
16 property well enough to sign it over to these like
17 enthusiasts. They don't even feel comfortable
18 signing over permission -- I don't know if this is
19 exactly the orphaned works problem you were talking
20 about a little bit earlier -- or that it will cost
21 prohibitive amounts of money for the game
22 communities to sort of take up the mantel if they go
23 through the licensing route.

24 And I am talking about communities that
25 have already sunk like hundreds of hours and

1 thousands of dollars into these games, but when it
2 comes to bills of a hundred thousand dollars in
3 order to track down the rights and get them, that is
4 not sustainable for a community.

5 The second alternative --

6 MS. CHARLESWORTH: Are you talking about
7 copyrights or circumvention rights? Because the
8 copyright -- this isn't really -- we can't really
9 solve the orphaned work problem here, unfortunately.
10 If I could, I would.

11 We're really talking about where there is
12 a clear, non-infringing use, whether you can
13 circumvent.

14 Sometimes you can solve that with a
15 license because along with the license comes the
16 authorization, obviously, to circumvent.

17 MS. ALBERT: These are folks who are
18 literally looking for the okay from the video game
19 company to run the server.

20 MS. CHARLESWORTH: Do you have actual
21 examples of that?

22 MS. ALBERT: I actually cannot provide you
23 with the example because they asked me not to say
24 who it was because they were concerned about the
25 confidentiality of the information. I'm sorry.

1 MS. CHARLESWORTH: But just with the
2 example you can't provide, you are saying it is
3 someone who approached a video game company and
4 couldn't afford a license?

5 MS. ALBERT: Yes, that's correct.

6 So the other two alternatives I want to
7 talk about are re-releases which we sort of
8 discussed in the Nintendo context. And I think that
9 often -- re-releases, first of all, are not
10 necessarily always a substitute for the original
11 game. And I want to speak about that specifically
12 and I will use an example from the movies.

13 So if anyone has seen an original cut of
14 "Stars Wars" versus an older cut of "Star Wars," we
15 all know that Han shot first and that sometimes
16 directors make changes to movies or video games that
17 they feel better reflect their directorial vision
18 after the fact.

19 So often re-releases of a game will
20 actually not necessarily always take in the same
21 elements or be the same for the community that it
22 began with. So even if the games do get
23 re-released -- and that is super super rare --
24 sometimes they are not that actually effective a
25 substitute for the original games.

1 The last alternative I want to talk about
2 a little bit is LAN and local play.

3 And I think part of what is really
4 important here to note is that these communities are
5 definitely smaller than the original communities
6 online. And that is why, as my colleague mentioned,
7 we have to -- they often have to schedule times to
8 play the games.

9 And when you only allow LAN play or local
10 play, you basically limit the population of people
11 playing these games to the folks who can get in the
12 same room together. And when your player population
13 is already much smaller than it was at launch --
14 like the number of people who may live in a city and
15 want to play that game may not be enough to sustain
16 the same kind of thing that you wanted to originally
17 play.

18 So LAN functionality in most circumstances
19 is actually not really a good substitute for online
20 multiplayers just because servers and cities is
21 often what introduces strategy, what creates sort
22 of these generative game environments we have been
23 discussing.

24 MS. TONSAGER: If I could just very
25 briefly respond to that to two points.

1 Just the idea that it has to be a good or
2 perfect substitute, that is not the standard. It's
3 whether or not -- if these are just incidental or
4 de minimus or inconveniences, the Copyright Office
5 made clear that that is not a reason to grant an
6 exemption.

7 And just to be crystal, crystal clear for
8 purposes of the record, the word "orphaned works"
9 has been raised a couple of times. I think it's
10 obvious, but all of the examples listed in the
11 proponents comments, they identify the publisher.
12 We're not talking about orphaned works here. These
13 are clearly games where the copyright owners are
14 readily identified and are available.

15 MS. CHARLESWORTH: Thank you.

16 Mr. Williams.

17 MR. WILLIAMS: I was going to second that
18 these works are neither abandoned nor orphaned. And
19 I don't see that as actually analagous at all to
20 creating a new 8-track player if no one can find an
21 8-track player.

22 To me, it's much more similar to if you
23 release a film in theaters in 3D and then you move
24 into the VHS market after that and no one can see
25 the 3D versions. I think that was the case on

1 "Nightmare on Elm Street 3." It was in 3D when I
2 was a kid, and you see it in the theater and it's in
3 3D and then you have a period of time when you don't
4 see it in 3D anymore, but now I think at E Street in
5 Washington, they have a midnight showing and
6 sometimes they run the 3D version and the copyright
7 owner never disappeared. They never stopped
8 intending to market that asset. They just had to
9 find the right way to go about doing it.

10 I am sure you can get it in 3D on Blu-ray
11 now and in a variety of ways. So they are not
12 orphans. They're not abandoned. It's just the
13 copyright owners working through the right way to
14 market their work to a consumer base.

15 MS. CHARLESWORTH: We have run a little
16 over. This topic has been very interesting and
17 engaging. And there are a couple of people -- I was
18 going to give brief closing remarks to Mr. Frankel
19 and then Mr. Stoltz and then we will wrap up this
20 panel.

21 MR. FRANKEL: Just very quickly to build
22 on what Mr. Williams said, under Section 1201, not
23 everyone gets to do what they want to do all the
24 time and the question is are there good reasons to
25 change that.

1 And here, they're just -- I don't think
2 the proponents have established a substantial impact
3 on the kind of uses that the statute meant to focus
4 on.

5 We have seen that there are extensive
6 preservation activities in the traditional meaning
7 of that term and exhibition activities and research
8 activities that go on without trouble under the
9 current regime.

10 And the fact that there are other things
11 people would like to do that would be incremental,
12 you can't justify it. And I think the same goes
13 with the size of the community. Other issues that
14 may not quite be optimal to a small number of
15 people, that is not sufficient under the statute to
16 change anything.

17 MS. CHARLESWORTH: Thank you, Mr. Frankel.
18 Mr. Stoltz.

19 MR. Stoltz: The question is whether there
20 is substantial adverse impact on a non-infringing
21 use -- several non-infringing uses in this case.
22 And I think the actual record here demonstrates that
23 amply with the actual testimony by particular people
24 rather than conjecture.

25 So a game console that has been modified

1 to run to preserve the functionality of a copy of a
2 game is no more a device for infringement than a DVR
3 or a desktop computer is a device for infringement.
4 It is a device with multiple uses. One of those
5 uses is covered by the exemption that we have
6 proposed. The others are not.

7 Very quickly about the notion of orphaned
8 works -- and I apologize if we have used a loaded
9 term or a term that raises ESA's concern. That was
10 not my intent.

11 So frankly, let's retire that term and
12 just as well use the term "abandoned." We are here
13 in every one of these panels talking about works
14 under copyright and making lawful uses of those
15 works.

16 So I hope we don't get hung up on
17 terminology, but this notion, to avoid using the
18 words of the difficulty which Mr. Diamante
19 mentioned and I believe Mr. Gholami mentioned -- the
20 real-world difficulty for any of these institutions
21 to secure permissions is very real and serious and
22 it is broader actually than pure copyright
23 permission because there are in many cases multiple
24 parties who may have standing to bring DMCA
25 anti-circumvention claims who are not the rights

1 holders. This is case law. And those folks are not
2 copyright registrants. They're going to be even
3 harder to track down and that is part of the concern
4 for people who want -- who need permission to
5 circumvent.

6 And that is why permission is not an
7 alternative.

8 Thank you very much for your time.

9 MR. DAMLE: I thank you all. It was a
10 very interesting panel with a wide variety of
11 opinions and we're grateful that you are here.

12 We're going to take a break now until --

13 MR. RUWE: I have a question. I do have
14 one question for ESA and this is to clarify
15 something I thought I heard you say earlier.

16 To the extent the proponent seeks to
17 redirect the game to connect to a different network
18 address, is it your position that swapping out or
19 rewriting the designation of an IP address would
20 constitute a derivative work and would that be an
21 infringing derivative work?

22 MS. TONSAGER: It's my understanding that
23 the number of games where you could actually achieve
24 what the proponents want to achieve simply by
25 switching out an IP address is an almost nul set.

1 MS. CHARLESWORTH: But you didn't answer
2 the question.

3 MS. TONSAGER: Fair enough.

4 MS. CHARLESWORTH: That was very lawyerly
5 of you.

6 MR. FRANKEL: But it would allow for the
7 playing by that third party server of counterfeit
8 copies.

9 MS. CHARLESWORTH: We going to try ending
10 this. Sorry. That was my fault.

11 Thank you once again.

12 MR. FRANKEL: Does Mr. Ruwe want to hear
13 from Microsoft's lawyer on that?

14 MS. CHARLESWORTH: Okay. Can you give us
15 your name.

16 AUDIENCE MEMBER: I am Nick Morgan. I am
17 an attorney with the Xbox group at Microsoft.

18 On the Xbox 360 and Xbox consoles, the
19 only way to modify the game code to point it at a
20 different IP address would be to decrypt the code
21 and write a new unencrypted version. So that would
22 be a copy. And then modification, itself, would
23 also be a copy. And the problem, of course, is that
24 modified code will not run on the Xbox because it's
25 been modified. So you would have to jailbreak

1 those.

2 MR. RUWE: Talking about the console and
3 not the derivative work. Earlier, I thought you
4 said it requires the creation of a derivative work
5 and I just thought that is a very simple change --

6 MR. FRANKEL: Now I understand.

7 No, what I was saying -- and I think
8 Mr. Morgan just clarified it -- to the extent for
9 all these games where there is some content on
10 servers for the game content and some on the client
11 side, to recreate that as the proponents have said
12 would require creating a virtual work because you
13 would essentially somehow be trying to recreate what
14 was on the server and add it to the game. That was
15 different from the encryption.

16 MR. Stoltz: And again, if the restoration
17 would require the copying of copyrightable material
18 that was hosted on the server, we would exclude that
19 from the class.

20 MR. RUWE: That's what I understood to be
21 the case.

22 MS. CHARLESWORTH: Take three. We're
23 really ending it now. Thank you all again.

24 Because we ran a little over here, we're
25 going to convene the next people at 4:15. So we

1 will see many of the same faces back here soon.

2 (The proceeding was concluded at

3 4:00 p.m.)

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 P R O C E E D I N G S

2 WESTWOOD, CALIFORNIA; WEDNESDAY, MAY 20, 2015

3 4:20 P.M.

4 MS. CHARLESWORTH: We're all here for
5 proposed Class 19 which is more about video games.
6 In this case, we're talking about jailbreaking.

7 And I guess I think all of you were around
8 before.

9 Well, welcome, Mr. Freeman, you're new.
10 Welcome to our proceedings here, but I think you
11 understand sort of the general format since you have
12 been in these proceedings before.

13 I'm going to have you all introduce
14 yourself again for the record and then we will
15 proceed with the short statement, the brief opening
16 statement which sometimes take longer because we ask
17 questions. And then we will proceed to have a
18 conversation about the jailbreaking issue.

19 So, Ms. Gellis, I guess we will start with
20 you just introducing yourself.

21 MR. FREEMAN: Catherine Gellis. I am a
22 solo attorney and I am here on behalf my Digital Age
23 Defense Project.

24 MR. WIENS: Kyle Wiens. I am representing
25 iFixit and the Digital Right to Repair Coalition.

1 MR. FREEMAN: My name is Jay Freeman. I
2 own a company called SaurikIT, LLC, a developer of
3 the alternative to the app store for jailbroken
4 iPhones. And I am also a member of the group that
5 did the PlayStation 3 hack, although I was not
6 involved in that specific work.

7 MR. WILLIAMS: I am Matt Williams from the
8 MPAA, ESA and RIAA.

9 MR. FRANKEL: I'm Simon Frankel, here for
10 the Entertainment Software Association.

11 MS. TONSAGER: Lindsey Tonsager for the
12 Entertainment Software Association.

13 MS. CHARLESWORTH: We thank you.

14 And Ms. Gellis, why don't you lead us off
15 with your opening statement.

16 MS. GELLIS: My comments for this class
17 synthesize the comments I made earlier today.

18 The first point is that even though it
19 involves video games, this is not a proposed
20 exemption seeking liberal access to a copyrighted
21 work for the sake of simply having access to a
22 copyrighted work as a piece of content.

23 In fact, like with the TV and the car, the
24 copyrighted work at issue here is simply the
25 software that is operating the device, not any

1 additional downstream media the device might also
2 ultimately consume and which might involve some DRM.

3 This exemption seeks only to bypass the
4 TPM controlling the functionality of the device so
5 that, like in the case of a TPM in the car, it can
6 give people dominion over the computing device they
7 own to make it operated by any computing logic they
8 have -- so it can be operated by any computing logic
9 they have lawfully acquired.

10 MS. CHARLESWORTH: Thank you, Ms. Gellis.
11 Mr. Wiens.

12 MR. WIENS: I thought I would share a
13 little bit about iFixit and what we do.

14 I'm here representing a number of
15 exemptions but this is the only exemption that
16 directly impacts our business.

17 We are in the business of extending the
18 lifespan of products that people have. We want to
19 make game consoles last as long as possible so
20 people can buy lots and lots of games from my
21 friends on the left.

22 We have an open source repair manual we
23 have written for the Xbox 360 and the PlayStation 3
24 and every other game console going back all the way
25 back to the Atari 2600.

1 We got a request on the website from
2 someone the other day that said I have an Atari
3 2600, I am trying to repair it, how do I keep it in
4 operation. And then a community member posted a
5 response and she was able to fix it.

6 It's not that people are buying new games
7 for the Atari 2600, but they're certainly buying
8 lots of games for all the new hardware.

9 The Xbox 360 and the PlayStation 3 have a
10 special place in history in the game console
11 community because of hardware defects that were
12 introduced as a result of Microsoft and Sony racing
13 to beat each other to the market.

14 The Xbox flaw is called the "red ring of
15 death." It's a rather ominous phrase and it's a --
16 the symptom is what happens is you turn your Xbox
17 on, you want to play, and instead of going green on
18 the front, it goes red. Instead of the four happy
19 circles, you get four rings that are red and your
20 console just does not power on.

21 I know there are literally millions of
22 children who have been crushed and disappointed
23 because their Xbox wouldn't turn on because of the
24 red ring of death.

25 You would say that sucks for Microsoft,

1 but this same thing happened to Sony.

2 Sony's problem is called the "yellow light
3 of death," and when the Sony PlayStation 3 fails, it
4 goes yellow.

5 This is no small issue. This impacted --
6 well, Microsoft sold something on the range of
7 84 million -- according to Wikipedia, 84 million
8 Xbox 360's. They had to extend the warranty of the
9 Xbox 360 by a significant period of time to cover
10 this hardware flaw.

11 Microsoft took a billion-dollar write-down
12 as a result of extending the warranties. They were
13 mailing all of these Xboxes to Mexico, repairing
14 them there, sending them back.

15 At some point, Microsoft had to say, look,
16 we spent a billion dollars fixing these issues. At
17 some point, they said you have the consoles, if you
18 want to get it fixed, we don't have any option for
19 you and they just stopped providing repair services
20 for the Xbox 360.

21 Since then, we have started to help people
22 fix them. So I would like to introduce this exhibit
23 which is the repair manual that we wrote for the
24 Xbox.

25 MS. CHARLESWORTH: For the record, we're

1 now viewing hearing Exhibit 6.

2 MR. WIENS: So this is the process. The
3 problem that afflicted the Xbox 360 and the
4 PlayStation 3 is that the graphics processor just
5 got too hot. It got too hot and the solder
6 connection between the chip and the board cracked
7 and failed.

8 And so there were a number of different
9 fixes. Some of them were rather comical.

10 People would say if you take your Xbox and
11 wrap it in a towel, you fire up the hard drive halo,
12 the Xbox heats up a lot and it will melt and reflow
13 the solder. And this actually is a fix that works.
14 You wrap your Xbox in a towel, it gets really hot,
15 you play a game and it fixes it for a couple of days
16 and then it stops working again.

17 The more substantial fix is this process
18 with -- this is called the X-clamp fix. And this is
19 basically opening the Xbox up and you use physical
20 means to force the graphics processor back down on
21 the DU.

22 This seems esoteric. This particular
23 repair manual has over 50 steps -- it's very
24 involved -- to get the Xbox completely apart.

25 It's similar to do this sort of process

1 for the PlayStation 3.

2 You would say this is crazy, nobody is
3 going to do this.

4 Our repair manual has been used over a
5 million times. So out of those 84 million consoles,
6 this repair manual has been used over a million
7 times.

8 There is a YouTube video by Eric the car
9 guy. Frequently, I go and I learn how to fix super
10 stuff from him. He is a very, very competent car
11 mechanic.

12 He posted a video on how to fix the Xbox
13 ring of death. It has 4.9 million views.

14 MS. CHARLESWORTH: So to be clear, that is
15 a physical change that doesn't involve
16 circumvention; is that correct?

17 MR. WIENS: Correct.

18 MS. CHARLESWORTH: And it is an effective
19 fix; is that correct?

20 MR. WIENS: The problem is it's effective
21 some of the time.

22 So generally what happens, we find that
23 when people do this particular repair on the Xbox,
24 it's effective 70 to 80 percent of the time and the
25 console works for three to six months afterwards and

1 then it dies.

2 In the case of the PlayStation 3
3 yellow-light-of-death fix, it's effective 30 to
4 50 percent of the time. And again, it lasts for
5 generally six months and then the board dies.

6 MS. CHARLESWORTH: How did you acquire
7 those statistics?

8 MR. WIENS: This is just -- it's anecdotal
9 based on the experiences we are having. We sell the
10 kits to people and then they respond to us and tell
11 us how long it lasts.

12 Sometimes the fix is permanent and
13 hallelujah, that is great.

14 We had someone internal to our company
15 that was repairing her Xbox. She fixed it, it
16 worked for a few months and stopped working again.
17 And at that point, the board is dead. So at that
18 point, the entire Xbox is not dead, just the board.

19 So I would like to step back from the
20 repair for a moment and talk about the environmental
21 impact of this.

22 We have manufactured -- just looking at
23 the Xbox 360 and the PlayStation 3, they both sold
24 around 84 million units. So you are talking about
25 170 million units that were sold.

1 They are still continuing to manufacture
2 but at a much slower rate.

3 So you have these products out there. It
4 would sure be great to maximize the amount of
5 utility you get out of these devices.

6 It takes over a thousand pounds of raw
7 material to mine from the ground to make a single
8 Xbox 360 or PlayStation 3. There is a significant
9 environmental impact to manufacturing these things.

10 Out of all of the elements on the periodic
11 table, there is about 70 of them that we use in
12 modern manufacturing. Over 50 of those are used in
13 the Xbox and the PlayStation 3. So you have 50
14 different elements.

15 And we work very closely with electronics
16 recyclers. We were able to reclaim parts from
17 Electronics Recyclers International, a recycling
18 facility in Fresno.

19 And the end-of-life processing where they
20 take an Xbox or PlayStation and they grind it up and
21 melt it down to get the raw materials back out of
22 it, they're able to recover 12 out those 50
23 elements. That's it. The other 38 elements are
24 lost in the slag they melted down, lost forever.

25 There is no way to take a truck full of

1 old Xboxes and melt them down and make new Xboxes
2 from them.

3 You end up with the rare earth elements.
4 These are the most geopolitically sensitive
5 elements, rare earth elements. 90 plus percent of
6 the world's rare earth elements come from Asia.
7 They mostly come from China.

8 China significantly restricts exports of
9 rare earths. So we're importing rare earths in the
10 form of products. They're going to the smelter and
11 being lost. And in order to manufacture new
12 products, we have to go back to China.

13 This is an area that Congress has been
14 very concerned about. They call them "critical
15 metals," these precious metal supplies that are in
16 our products. We're reliant on China for supplies
17 of the raw materials. There is only one rare earth
18 mine in North America.

19 So the hope is that if we are going to
20 manufacture these products, we can make them last as
21 long as possible.

22 So what is the 1201 issue with repairing
23 Xboxes and PlayStations. The challenge is at this
24 time when you cannot do this fix, you cannot do the
25 red-ring-of-death, X-clamp-reflow fix, you have to

1 replace the board.

2 In order to replace the board, the board
3 is linked to the optical drive.

4 The anti-piracy technology they have built
5 in links the software on the optical drive. The
6 optical drive is the DVD drive or the Blu-ray drive
7 with the main board.

8 And so it's not like one to one. There is
9 actually a number of different permutations of
10 optical drives and main boards.

11 And so when people come to us and say I
12 want a new board to repair my Xbox, we have to say
13 well, what optical drive do you have. And then we
14 have to have a stock of matching opticals to match
15 that board.

16 And it's incredibly challenging to know to
17 the point where there is a crowd source database on
18 360Drives.com that has a list of over 7000
19 permutations where people are reporting I have this
20 Xbox drive, this is the board that works with this
21 and vice versa.

22 So it's not that the drive is specifically
23 linked to one Xbox or the drive is specifically
24 linked to one PlayStation board. It's that there
25 are like 20 permutations of the drive and 20

1 permutations of the board and you have to get the
2 right one.

3 MR. DAMLE: And if you get the right one,
4 do you need to circumvent?

5 MR. WIENS: No, if you get the right one,
6 you don't, but getting the right one is incredibly
7 challenging.

8 So what we end up doing in order to effect
9 the repair is we sell the board and the drive
10 together because it's just not economically viable
11 to get them independently.

12 Repairs come down to economics. If a
13 console is worth "X," can I repair it for a fair
14 amount less than that. Otherwise, I'm just going to
15 throw it away.

16 So right now, for the PlayStation 4, we
17 sell a repair kit for it that is a replacement board
18 and a replacement optical drive for \$200. Now, that
19 is for a console that is worth \$400. So that is
20 borderline maybe not worthwhile.

21 If we could sell -- maybe someone has a
22 problem with their optical drive. If we could just
23 sell them the optical drive, we might be able to do
24 it for \$100, which would be very compelling.

25 So what we are seeing is people throwing

1 these devices away and in grand numbers that could
2 have been reused, re-purposed, purely because the
3 repair has been made economically infeasible.

4 We try to get these parts directly from
5 the manufacturers who keep these products and
6 service, but the manufacturers are not willing to
7 sell us the parts. So the only way that we're able
8 to get them from those electronic recyclers and
9 literally rescue these devices from the maws of the
10 shredder is to take them out and sell the drives and
11 the board as a kit.

12 MR. DAMLE: But it sounds like the impact
13 is economic. It's not that you can do this without
14 circumvention and the adverse effect is that it
15 costs more money.

16 MR. WIENS: The adverse effect is --

17 MR. DAMLE: It costs \$200 rather than
18 \$100.

19 MR. WIENS: Well, from our perspective, it
20 means having to stock hundred and hundreds of
21 different models of boards. So it's --

22 MS. CHARLESWORTH: But that is reflected
23 in your price, right? In other words, your
24 overhead, it would be reflected in the price that
25 you pass onto the person seeking repair.

1 MR. WIENS: Correct. And that overhead
2 has been so high that we just do not sell the
3 individual components. That is why we sell them
4 together.

5 So yes, that cost is reflected in the \$200
6 price.

7 So e-waste is a major polluter, not just
8 in the United States but around the world. I have
9 spent time in electronic scrapp yards.

10 Have you ever seen photos in the New York
11 Times of the kids burning electronics? I know those
12 kids. They're my friends. They do this work
13 because they don't have other options. They do it
14 because they don't know how to repair things or
15 because there are obstacles to repair.

16 E-waste represents only about 2 percent of
17 the solid waste in our landfills. That is
18 significant. It's millions of pounds of product,
19 but it's 70 percent of the toxic waste that we have
20 to manage and deal with in the U.S.

21 Electronics, the Xbox -- the moment an
22 Xbox is not functional, it is classified by the EPA
23 as toxic waste that has to be handled differently
24 than any other kind of product.

25 So we're in the business of making things

1 last as long as possible. We are interested in an
2 exemption that would allow us to repair these
3 products. We're not necessarily interested in an
4 exemption that would allow to install additional
5 software on these things. We just need to be able
6 to reflash the optical drives.

7 So the difference between the board on the
8 optical drive and the unit, if we could reflash
9 these optical drives, that's all we need to do so we
10 can be able to take the software from one optical
11 drive and put it on another unit.

12 MS. CHARLESWORTH: I was going to say do
13 Sony and Microsoft have repair programs that are
14 available to people who would be using your service.

15 MR. WIENS: Not for these consoles
16 anymore.

17 So they do for the PlayStation 4 and the
18 Xbox One, but they don't have repair programs in
19 operation for an Xbox 360 that is bought five years
20 ago. They tell you to buy a new one.

21 MS. CHARLESWORTH: So Xbox 360, there is
22 no authorized --

23 MR. WIENS: There is still -- I believe
24 they are still manufacturing new Xbox 360's. So if
25 you buy a new Xbox 360 -- is that correct? Are the

1 Xbox 360's still being sold?

2 AUDIENCE MEMBER: I believe so.

3 MR. WIENS: So I believe if you bought a
4 new 360, there is a twelve-month warranty on that,
5 but if you bought a 360 two or three years ago,
6 there are no aftermarket repair options.

7 MS. CHARLESWORTH: So one other thing --
8 just a little advance warning -- we really want to
9 know what people can get repaired through the
10 manufacturers and what is no longer able to be
11 repaired through the repair programs.

12 MR. DAMLE: Can I clarify something that
13 you just said.

14 So the petition which was not filed by
15 you -- it was filed by someone else -- and your
16 submission, as well, it mentioned repair. Your
17 submission mentions repair but focuses on a lot of
18 other uses, installing -- and one of them is
19 re-purposing and installing different software.

20 Are you abandoning those aspects of your
21 request? You're not focused on those aspects of
22 your request?

23 MR. WIENS: Sure.

24 I would say there is tremendous use to
25 being able to re-purpose old electronics for new

1 uses.

2 So if you look at these 170 million Xboxes
3 and PlayStations -- let's say they never played a
4 video game ever again but you could use them as
5 general-purpose computing, that would be a wonderful
6 thing.

7 Or if we could just continue to have them
8 function and give them to kids in Kenya, give them
9 access to the games we have been playing for the
10 last five or ten years, that would also be a
11 wonderful thing.

12 So I am interested in extending the
13 lifespan of these products.

14 You can intuit what the logical -- if
15 people can install any software they wanted on
16 these, that would increase the scope of use of them.

17 If they could only repair them and play
18 encrypted video games, as long as they continue to
19 function, there is still a utility for them, not as
20 much utility as if they were jailbroken, but there
21 is still utility.

22 MS. CHARLESWORTH: I guess the question,
23 just to ask it in different phrasing, when you
24 started speaking, I leaned over and said are they
25 really focused on repair.

1 I mean the pappers that were submitted were
2 not -- you may have mentioned repair in passing but
3 that was not the main focus of the proposal.

4 And it sounds like from what you just
5 said, you said you are not that interested in
6 being -- a moment ago, you said you are not
7 especially interested in or particularly interested
8 in being able to install new software.

9 MR. WIENS: My primary interest is in
10 repair.

11 MR. FREEMAN: That is Kyle but I have a
12 different focus.

13 MS. CHARLESWORTH: We just to make sure we
14 understood where each of you sits.

15 MR. WIENS: My business and economic
16 interest is in repair. That's it, yes.

17 Thank you very much.

18 MS. CHARLESWORTH: Mr. Freeman.

19 MR. FREEMAN: So I was one of the people
20 who was one of the primary proponents of this class
21 three years ago. I did not actually get involved in
22 it during this time around.

23 However, I have a slightly different
24 perspective than a lot of other people involved in
25 this because I work with a team of people who do

1 this kind of hacking. I do a lot of work on
2 explaining exploits to people and I also do
3 transformative code modifications. So I will get
4 into a little bit of what this is as different types
5 of uses for jailbroken video game consoles.

6 So what you oftentimes hear about are
7 ideas of installing entirely different operating
8 systems. Maybe it's not even installing a game
9 console. Maybe it's installing Linux.

10 You also will hear about, of course,
11 piracy.

12 You will hear about being able to repair
13 things, but I think you often don't end up hearing
14 about a lot of the transformative uses of the
15 software on the device. That's what my specialty
16 is.

17 So I don't know how many of you played
18 games a long time ago, but back when I was a kid,
19 there was something called a "game genie." The game
20 genie was a cartridge you plugged into your Nintendo
21 that you then plugged another cartridge into. And
22 that cartridge allowed you to modify the behavior of
23 the cartridge you own. You can't copy anything but
24 you can change the behavior of the game or make it
25 more fun for your use case.

1 This is similar to the type of technology
2 that I provide on the iPhone. It's been the basis
3 for the exemption request for the last two cycles
4 for the iPhone that we successfully got an
5 exemption.

6 Now, I have people that I work with,
7 including some of my students at University of
8 California, Santa Barbara, who do this sort of work
9 with games. So Sasha Boliche has a game called
10 Spelunke and she has made an entire multiplayer
11 experience for this game.

12 This is normally a single-player game.
13 This is something that the original developer has
14 not worked on for a long time and is actually kind
15 of excited about the amount of people that have been
16 able to do this. He does not have any actual code
17 for it. He does not have access for people to do
18 these sorts of things to it.

19 MS. CHARLESWORTH: Did the original
20 developer authorize the creation of that derivative
21 work? Is that what you are saying?

22 MR. FREEMAN: So in this case, he is not
23 able to do make much statement about this. He has
24 made public comments that he, in fact, is excited
25 about this work. He has not been able to assign any

1 of the copyright to it, but the thing is, this does
2 not require any copyright assignment. This is
3 something where people have to have a legal access
4 to the original work.

5 MS. CHARLESWORTH: So my question is if I
6 take an existing video game and I write new code and
7 turn that from a single-player game to a multiplayer
8 game, some might say this is a derivative work and
9 some might say that may not be a fair use.

10 MR. FREEMAN: You would not be
11 redistributing that work.

12 MS. CHARLESWORTH: I mean I don't want to
13 get into a whole legal discussion but that does not
14 matter.

15 MR. FREEMAN: I was under the impression
16 that transformative work, that was fine.

17 MS. CHARLESWORTH: It could be a fair use.

18 MR. FREEMAN: In the last few cycles, we
19 have had that argument come back from the Copyright
20 Office.

21 MS. CHARLESWORTH: I mean I not trying to
22 be overly -- I am just saying -- we heard this a
23 little bit in the last panel, but taking an existing
24 work and then creating a new work based on that work
25 may or may not be a fair use, but what you are

1 talking about sounds to me like someone took a
2 computer or game and developed a whole new part to
3 it and that someone might argue credibly that that
4 would require permission from the original copyright
5 user.

6 MR. FREEMAN: I think I see where you are
7 coming from and I can actually address that point.

8 So the type of work that I do does not
9 involve constructing a new game console or a new
10 game cartridge, does not involve ever at any point
11 constructing a new copy of the game. You do not
12 actually end up with a derivative work that you
13 could isolate and say here, this is a new work.

14 Instead, what you are doing is you are
15 making modifications to the running platform as the
16 game is operating in order to provide new
17 functionality. It's more similar to if I gave you
18 an audio track of more cowbell, then you can play
19 along with a piece of music that you already own and
20 then you can only do that in the moment by very
21 carefully putting the more cowbell track and your
22 original track on some kind of synchronized tappe
23 player and playing it.

24 At no point is a new cassette tappe or CD
25 or any kind of new musical work being put together.

1 MS. CHARLESWORTH: So you are not altering
2 the original computer code for the original game?

3 MR. FREEMAN: Correct. The original code
4 is stored on the CD of the game and not being copied
5 onto a new storage of any form.

6 This is actually very similar to the
7 comments that were made for jailbreaking the iPhone
8 with relation to only one 60,000th of anything gets
9 modified, only in memory.

10 This is very similar to the statements
11 that were made with the iPhone jailbreaking where
12 only one 60,000th of the code was modified, only
13 transiently, only in memory, never actually
14 constructing a new copy.

15 It is a de minimus modification to the
16 original memory, not even the original code.

17 And does this address your question?

18 MS. CHARLESWORTH: It was definitely
19 helpful.

20 MR. FREEMAN: Thank you so much.

21 And so in this -- so the things I provided
22 have allowed for people to make the games they might
23 play for fun for their use cases.

24 An example of this might be if you are
25 playing a game like Scrabble and you're playing it

1 with your friends, you might have house rules on
2 what words are allowed to be valid and what are not.

3 However, many -- in fact, essentially all
4 versions of Scrabble you have on a computer are
5 going to have a dictionary associated with it for
6 checking the words. Being able to modify whether
7 the game accepts your word or not -- not modifying
8 the dictionary but modifying whether the game
9 accepts a word or not, which is different from
10 modifying the dictionary, is something that somebody
11 has done with a product called "Messed Up Words," a
12 modification for the application "Words With
13 Friends."

14 Additionally, there is a very large
15 ecosystem of people who make modifications to the
16 game play of a system called Minecraft, in other
17 words, to provide for more opportunities for complex
18 construction. People have built entire computers
19 inside of the game by making minor modifications of
20 the computer in the game, building a simulation of a
21 computer out of torches and switches and buttons and
22 trees and things inside of this game by being able
23 to add slightly better functionality to one of the
24 end game switches.

25 People who do these kinds of modifications

1 are -- actually, they commercialize the
2 modifications.

3 So in some cases, this is something
4 that -- in the world of video games, in some cases,
5 this is something that is completely authorized by
6 the game manufacturers.

7 So in the case of Skyrim, there was in
8 fact, temporarily only -- unfortunately, only
9 temporarily but not due to any legal issues -- it
10 was due to various market issues in their particular
11 distribution platform -- a way to buy and sell on
12 the online gaming system mods for Skyrim.

13 However, in my system -- so I provide a
14 platform for people making these modifications to
15 applications on the iPhone, including games on the
16 iPhone.

17 In the last six years, we have \$40 million
18 of revenue through my store alone and I only
19 provide -- the largest application/modification
20 people actually don't go through me because they're
21 cappable of writing their own storage system.

22 Now, you are going to ask why is this
23 relevant, why I am bringing up the revenue on the
24 iPhone.

25 So when George Hotz hacked the

1 PlayStation 3, the very first thing that he did is
2 he came to me and he asked me, Jay, I need an app
3 store, I need something where people do all of the
4 cool stuff you do on the iPhone on the PlayStation.

5 And a number of people have actually come
6 to me and said man, it would have been awesome if
7 that had happened. I tell them that George actually
8 came to me before he did all of that and asked me.

9 And I'm going to tell you I ignored him.
10 I actually pretended I wasn't there that day because
11 I didn't want to have the conversation because I
12 knew that Sony was going to attempt to sue him.

13 And Sony did sue him. It was a very large
14 and complex legal battle.

15 There was definitely a chilling effect
16 that day. They kept the ecosystem of an entire
17 different kind of work. I will describe it not as a
18 more copyrightable work but an entirely different
19 class.

20 MS. CHARLESWORTH: But the chilling effect
21 was that Sony won the lawsuit, right?

22 MR. FREEMAN: Sony actually did not win
23 that lawsuit.

24 MS. CHARLESWORTH: It was settled?

25 MR. FREEMAN: They actually never -- so

1 the first battle you always have is a jurisdictional
2 battle over whether you will -- so what Sony Online
3 of America said -- so Geohot wanted it to be
4 "Multinational Japanese corporation sues little
5 kid," and Sony wanted it to be "Sony Online of
6 America is getting screwed by that punk kid from
7 Jersey."

8 And that jurisdictional battle actually
9 ended up getting settled out of court and the entire
10 thing actually ended up never happening.

11 MS. CHARLESWORTH: Right. But I mean as
12 part of that settlement, my understanding -- and I
13 am not sure how public the settlement is -- but just
14 a general understanding is that he was precluded
15 from engaging in that activity.

16 Do you agree?

17 MR. FREEMAN: Correct. This is long after
18 the events which I am speaking of, before George
19 Hotz went public with that.

20 MS. CHARLESWORTH: I want to go back to
21 something you said, which is you were comparing the
22 smart phone situation to the video game situation.

23 And then with the smart phone, when you
24 jailbreak a smart phone, you then acquire
25 non-authorized apps, unauthorized apps, and put them

1 on your smart phone, but some of the examples you
2 are giving are actually related to the content, the
3 video content that you are talking about.

4 In other words, you are building out
5 Minecraft or somehow -- so in the jailbreaking -- in
6 granting an exemption for the smart phones, we made
7 a finding that really the content -- that the
8 authorized content wasn't being affected -- I mean
9 that was defined by the office -- and that the
10 jailbreaking really was just to enable
11 interoperability with additional applications, but
12 you're telling -- what you are saying is something a
13 little different, which is it would be enabling
14 modifications of some sort to the content that
15 people are using on the console.

16 I want to explore that with you a little
17 bit because that is a very -- that is a distinction.

18 MR. FREEMAN: I would love to talk about
19 that.

20 So on the iPhone, a very simple example,
21 on the bottom of the screen when you look at the
22 icons, you see four icons, a four-icon dock. So I
23 wanted an extension for something called a five-icon
24 dock. Instead of having four, you now have five.

25 Now, this is a very simple, almost trivial

1 modification that I absolutely loved because I have
2 this fifth thing that I always wanted to have access
3 to.

4 And now this is a modification that would
5 be very easy for apple to make. It's a modification
6 that is nearly impossible for anyone else to make
7 without using the tools I provide, essentially a
8 game genie for an iPhone. This same technology can
9 be utilized to make modifications to other parts of
10 apple's operating system. It can be used to make
11 modifications to third-party applications running on
12 the device.

13 Essentially, it allows you to modify any
14 software that is operating on that, but it does it
15 by as the application is loaded into the memory --
16 in fact, after it's fully loaded, after the original
17 pristine application of the developer is loaded into
18 RAM, it then does these things called hooks, where
19 as the original functionality is being executed from
20 that code, you hijack the execution over to a new
21 block of logic codes you add, and that code that you
22 added then can provide new functionality.

23 So in some cases, this is adding new
24 functionality to a game. In some cases, this is
25 adding new functionality to an application.

1 Maybe you are using the Twitter
2 appplication and you would like to be able to tie the
3 Twitter feed you are seeing with information from
4 Facebook. And so you could now add that view of
5 Facebook information to the Twitter appplication,
6 something that Twitter might not want to do,
7 Facebook might not want to do, but you are the user
8 doing it. You are not distributing a new Twitter
9 appplication and you are not distributing a new
10 Facebook appplication.

11 So we provide the user the ability to
12 treat features like apps. So instead of having an
13 alternative app store, I have a feature store.

14 Imagine if you could look forward to the
15 next five years of features that appple is going to
16 add to IOS and you could say I would like to install
17 that one and that one and I would like to get that
18 one and you could even charge for them. And this is
19 something that, again, people build game mods --
20 people actually build game mods for smart phones
21 using technology I provide.

22 However, people are unable to do this on
23 video game consoles.

24 Now, you could say -- and I always like
25 anticipating good arguments. I don't like

1 pretending there isn't a good argument.

2 The alternative then is get a smart phone

3 and you have an exemption for that. So why don't

4 you get a smart phone and modify the game there?

5 Well, the thing is we actually won't be able to do

6 this. In order to make these modifications to a

7 particular game, you have to have a console on which

8 that game is operating on.

9 So that is why we ask for these

10 modifications. The ability to jailbreak phones and

11 the ability to jailbreak video game consoles is

12 because we want to be able to make these

13 functionality changes to the software that we're

14 using.

15 So it's not okay when people say we need

16 to go and get a different console or go and get an

17 iPhone or go and get a PC because if we would like

18 to be able to make the modifications to Skyrim, we

19 need the original system that the Skyrim game is

20 running on.

21 MS. CHARLESWORTH: I think we are going to

22 move down the table.

23 Mr. Williams.

24 MR. WILLIAMS: Thank you.

25 If you don't mind, I am going to let Simon

1 and Lindsey go first. And then if there is anything
2 left over, I will try to wrapp up.

3 MS. CHARLESWORTH: That's fine.

4 Mr. Frankel.

5 MR. FRANKEL: Thank you and I will try to
6 be brief.

7 We are just digesting some of the new
8 information articulated today and we will have a few
9 things to say in response, but in general, we are
10 here on a proposal that is essentially one the
11 Copyright Office considered and rejected in the last
12 cycle and I don't think we have heard reasons today
13 for a different outcome.

14 It is an exemption that would effectively
15 gut video game console piracy protections to enable
16 a small sliver of uses that can already be
17 accomplished on other devices that Mr. Freeman
18 touched on.

19 There were findings by the register on
20 the recommendation last time and by the librarian
21 that copyright interests are at stake here, that
22 video game access controls provide important
23 incentives to create video games and other content
24 for consoles and that circumvention of those access
25 controls could permit interoperability of video game

1 consoles regardless of the effect of diminishing the
2 value of those works.

3 I don't think any of that has changed.

4 And I will just make a couple of points to
5 provide some responses to what we have heard just
6 now.

7 First, unlike some other requests
8 involving so-called jailbreaking -- we have had our
9 little comments in the written submissions that you
10 have seen that jailbreaking sort of has this idea of
11 liberation, which is not appropriate here.

12 Other requests involving hacking or
13 jailbreaking of different devices, unlike those --
14 the proposed exemption here creates a real and
15 substantial threat of copyright harm in the form of
16 additional piracy and opens up video consoles to
17 pirated games. That is the very infringement that
18 the access controls are designed to correct.

19 And the record here has plenty of evidence
20 that once a console is hacked for whatever reason,
21 as we talked about a little in the last session, the
22 damage is done for copyright purposes and barriers
23 to piracy are gone.

24 On the flip side, there isn't any showing
25 of the substantial need that cries out for an

1 exemption.

2 So what are the alleged adverse impacts
3 here. It's really an effort to accommodate a
4 personal preference and convenience, or reasons that
5 I am not sure fit into the framework of the statute.

6 As far as repair, I think I understood the
7 very specific fix that Mr. Wiens was discussing.
8 The fact is, I think, Ms. Charlesworth, you did
9 raise the point that console makers do provide
10 repairs. They provide extended warranties with
11 purchase with free repair and there is repair
12 available for a nominal fee after that.

13 I believe there was an extension of the --
14 as Mr. Wiens said, of the Microsoft warranty after
15 this issue for three years.

16 MS. CHARLESWORTH: I'm sorry. Could
17 you -- extension of the warranty?

18 MR. FRANKEL: From one to three years.

19 MS. CHARLESWORTH: On what product?

20 MR. FRANKEL: On the Xboxes that were
21 suffering from the problem that Mr. Wiens mentioned,
22 the so-called "red ring of death."

23 MS. CHARLESWORTH: Do you have any
24 information on the Sony issue?

25 MR. FRANKEL: I don't except that they

1 also have an extended warranty, but I don't know if
2 it was extended. We can find out, but this --

3 MS. CHARLESWORTH: Well, I was going to
4 say after the warranty expires, does Microsoft or
5 Sony take the game back and try to fix it?

6 MR. FRANKEL: They will for a small fee.

7 MS. CHARLESWORTH: So is there just a
8 disagreement in terms of -- there seems to be a
9 disagreement about that here in terms of
10 Mr. Wiens --

11 MR. FRANKEL: I heard Mr. Wiens say --

12 MS. CHARLESWORTH: -- saying they don't.
13 And that is something we may want to follow up on
14 with your clients.

15 MR. FRANKEL: But I want to focus, just
16 because I am learning it today, the specific repair
17 that Mr. Wiens mentioned because I am just not clear
18 how it applies to this proceeding.

19 We just having hard about this today, the
20 specific issue of the code on the optical drive, it
21 is not clear that there are TPM's that have to be
22 circumvented to replace that code on the new optical
23 drive as I heard Mr. Wiens say.

24 And there is the corresponding question of
25 if you have done that, what effect does that have if

1 you actually circumvented TPM. It's not clear to
2 us.

3 MS. CHARLESWORTH: Mr. Wiens, just in
4 response -- specifically in response to that, what
5 is it that would require you to circumvent a TPM to
6 make that repair of the Xbox that you were
7 discussing or the Sony PS3?

8 MR. WIENS: So the technical details are
9 different between the Xbox and the PS3. You have to
10 synchronize the optical drive with the main board.
11 So you can either jailbreak the main board and make
12 it work with the new optical drive or you have to
13 bypass the TPM on the firmware on the optical drive
14 to reflash it.

15 So you're taking firmware from one optical
16 drive that maybe was the optical drive that came
17 with that Xbox, taking it and putting it on the
18 replacement Xbox.

19 MS. CHARLESWORTH: And the alternative to
20 that is doing the physical repair that you described
21 earlier; is that correct?

22 MR. WIENS: You do the physical repair.
23 And if that doesn't work or when that fails, you
24 need to put a new board in the Xbox.

25 If you are attempting to repair the

1 component, if you can't repair the specific
2 component, you have to replace the component. And
3 you can't replace that component without
4 synchronizing it with the existing optical drive.

5 MR. FRANKEL: I am sure it's my lack of
6 technical cappability, but what I am still not
7 certain about and what I think is relevant here is
8 did you have to circumvent TPM's on the firmware on
9 the optical drive to replace it, because otherwise,
10 what is the access control that needs to be
11 circumvented to do this repair? And that is why it
12 is relevant here.

13 MS. CHARLESWORTH: Mr. Wiens, do you want
14 to respond to the question directly rather than
15 having me --

16 MR. WIENS: I can say so from our
17 perspective, we're selling these products. We have
18 had the technical cappability and we would love to
19 have been providing that service of flashing these
20 optical drives. We have not done it because of fear
21 of 1201.

22 MR. DAMLE: What is the TPM that is on the
23 optical drive? I think that is the question.

24 MR. WIENS: Do you have more specific
25 information, Jay?

1 MR. FREEMAN: I have a lot of information
2 on the operation in general, but I do not know about
3 the optical drive.

4 MR. WIENS: So the synchronization between
5 the optical drive and the main board is at the core
6 of the copy protections because the idea is that --
7 this was back in the day -- but they didn't want you
8 to be able to burn a replacement game and play that
9 on the optical drive.

10 So part of the copy protection mechanism
11 is built into the optical drive. And they didn't
12 want people to be able to hack the optical drive so
13 that they could play copied games on it. So that
14 was the intent of the copy protection that was built
15 into both the optical drive and the main board.

16 MS. CHARLESWORTH: You say "copy
17 protection," but do you mean access control?

18 MR. WIENS: It was access control in the
19 form of copy protection on that device.

20 So it's a synchronization. And you have
21 the -- I don't know if the firmware is encrypted or
22 not on the optical drive, but you have got the
23 software on that that you have to -- I mean we went
24 very far down this road.

25 They're saying we wanted to be able to put

1 the new firmware on the drive. And the conclusion
2 at the end of it that our legal advice gave us is
3 that this is a 1201 TPM issue.

4 And I am sure that -- I mean this is a
5 situation where the engineers who designed the
6 system would be more cappable, but I think I would
7 refer you to the comments in your filing of the
8 Nintendo Wii engineer that talked about the
9 encryption synchronization device.

10 MR. FRANKEL: This is not a deposition
11 and I am not -- but I mean there is no doubt, as
12 Mr. Wiens said, there are some kind of TPM's on
13 the -- as he referred to, synchronization TPM's
14 here.

15 I think it still leaves open this question
16 of is the repair that iFixit wants to do, does it
17 require any circumvention. And I don't know.

18 MR. WIENS: One potential repair is you
19 jailbreak the console and then you can change the
20 setting on the console to be able to recognize the
21 new optical drive.

22 So outside of saying is there a TPM on the
23 optical drive, there is clearly a TPM on the main
24 board of the machine.

25 Let's say you need to do a repair because

1 your drive failed and you want to buy a new optical
2 drive. The only way to do that is you have to
3 jailbreak and modify the software on the device.

4 And by the way, a repair company could
5 jailbreak the device, program it to work with the
6 new optical drive and then re-jailbreak it so that
7 someone could use it.

8 The other thing I would say is that we
9 have a lot of customers who have called various
10 video game companies saying I have the red ring of
11 death problem, please, can I repair it, and they say
12 no, just buy a new one.

13 MS. CHARLESWORTH: I think as we said, we
14 may explore this issue a little more in follow-up
15 questioning, but why don't you continue.

16 MR. FRANKEL: As the record is, it's not
17 clear to me the specific repair Mr. Wiens is talking
18 about is precluded in any way, but in any event, I
19 think more generally as to repairs, there are
20 alternatives available in the market and we are
21 happy to provide more information on that, but there
22 is information in the record now as to the
23 availability of repairs both during the warranty
24 period and for a nominal fee afterwards.

25 There is a couple of others -- I think

1 Linux and the research -- which are covered in our
2 papers that we haven't heard about today.

3 And then the last, I guess, was from
4 Mr. Freeman raising the issue of essentially a
5 version of home brew games or modifications to
6 existing games.

7 At least one of the examples he gave was
8 the mods to Minecraft. It is my understanding that
9 those are allowed by the terms of the use of
10 Minecraft. And so that would not raise any issues
11 from what he has described, but more generally, just
12 the idea that you want to be able to play certain
13 games on consoles even though you could have played
14 them on other devices, I think that is the kind of
15 inconvenience that in the past, the office has found
16 is not a sufficient justification for the exemption,
17 but in addition, there are programs that all of the
18 console makers have to allow people to publish their
19 games through those consoles. And I don't think
20 there is any indication here that those have failed.

21 So for all of those reasons, I don't think
22 there is any sufficient justification for the
23 category.

24 MS. CHARLESWORTH: Just one more minor
25 clarification. My understanding is the Minecraft

1 mods are specific to the PC version of Minecraft and
2 it's not a console issue. So I don't think it's
3 relevant to this class.

4 MR. FREEMAN: May I respond to that?

5 MS. CHARLESWORTH: Yes.

6 MR. FREEMAN: That actually is -- that is
7 actually why it's relevant to this class, is that
8 it's something that the Minecraft developers
9 allowed -- they actually would love to encourage.
10 It's something that people are doing on PC's.

11 Even the Minecraft developers can't come
12 up with a magical way for people to make mods for a
13 console version of Minecraft because the mods for a
14 console version of Minecraft require a jailbroken
15 PlayStation.

16 MS. CHARLESWORTH: But you can do the mods
17 on the PC.

18 MR. FREEMAN: For the example of
19 Minecraft, that is correct, but the thing is, there
20 are many developers of games -- we have seen, for
21 example, Skyrim finally succeeding in getting a
22 scheme ordered on PC's to be able to allow mods to
23 be distributed, but again, it's a PC issue.

24 MS. CHARLESWORTH: So basically, what you
25 are saying is sometimes you can do it on a PC but

1 you can't do it on a console.

2 MR. FREEMAN: That is correct.

3 MS. CHARLESWORTH: Mr. Williams, do you
4 have anything you wanted to add?

5 MR. WILLIAMS: Just very briefly, I just
6 want to reiterate that the coalition of creative
7 industries that I represent supports the comments
8 that ESA filed and what they said today.

9 And our understanding coming into this was
10 that it was about more than just repairs, I think
11 based on the comments. And I didn't see much in
12 those comments -- nothing, really, that met the
13 standard of adverse effect -- or substantial adverse
14 effect.

15 Some of the things in there are things
16 that have been rejected repeatedly, like breaking
17 regional coding.

18 One explanation of the need was that in
19 some countries, there are high import tariffs on
20 computers, but if you hack a console and turn it
21 into a computer, you pay lower taxes if you import
22 that.

23 I don't think that is the type of thing
24 we're here to deal with and it doesn't justify an
25 exemption.

1 And then at the risk of sounding like
2 a broken record, since I have been on more panels,
3 this is the one that is really about hacking
4 consoles at its base.

5 We are concerned that piracy not only of
6 video games but of music and movies would result
7 from this type of hack, that once the consoles are
8 opened, all kinds of nefarious apps can be installed
9 that would allow pirated movies and achieve other
10 goals like I discussed earlier today.

11 MS. CHARLESWORTH: Well, last call.

12 MR. CHENEY: I have a question.

13 Could you quantify a little bit how many
14 repairs that might be out there, because it seems we
15 have talked about just two examples. We were
16 focused on one.

17 How many repairs would be needed that you
18 would need to reflash or do something to get around
19 a TPM of some kind? How many kind of repairs are we
20 talking about on these consoles and then compare it
21 to how many kinds of repairs you can do without
22 doing that.

23 MR. WIENS: So the initial versions of the
24 first two revisions of both the PlayStation 3 and
25 the Xbox 360, these were the ones that had the

1 problems. The newer Xboxes don't have the problem.

2 We don't have a breakdown of sales reports
3 of which editions of each of these consoles sold how
4 much, but let's say for the sake of argument that it
5 was 25 percent of the units of each of these
6 consoles that were sold during the period, that they
7 had the hardware flaw. You are talking about around
8 20 million Xbox 360's, 20 million PlayStation 3's
9 that have the flaw.

10 Anecdotally based on what we have seen in
11 the market, a hundred percent of the units that were
12 produced during that period will eventually develop
13 this flaw. So you are talking approximately
14 40 million units are going have this flaw that are
15 going to fail at some point in their use.

16 If we were to go out into the UCLA commons
17 here and survey students and ask how many of them
18 know about the Xbox 360 red ring of death or the
19 PlayStation yellow light of death, it would verge on
20 80 or 90 percent of the students. Every single
21 person our age has dealt with this issue and has had
22 friends in tears because of this problem. It is a
23 very, very common, frequent problem.

24 And the fix that I have shown on this
25 exhibit is merely a temporary fix. It's not a

1 permanent fix. You have to replace it with a new
2 board eventually.

3 With regard to the tariff question, you
4 misunderstood what we said slightly. We're saying
5 that it is -- there are different tariffs rates for
6 importing products into certain countries and it is
7 cheaper or there is less tax when you are importing
8 a game console than when you are importing a
9 computer.

10 So we have an economic incentive to get
11 functional consoles into other countries where
12 people can use them and maybe buy games for them.
13 That would be a wonderful thing.

14 MR. WILLIAMS: I think I understood that.
15 I just don't think it's part of what this proceeding
16 was designed to address.

17 MR. WIENS: The goal is to extend the
18 lifespan of the products. And the question is why
19 are game consoles different than tablets. And the
20 actual reason is it might be more affordable for
21 someone in Kenya to import a game console that they
22 could use.

23 MS. TONSAGER: I just wanted to respond to
24 the question, which it's a little bit of a perhaps
25 an obvious point, but to the extent that repair is a

1 concern, there appears to be now today evidence in
2 the record for two versions of two consoles. So
3 just we're not dealing with Xbox One or earlier
4 versions of Xbox. We're not talking about the PS4
5 or earlier versions of PlayStation. We're not
6 talking about any of the Nintendo consoles.

7 So the proposed class as drafted currently
8 is actually quite, quite broader than those two
9 specific consoles. So in any event, we of course
10 wouldn't want an exemption that would be overly
11 broad.

12 MR. CHENEY: That was sort of my point.
13 Could you respond to that, Mr. Wiens, about how
14 many -- it seems to be we're focused on a couple of
15 things in that very narrow subset of what is
16 possible potentially here.

17 And so if you could address that, if you
18 wouldn't mind.

19 MR. WIENS: We have repair manuals --
20 actually, game consoles are unique situations.
21 There is an open source repair manual for pretty
22 much every single game console that has ever been
23 manufactured.

24 On iFixit, we have wonderful data and we
25 would be happy to share the data on each of these

1 consoles in terms of what is breaking and what is
2 not.

3 Normally, there is an evenly distributed
4 ratio of things breaking. If you have a Game Boy
5 you bought, it might break or the main board on the
6 Game Boy might break and they might break in
7 relatively different ratios.

8 So with something like a Game Boy, there
9 would certainly be a repair that might involve, you
10 know, bypassing a TPM if you needed to replace the
11 main board separate from the cartridge reader. So
12 you have the same sort of synchronization issue.

13 The reason I am using the Xbox 360 and the
14 PlayStation 3 as specific examples is because rather
15 than a distributed curve across all the components
16 of the device that might fail, you have this very
17 spikey curve around the component that is protected
18 by a TPM.

19 So that is why are we using this as an
20 example, but I think you can make a very strong
21 argument that these devices have failures across the
22 board.

23 Extending their lifespan is a net good for
24 society. It's a net good for people selling video
25 games because there is more devices out there that

1 are functional that people can spend the money on
2 video games rather than spending the money on
3 hardware. Spending less money on hardware and more
4 money on games is good for the environment.

5 MS. CHARLESWORTH: Here is sort of a very
6 naive question, but when you jailbreak a console to
7 make a repair like that, does it remain jailbroken
8 where you can play pirated content on that?

9 MR. WIENS: It doesn't need to be.

10 MS. CHARLESWORTH: But it could.

11 MR. WIENS: It could. It depends on what
12 the service that you are authorizing is.

13 So if you said that, say, an electronics
14 recycler or an electronics repair center would be
15 able to do the modification and then jailbreaking it
16 to modify it to the consumer -- it's frequently in
17 this case, you want to do the synchronization. It
18 might not involve a complete jailbreak or you might
19 be able to temporarily bypass it to make the
20 modification.

21 We're really just trying to modify the
22 information required to address the optical drive
23 and then the device would remain in the previous
24 state.

25 MS. CHARLESWORTH: How does it get back to

1 the previous state?

2 MR. FREEMAN: So as long as you manage to
3 get all of the cryptograpphic components to the point
4 where they are cryptograpphically signed in the way
5 they are supposed to be, only somebody who then is
6 going to attack that chain is going to be able to
7 make another modification to it.

8 So the way to think about this is that in
9 order to have the system running temporarily while
10 he is reflashing parts of it, that while he's doing
11 that, it's no longer going to be correct. It's not
12 going to be the state -- in a consistent state as
13 according to the manufacturer, but once he gets it
14 into a consistent state with all of the original
15 locks and controls that the original manufacturer
16 wanted, then it will cryptograpphically verify in the
17 same way that the original version did with all of
18 the same locks and checks.

19 MR. WIENS: Another way of putting this is
20 people are jailbreaking these consoles now. So
21 criminals that want to pirate content are
22 jailbreaking these things. It's the people that
23 want to provide repair legitimately and want to
24 accomplish the repair in a legal fashion, they're
25 the ones who are seeing a chilling effect, not the

1 pirates.

2 MR. FREEMAN: And pirated movies and other
3 fixed content like that, you are not going to be
4 using a PlayStation and playing it there, anyway.
5 You are going to be using other things like
6 computers and DVD players.

7 MR. CHENEY: Can you do that in every case
8 in every repair? In other words, you are saying
9 re-jailbreak or reset up the encryption.

10 Can you do that in every case that you
11 have need for repairs?

12 MR. FREEMAN: So the modifications that
13 are done to the PlayStation do not involve blowing
14 any hardware fuses. So it does not -- you can put
15 it back to the same software state that it was in
16 originally and allow it to continue.

17 There are existing devices that in order
18 to make modifications to them, you essentially have
19 gone one way. You have taken a small bit in the CPU
20 and burned it so that it now knows it's been
21 modified but it doesn't care. And in the case of
22 work being done to the PlayStation, you are not
23 going to be doing anything like that.

24 MR. WIENS: And I don't know of any of the
25 game consoles that do that.

1 MR. FREEMAN: And I should also testify
2 that I don't know of any game consoles where that is
3 the case.

4 MR. RUWE: Mr. Wiens, have you ever
5 approached the manufactures to have permission to do
6 this fix?

7 MR. WIENS: We have talked to them
8 about sharing repair information. So, for example,
9 both Microsoft and Sony developed internal repair
10 processes for doing those repairs and we have asked
11 them to share that information with us and they
12 declined.

13 MR. RUWE: Sharing information, but I am
14 talking about permission to do what you would like
15 to do if there was an exemption. They could give
16 you that permission and you wouldn't need an
17 exemption if you have asked them.

18 MR. WIENS: Fair enough.
19 We engaged with the environmental teams of
20 both of these manufacturers. I don't know that that
21 specific conversation has happpended.

22 MR. RUWE: Maybe you should.

23 MR. FRANKEL: I just want to add that it's
24 still unclear to me -- and maybe I will never
25 understand -- that the specific repairs that they

1 are saying they want to do require a circumvention.

2 MR. RUWE: That conversation may clarify
3 that issue and for everyone.

4 MR. WIENS: So one other thing that I
5 would mention is we're talking about these problems
6 have happened in the past and affected millions of
7 these consoles.

8 We are looking at projecting out to the
9 next three years. And we have seen some interesting
10 hardware failures in the Xbox One and the
11 PlayStation 4, not near to the degree that we saw
12 them in the immediate aftermath after the release,
13 but it's very hard to look forward and project what
14 the repair market is going to be like three years
15 out.

16 MR. RUWE: I think you may have picked up
17 that we -- when faced with a broad exemption
18 request, we do look for ways to refine it and based
19 on the evidence in the record.

20 So it's not to say that we wouldn't be
21 open to some sort of evidentiary record to have a
22 forward looking exemption. We do look to refine
23 these.

24 And I think those conversations are
25 worthwhile.

1 And I understand your request and I
2 understand the obstacles but it seems like there may
3 be an opportunity to the extent that manufacturers
4 do not believe that this requires circumvention.

5 MR. WIENS: And I would just say regarding
6 our early conversations, that we have asked for help
7 with parts and we have asked for help with repairs
8 and we have asked for information on how to do
9 repairs and we have consistently been shut down
10 every step of the way.

11 MS. CHARLESWORTH: Any further thoughts?
12 All right, this will then -- oh, Ms. Gellis.

13 MS. GELLIS: Thank you. Thanks for a
14 closing word.

15 At the risk of repeating myself, one of
16 the things I have been emphasizing is to some
17 degree, while I understand the impetus to have
18 narrow exemptions, the fact that I think once a
19 computing device, always a computing device, is an
20 important distinction when we look at these
21 Classes 11 through 27, but I know that you want
22 data. So here is my example to add to the
23 conversation.

24 I have in my dad's attic an Atari 800 that
25 we got in around 1981. As far as I know, that is a

1 perfectly functional machine that unfortunately has
2 a slight problem with the select key which can make
3 it difficult to play games, but it would be very
4 nice -- and perhaps Mr. Wiens can help me fix it.
5 And then this machine becomes viable now as
6 something that can play all the games that we had,
7 all the games that were independently created and
8 all the games that may yet to be created or
9 otherwise unleash the whole computing power of that
10 device.

11 I don't know if that device is hobbled by
12 sort of TPM that would restrict its ability to be
13 put to use now, but it is something with circuitry
14 and it's lasted through the ages.

15 And what we're talking about now is a
16 number of consoles that can't be locked in people's
17 attics effectively because they're essentially going
18 to die and never be fixed and never be able to play
19 games that anybody created for them because they are
20 going to be waste or decomposed or something like
21 that.

22 I offer this data point partly in terms of
23 the fact that that was my generation's game consoles
24 and now we're talking about the next generation of
25 game consoles and will they survive through the ages

1 to be something that can be a valuable source of
2 computing power to them in the future, however they
3 want to put it.

4 And if the difference between my Atari 800
5 being useful to me today and a three-year-old
6 Nintendo not now solely because there is a TPM
7 keeping that power from -- keeping that device from
8 being usable in whatever way the lawful owner of
9 that device wants to use lawfully acquired
10 computational logic on that device, I think we have
11 a problem.

12 MS. CHARLESWORTH: That inspired another
13 closing comment.

14 MR. FRANKEL: Separately, just if it would
15 be helpful for the office, we would be happy to
16 provide technical information in response to
17 Mr. Wiens's comments as to whether TPM's are
18 implicated in the optical drive firmware switching
19 he referenced.

20 MS. CHARLESWORTH: I think we may send out
21 some follow-up questions. So if we are interested
22 in that, you will surely know. We would send them
23 out to the participants and you will be aware of
24 them. So thank you.

25 Mr. Freeman. I have a lot of trouble

1 shutting these down. Actually, we're always happy
2 to hear. So you can have the last word.

3 MR. FREEMAN: So this comment comes up
4 occasionally and I will talk about it more tomorrow,
5 but it's about alternatives such as being able to
6 use a PC in order to be able to do Minecraft mods.

7 A PC is a very expensive device in
8 comparison to some of the portable devices people
9 are able to play Minecraft on and we currently can't
10 do modifications without using of the software.

11 I appreciate that the existence of an
12 alternative is something that is supposed to be able
13 to be used as essentially trying to shut down one of
14 these exemptions, but if I were game mod
15 manufacturer and I constructed an alternative --
16 actually, let's take away game manufacturer. If I
17 were any of the exemptions that were coming to this
18 panel and there are 47 exemptions, I would say I
19 have another one, this one is open, this one costs
20 ten times as much, but now the fact that I sell it
21 at all -- I sold three of them ever -- but the fact
22 that I sell it means that you can't get an
23 exemption. It's essentially a backdoor way of
24 shutting down any ability to get any exemptions on
25 anything.

1 I think that it has to be a reasonable
2 alternative. And a lot of the kids who are playing
3 these games, the people that are doing these kinds
4 of modifications, they don't own a computer. They
5 may be able to borrow a computer from their parents
6 occasionally but they don't have the ability to rely
7 on the alternative that is being brought up for this
8 use case.

9 And again, this is something I will speak
10 to more tomorrow as we discuss the iPhone
11 jailbreaking.

12 MS. CHARLESWORTH: We look forward to that
13 and thank you. We will see some of you tomorrow.
14 And for those of you we will not see, we thank you
15 for your participation.

16 (The proceeding was concluded at
17 5:20 p.m.)

18
19
20
21
22
23
24
25

1 CERTIFICATE OF NOTARY PUBLIC

2 I, DARYL BAUCUM, a Certified Shorthand
3 Reporter of the State of California, do hereby
4 certify:

5 That the foregoing proceedings were taken
6 before me at the time and place therein set forth;
7 that a record of the proceedings was made by me
8 using machine shorthand which was thereafter
9 transcribed under my direction.

10 I further certify that I am neither
11 financially interested in the action nor a relative
12 or employee of any attorney or any of the parties.

13 IN WITNESS WHEREOF, I have this date
14 subscribed my name.

15

16 Dated: 6.8.2015

17

18

19

20

21

22

23

24

25


DARYL BAUCUM, CSR No. 10356

Capital Reporting Company
1201 Rulemaking Process Public Roundtable 05-20-2015

Page 1

<u>\$</u>	1400 86:2	25 315:5	<u>4</u>
\$10,000 41:18	144 86:15	2600 273:25	4 6:4 15:11 17:24
\$100 282:24	150 86:13,14	274:3,7	20:23 24:19,21
283:18	170 278:25 287:2	27 136:2 324:21	282:16 285:17
\$125 78:11	19 1:9 215:22	29 18:15,17	323:11
\$16 77:20	238:1 271:5	29.97 16:6 19:3,24	4.9 277:13
\$17 77:21	1942 172:11	2K14 193:7	4:00 270:3
\$170 78:9	1950's 32:22	223:12	4:15 269:25
\$2 74:1	1970's 91:17	<u>3</u>	4:20 271:3
\$200 282:18	1980's 239:3	3 6:4 9:14 76:23	40 101:16 187:24
283:17 284:5	1981 324:25	166:4 173:19	315:14
\$25,000 41:19	1990's 167:19	174:9,17,21,25	400 85:25
\$40 295:17	1998 136:8	264:1 272:5	46 50:1
\$400 282:19	<u>2</u>	273:23 274:9	47 327:18
\$5 72:20 73:8 74:2	2 11:16 171:24	275:3 276:4	480 16:6
\$9 83:3	172:12 173:4	277:1 278:2,23	486 16:5
\$99 142:25	174:1,9,12,17,21	279:8,13 296:1	4K 10:4 11:6,8,9
<u>1</u>	230:16 284:16	314:24 318:14	50:13,18 89:2,8
1 172:12 173:3,22	20 1:9,17 4:2 86:7	30 82:21 101:8	90:7,11 152:23
1:45 160:16,18	115:14,24	105:4 187:24	<u>5</u>
10,000 221:12	187:24 271:2	278:3	5 213:7
100 44:20 56:24	281:25 315:8	300 85:4	5:20 1:18 328:17
10356 1:23 329:20	200 82:22	30-second 105:2	50 80:18 104:12
108 243:11	2000 79:11	345,000 11:15	276:23 278:4
11 136:2 324:21	193:16,20	360 222:9 268:18	279:12,13,22
11:15 115:11	2005 230:15	273:23 274:9	500 205:18
11:30 115:9	2010 183:14 197:6	275:9,20 276:3	<u>6</u>
12 279:22	2012 56:13 61:8	278:23 279:8	6 1:9 8:17 9:8 49:9
12:30 160:20	70:11	285:19,21,25	80:21 276:1
1201 1:5 4:9,11	2014 171:5,12,17	286:4,5 314:25	6.8.2015 329:16
66:10 115:16	172:21 192:20	315:18 318:13	6:00 233:8
126:14 136:24	223:19	360Drives.com	60,000th 293:8,12
140:25 141:4	2015 1:17 4:2	281:18	600 84:22
144:23 160:23	271:2	360's 275:8 285:24	625 86:10
176:7 204:2,3	20th 8:21 31:20	286:1 315:8	639 76:11
218:5 264:22	76:18	38 279:23	<u>7</u>
280:22 307:21	21st 167:18	3D 182:23	70 277:24 279:11
309:3	23 1:9 160:14,18	263:23,25	
12-year-old 10:19	161:2	264:1,3,4,6,10	
		3DS 239:6	
		3's 315:8	

Capital Reporting Company
1201 Rulemaking Process Public Roundtable 05-20-2015
Page 2

284:19	abilities 121:17	absent 177:3	184:8,13,16
700 205:18	ability 23:17 34:7	absolutely 24:15	187:14 188:12
7000 281:18	38:10 96:11	26:4 54:11 89:5	193:25 198:16
70's 254:17	107:3,4 121:20	126:15 141:23	205:15
720 10:21 16:5,6	134:24 165:13	188:19 205:6	207:8,16,20
75 111:25	177:3 192:12	255:25 299:1	213:20 214:2,12
<hr/>	227:11 246:12	absolve 131:18	215:19
<hr/> 8 <hr/>	258:17 300:11	absurd 181:25	217:1,21,24
8 11:17	301:10,11	academic 197:14	219:15 226:18
80 111:25 277:24	325:12 327:24	235:20	229:6,7 235:8
315:20	328:6	academics 183:24	237:1,11,18
800 324:24 326:4	able 10:19 11:3	198:5 231:24	242:8 246:12
80's 165:12	14:20 41:5 43:16	academy 76:24	252:20 253:1
84 275:7 277:5	44:18 49:20	accelerating 85:3	272:20,21 287:9
278:24	52:11,12,14	accept 93:20 99:8	290:17 291:3
8-track 254:16,22	54:23 68:21 70:6	140:3	299:2 302:22,24
263:20,21	81:11 84:25	acceptable 12:11	303:18 307:10
<hr/>	107:23 108:21	19:18 92:13,16	308:17,18
<hr/> 9 <hr/>	110:25 111:19	94:4 99:23	accessed 49:20
9:00 1:18 4:3	117:11,12 133:7	101:25	119:6 218:8
90 173:5 280:5	137:13	accepted 13:18	accesses 135:5
315:20	138:11,18	130:5	accessibility
900 86:9	143:20 167:10	accepts 294:7,9	127:10
90's 253:3	168:6 171:10,14	access 9:1 13:16	132:2,5,12,14
<hr/>	173:6 174:23	34:7 49:22 52:22	133:2 187:9
<hr/> A <hr/>	175:2,16	78:3 81:24	251:20
a.m 1:18 4:3	176:8,14	82:5,25 83:10	accessible 73:15
115:11	179:24,25	97:4 107:3	190:23 253:1
AACS 3:21 87:6	184:13 187:6	110:24 117:12	accessing 127:17
89:11 90:2,3	193:17 194:8	118:22,25	135:9 154:16
AACSLA 88:16	196:10 214:4	119:6,11	accommodate
Aaron 3:4 7:25	225:21 232:5	120:11,14,18,22	79:14 304:3
116:9	234:12 243:2,20	121:5,16 126:24	accomplish 12:14
AAVS 95:24	252:2 274:5	128:16 131:15	151:15 320:24
abandoned 144:5	279:16,22	132:6 134:5,24	accomplished
160:15	282:23 283:7	135:1,17 137:11	205:9 302:17
161:3,15,17	285:5,10	138:16,19	according 20:24
193:22 238:5,22	286:10,25 288:8	140:18 141:11	43:1 83:3 129:19
263:18 264:12	289:12	144:10	142:14 275:7
266:12	290:16,23,25	147:3,21,24	320:13
abandoning	294:6,22 300:2	148:22	account 88:20
286:20	301:5,12,18	149:11,16	219:2
	308:8,12,25	152:23 154:15	accurate 34:3
	309:20 311:12	157:22 158:8	150:14,16 253:7
	312:22	159:23 178:1	accuse 208:7
	319:15,19 320:6	179:13,14	
	325:18		
	327:5,6,9,12		
	328:5		

Capital Reporting Company
1201 Rulemaking Process Public Roundtable 05-20-2015
Page 3

accustomed 251:22	171:11 211:7 238:6 247:25 260:20 265:22,23 290:16 316:20	300:20 301:5 306:1 312:6,7,9 317:8,20 327:1,16	172:23 187:15 201:18,22 204:16 213:11 225:2 229:14 230:7 237:6 257:13 267:18,19,25 268:20 292:7 293:17 316:16 317:17 319:22
achieve 155:20 267:23,24 314:9	actually 10:25 16:24 17:16 19:15 27:15 36:18 37:5 42:21 44:5 45:5 48:19 51:14,23 52:7,11 54:20 58:16 63:9,12 68:18 74:20 79:8,11,12,13 82:4 85:3,8 88:23 90:18 92:15 96:15 97:16 99:1,25 104:5 109:15 113:20 125:2 129:25 140:12 141:16 145:19 147:8 148:2 154:3,6,21 155:10 158:22 165:18 170:2,6,7 174:6,12 175:18 189:8 193:15 198:14,16 207:12 210:20 216:20 217:9 222:6 226:13 227:9 230:24 247:7,13,15,18 248:2,5,15,23 249:3,9,10,13,24 250:16 251:13 252:16 260:22 261:20,24 262:19 263:19 266:22 267:23 276:13 281:9 288:21 290:14 292:7,12 293:6,13 295:1,20 296:5,7,10,22,25 297:8,10 298:2	ad 195:23 adapt 24:7 133:6 211:20 adapted 207:2 209:17 210:1 211:8 adapting 75:18 add 22:18,21 42:25 47:6 61:19 83:24 98:19 101:12 106:17 162:6 179:4 192:16 239:15 269:14 294:23 299:21 300:4,16 313:4 322:23 324:22 added 16:14 299:22 addiction 109:19 adding 62:1 86:11 99:19 299:23,25 addition 50:22 84:21 253:11 311:17 additional 16:14 17:15 33:17 43:25 112:9 125:1 197:12 216:10 222:13 223:22 244:13 273:1 285:4 298:11 303:16 Additionally 294:14 address 53:11 66:5 71:15 93:25 98:20 100:11 128:12,21,22 133:1,9 134:5,23 139:17 141:3,4 145:10 146:24	addressed 98:10 218:23 addresses 136:11,19 228:12 addressing 259:4 adequate 24:5 adequately 145:10 adhering 20:5 adjust 132:6 administered 228:10 administrable 228:1 Administration 2:15 administrative 120:11,18 154:14 adopt 203:4 244:8 adult 65:14 adults 182:2 advance 86:22 183:21 286:8 advanced 9:1 81:24 238:4 advances 218:5 advantage 31:5 35:17 41:5 228:3 243:2 advantages 188:12 adverse 56:23

221:9 236:21 240:11 254:12 265:20 283:14,16 304:2 313:13 advice 35:20,23 309:2 advise 41:7 advising 35:24 affect 124:20 182:15 affected 171:25 298:8 323:6 affects 113:11 136:25 137:3 affiliation 7:4 afflicted 276:3 afford 261:4 affordable 316:20 afraid 64:5 206:15 aftermarket 286:6 aftermath 323:12 afternoon 160:22 161:1 170:14 afterwards 277:25 310:24 against 36:4 60:16 71:12 80:22 82:1,2 92:20 102:14 123:12 129:12 143:4 144:7 161:7 192:15 201:1 207:18 227:4 236:13 age 109:16 116:17 163:16 170:18 271:22 315:21 ages 234:5 325:14,25 aggressively 83:5 88:2,3 ago 12:8 24:3,10	25:17 26:11 72:18 73:19 78:15 82:19 84:6 85:5,25 86:5 112:9 142:1 232:21 233:9 285:20 286:5 288:6,21 289:18 agreed 235:24 agreeing 41:14 agreement 90:16 ahead 4:13 25:24 188:23 AI 186:1,15,18 192:15 219:10 aids 127:10 aimlessly 181:6 aired 46:6 Albert 163:9,10 170:13,14 172:15 173:17,22 174:2 176:20 177:5 178:11 179:5 189:7,8 192:25 201:11 202:12,25 203:16,22 226:21 231:17,19 250:21 251:4 258:22,23 260:17,22 261:5 Albert's 234:7 Alex 197:19,24 Ali 36:21 alike 182:2 alive 183:8 233:5 allegations 106:4 alleged 117:14 304:2 allegiance 185:19 all-encompassing	155:7 Allen's 31:12 alleviate 53:9 allied 84:23 85:15 185:10 allow 87:12 121:21 128:19 134:7,20 135:1,4 139:21,22 152:21 154:12 156:8 161:7,8 162:13 172:7 182:19 183:1,20 201:21 203:20 215:18 217:9 224:10 236:5 237:11,12 262:9 268:6 285:2,4 311:18 312:22 314:9 321:16 allowed 87:15 120:10 132:23 177:10 200:23 217:10 289:22 293:22 294:2 311:9 312:9 allowing 53:8 122:4 145:13 198:22 233:6 235:13 255:19 allows 113:24 153:1 198:14 201:21 299:13 all-purpose 252:10 alluded 28:18 225:11 236:15 allusion 223:12 allusions 139:3 ally 185:2 allying 185:15 alone 192:20 295:18 alongside 128:5	already 15:18 52:22 53:1 56:4 70:4 75:24 79:18 94:25 112:8,20 116:25 122:17 123:24 126:6 134:6 140:15 157:19 159:23 188:10 213:12 214:24 259:7,25 262:13 292:19 302:16 altering 293:1 alternate 175:3 177:20 alternative 13:14 98:7 100:11 118:12 128:1,4,8 153:4 177:2 186:22 216:16 260:5 262:1 267:7 272:3 300:13 301:2 306:19 327:12,15 328:2,7 alternatives 11:25 50:8 98:13 225:5 240:14 259:2 261:6 310:20 327:5 am 4:6,12,15 7:8,10,17,19,25 8:2,7,8,11,15,16, 18,25 9:3 15:12,15 16:21 18:2,22,23 22:24 27:6 31:1 43:19 44:6 46:22,23 47:23 51:24 56:1,2 57:21 61:4,23 64:14 66:23 71:11 75:2 76:16 77:3 78:19 82:13,15 88:7,15 89:21 103:15 115:2 116:15 119:9,13
---	---	--	--

132:10,11 138:25 140:2 141:18,20 143:13,14,20 146:1,23 149:13 150:5,10 152:16,17 157:23 161:5 163:5,6,7,10,14, 15,17,20,21 164:8 165:22 170:15,16,24 172:18 180:18 188:24 190:21 192:4,6 195:21,22 196:3,25 197:1 201:9 204:5 206:7,10 209:14 212:7,20 213:12 223:10 229:24 235:18 239:16,17 241:9,15 243:16 246:13,23 247:24 250:21 251:5,14,15,18 257:2 259:24 264:10 268:16 271:21,22,24 272:4,7 274:3 287:12 291:22 295:23 297:13,18 301:25 304:5 305:16,17 307:5,6 309:4,11 318:13 322:13 329:10 amateur 245:24 Amazon 84:23 85:17,22 121:12 122:8 America 3:18,19 25:7 280:18 297:3,6 American 46:2,7 50:15	among 45:1 194:22 228:2 245:11 amongst 167:20 amount 11:7 81:20 93:14 102:2 156:9 187:11,14 190:25 198:3 256:21 279:4 282:14 290:15 amounts 158:6,7 175:16 259:21 amply 265:23 analagous 263:19 analog 10:20 114:13 analogy 191:17 254:15 255:5 analysis 20:6,19 28:11 30:18 228:15 analyze 167:17 analyzed 165:14 ancillary 78:17 80:17 and/or 222:14 anecdotal 278:8 Anecdotally 315:10 Angeles 7:15 50:16 Animal 181:19 animated 68:9 annals 181:23 announced 176:21,25 answer 38:4 42:3 47:18,23 48:4 54:21 63:9 66:24 74:17 111:14 141:23 153:24	196:16 268:1 anticipate 198:12 anticipating 300:25 anti- circumvention 197:12,17 200:6 266:25 anti-piracy 205:10 281:4 anybody 137:20 139:12 325:19 anymore 9:25 264:4 285:16 anyone 28:5 54:3 109:12 123:2 125:19 184:2 215:4 261:13 299:6 anyone's 118:11 anything 7:2 12:14 22:18,21 47:5 74:13 103:9,23 106:5 111:13 125:6,11 128:22 138:13 141:15,22 174:19 179:3 195:19 222:21 265:16 289:23 293:8 302:1 313:4 321:23 327:25 anyway 145:12 193:5 218:22 226:16 321:4 anywhere 248:25 ap 150:2 151:3,23 apart 63:14 APIs 148:14 apologies 18:9 apologize 56:15 70:6 266:8 app 272:3 296:2	300:13 apparently 6:11 98:7 appart 276:24 appealing 98:6 appear 195:22 APPEARANCES 3:1 appears 188:16 appendix 32:9 191:4 Apple 16:23 17:7,12 143:7 applicable 89:7 application 120:23 121:3,6 132:23 133:17 142:19,24 146:18 147:23 148:8 151:25 204:13 210:14 applications 79:11 118:12 120:17 121:13,25 122:9,10,18 127:4,7 128:20 133:17 134:8,12 146:17 148:21 153:2 154:18 210:19,25 applied 57:10 166:8 applies 44:4 47:2 110:20 237:8 apply 27:4 29:5 136:2 151:23 179:16 217:5 applying 59:15 appears 317:1 apple 299:5 300:15 apple's 299:10 application
--	---	---	---

<p>294:12 299:15,17,25 300:2,5,9,10</p> <p>application/ modification 295:19</p> <p>applications 295:15 298:11 299:11</p> <p>applies 305:18</p> <p>appreciate 327:11</p> <p>approached 322:5</p> <p>appropriate 303:11</p> <p>approximately 315:13</p> <p>appreciate 42:2 70:5 107:14 114:23 160:10 207:4 249:17 257:1 258:21</p> <p>appreciated 69:20</p> <p>appreciation 23:8 183:13</p> <p>appreciative 5:6 241:10</p> <p>approach 155:2 183:18</p> <p>approached 169:8,11,14,15 261:3</p> <p>approaching 78:14</p> <p>appropriate 44:12,20 49:8 102:12,15 220:4 227:13</p> <p>appropriately 214:9 244:16,18</p> <p>approximation 25:9</p>	<p>apps 297:25 300:12 314:8</p> <p>aps 151:8</p> <p>arcade 174:5,13 175:1 198:17 200:14</p> <p>arcades 175:3</p> <p>architecture 133:18 156:6,15,16 157:1,2,6 159:11,13,14,17, 19,20</p> <p>architectures 157:3</p> <p>archival 32:3 34:1 36:8 52:10,12 66:13 85:2 90:24 197:3 240:23</p> <p>archive 245:21 252:6</p> <p>archived 243:11</p> <p>archives 197:6 253:24</p> <p>archivist 197:14</p> <p>archivists 240:21</p> <p>area 29:8 31:19 70:21 114:25 152:3 280:13</p> <p>areas 5:16 162:16</p> <p>aren't 27:18 132:5 162:17 171:7 192:14 216:12 219:2</p> <p>argue 46:9,17 75:2 123:11 154:5 292:3</p> <p>argued 117:10</p> <p>argument 93:20 126:7 130:16 131:1,12 139:23 140:3 291:19 301:1 315:4</p>	<p>318:21</p> <p>arguments 39:3 77:4 117:6 118:7 161:6 300:25</p> <p>arm 157:2</p> <p>Arma 171:24</p> <p>arose 118:13</p> <p>Arrow 31:18 65:15</p> <p>art 3:11 8:15 25:7 30:14 163:5 182:23 189:14 197:20 243:24 244:1 254:19</p> <p>artful 190:1</p> <p>article 215:3 238:15,19</p> <p>articles 151:12 244:18,21,24</p> <p>articulated 214:14 215:20 217:3 302:8</p> <p>artifact 190:1</p> <p>artifacting 12:25</p> <p>artifacts 12:18 13:11</p> <p>artificial 186:19 219:10</p> <p>artistic 166:24 197:9 254:21</p> <p>artistically 165:25</p> <p>Artists 23:4</p> <p>Arts 3:5 7:20 8:2,8 107:18 219:16</p> <p>Asia 280:6</p> <p>aside 188:23 237:12 242:23</p> <p>aspect 11:13 64:20 191:7 198:1</p> <p>aspects 110:6 135:6 151:20 286:20,21</p>	<p>aspirations 166:24 168:2,3</p> <p>asset 264:8</p> <p>assets 8:22 77:16 85:7 247:4 248:15</p> <p>assign 6:9 290:25</p> <p>assignment 291:2</p> <p>assistance 55:25</p> <p>Assistant 2:10,12 4:15,19</p> <p>associated 83:11 111:17 294:5</p> <p>Association 3:17,18,19 7:23 8:4 163:25 164:2 272:10,12</p> <p>assortment 182:22</p> <p>assume 37:15 103:10,11</p> <p>assumed 71:3 200:6</p> <p>assuming 93:18</p> <p>Atari 273:25 274:2,7 324:24 326:4</p> <p>attachment 165:5,6</p> <p>attack 95:25 121:17 129:4 320:6</p> <p>attackers 144:8</p> <p>attacks 144:8</p> <p>attempt 214:20 296:12</p> <p>attempting 306:25</p> <p>attention 62:14,17 81:21 110:9 143:17</p> <p>attic 324:24</p> <p>attics 325:17</p>
--	---	---	--

attitude 46:7	availability 310:23	Azentium 163:21 180:8,9,18	276:19 312:24
attorney 116:16 163:15,17 268:17 271:22 329:12	available 10:5,6 16:14 17:5 36:12,13,15 39:13 42:19 47:23 52:14 60:4 73:5 78:3 80:25 84:12,15,22 85:13,20 86:1,4,11 89:10 91:22 92:7,23 93:4,13 94:12,24 95:2,4 98:8,12 100:19 102:8 111:8,12 112:14,16 114:12 132:3,5 133:12 135:3,7,15 148:3 188:5 192:14 216:17 220:11 222:11 243:10,25 263:14 285:14 304:12 310:20	<hr/> B <hr/> backdoor 327:23 background 142:22 backup 244:7,8,11 bad 96:25 149:15 balance 255:24 balanced 143:4 ballets 247:6,9 ballpark 221:12 ban 189:21 253:25 Barbara 290:8 barely 10:22 24:4 181:6 184:18 bargain 194:18,24 barriers 303:22 base 17:19 253:20 264:14 314:4 based 38:9 39:1 59:21 64:24 71:10 87:16 103:3,13 128:8 143:24 152:18 180:19 278:9 291:24 313:11 315:10 323:18	basis 38:12 71:24 96:14 97:17 290:2 basketball 167:16,19,24 battle 296:14 297:1,2,8 Battlefield 172:11 Battlefront 172:12 Baucum 1:23 329:2,20 BBC 99:24,25 Beach 32:14,20 beat 274:13 became 104:18 109:17 beckons 182:25 become 24:12 145:6 182:5,7 189:16 213:25 becomes 35:8 70:3 81:2 186:13 189:18 325:5 becoming 180:20 begin 9:7 beginning 6:17 155:3 193:15 238:3 behalf 7:22 8:9 60:13 116:10,24 145:24 163:5,15 206:6,9 271:22 behavior 289:22,24 behind 60:3 belief 124:23 believe 17:10 24:20,21 72:3 76:9 81:12 83:17 94:18 138:1 144:3 152:24
audience 44:14 268:16 286:2			
audiences 51:8 109:5			
audience's 62:13,17			
audio 292:18			
audiovisual 6:6 7:6 9:9 71:15,16 217:6,12 219:21			
Australia 205:16			
authenticate 167:8			
authenticated 84:13			
authentication 161:11 170:20 171:15 199:9 202:13 203:25 204:17 209:18 222:19 223:5,11 224:7 236:5 254:19			
authenticity 194:2 204:19			
author 182:8			
authority 169:23			
authorization 260:16			
authorize 290:20			
authorized 21:5 130:20 285:22 295:5 298:8			
authorizing 319:12			
automatically 143:25			
AV 61:3			
	average 79:12 avoid 148:18 162:5 266:17 avoided 111:18 avoiding 111:19 award 76:24 aware 71:8,11 82:13 97:14 195:21,23 196:25 197:1 223:10 235:12,15 236:10,12 326:23 awareness 45:1 away 116:21 165:7 176:15 195:15 220:16 282:15 283:1 327:16 awesome 296:6	bases 189:1 basic 6:13 95:12 basically 19:6 40:10 46:6 51:10 71:3 73:20 78:23 85:15 95:19 100:13 159:12 161:15 202:11,23 203:14 208:15 209:9 211:20 215:13 224:25 234:19 237:15 244:14 262:10	

<p>169:14 172:17 194:4 242:4 266:19 285:23 286:2,3 304:13 324:4 belong 161:23 benefit 194:24 242:5 Benchmark 3:4 7:25 47:21,22 108:15 109:2,9 Bergman's 25:13 besides 191:6 best 44:24 50:4 54:21 57:8,10 78:3 98:17 112:13 143:11,15 155:17 182:24 201:12 240:25 257:17 better 21:8 28:14 29:18 32:1 75:17 106:25 124:13,15 149:13 198:8 219:7 228:8 232:22 248:24 261:17 294:23 beware 221:18 beyond 61:3 71:19 102:23 103:9 118:11 141:15 198:15,22 206:18 biggest 80:13 Bill 25:18 billion 77:20,21 83:3 275:16 billion-dollar 275:11 bills 260:2 biopic 29:21 31:24 38:1,17,18,20</p>	<p>65:12 bi-op-ic 38:2 biopics 29:24 38:25 39:24 55:15 65:6 Birdman 76:24 bit 5:20 16:22 25:22 51:6 53:19,20 67:18 68:8 73:4,12 79:3 88:24 92:14 95:10 96:10 106:17 109:22 115:8 131:2 140:4 155:16 173:1 198:18 201:12 259:20 262:2 273:13 289:4 291:23 298:17 314:13 316:24 321:19 bits 103:20 158:24 248:14 black 25:20 137:19 bless 139:16 145:18 blessing 141:5 blind 127:14 block 299:21 blowing 321:13 Blue-ray 101:3 Blu-ray 10:7,19 11:4,16,22 12:3,6 37:18 49:19 61:1 72:3,4,9,13,15,2 5 73:14 75:4,8,9,12 77:17 80:9,12 81:4,25 82:9 83:11 85:12 87:23 89:7,12,16,20,24 90:21 91:22</p>	<p>92:2,7 93:23 94:6,23 95:9,19 96:19 100:20 101:10 111:11,19 112:1,4,8,18,21, 25 113:11,14 264:10 281:6 Blu-ray-only 93:19 Blu-rays 14:20 36:13 91:2,3,9,15 111:6,7 Blu-ray's 96:11 blurred 27:18 32:11 38:23 39:22 blurring 244:6 board 28:23 29:14 156:24 276:6 278:5,17,18 281:1,2,7,12,15, 20,24 282:1,9,17 283:11 285:7 306:10,11,24 308:5,15 309:24 316:2 318:5,11,22 boards 281:10 283:21 bodies 25:19,20 body 92:5 Bolich 290:9 Bombay 32:14,20 book 31:12 105:4 bootleg 37:3 Borderlands 171:23 borderline 282:20 borrow 328:5 bottom 298:21 bought 72:17</p>	<p>174:10 195:18 222:5 259:14 285:19 286:3,5 318:5 boundaries 58:5 Bourne 31:20 68:7 boutique 7:14 Bowman 50:14 box 78:10 boxes 85:23 114:7,13 251:6 boxing 36:21 Boy 318:4,6,8 Boys 31:15 brain 232:19 brazenly 148:24 break 78:14 114:16 115:9 160:13 178:10 267:12 318:5,6 breakdown 86:8 315:2 breaking 25:1 204:5,7,8 313:16 318:1,4 brevity 15:15 brew 311:5 bridge 72:23 brief 5:11 111:14 115:9,21 147:18 162:11 164:4,7 206:7 247:1 264:18 271:15 302:6 briefly 6:17 26:25 31:7 56:11 64:12 162:11 233:14 259:1 262:25 313:5 bright 53:21 102:13,14 104:3,6,11,22 105:14,22</p>
---	---	---	--

106:20 bring 32:14 62:2 231:2 266:24 bringing 295:23 broad 246:4 257:9,19 317:11 323:17 broadcast 12:22 13:13 14:11,13,15 52:5 55:8,10 broadcasters 24:14 26:6 broadcasts 52:3 Broadcom 156:25 broaden 98:2 broaden 186:9 241:14 266:22 317:8 broadly 98:8 198:11 252:23 broken 179:1 314:2 Bros 239:4 253:13 brought 25:5 70:8 108:8 114:6 328:7 browser 122:10 218:15 Bruce 3:20 8:25 75:20 88:15 budget 78:10 build 8:23 125:23 128:20 156:8 176:23 200:9 264:21 300:19,20 building 88:1 157:9,12 164:17 175:22 186:6 254:16 294:20 298:4 built 125:17	156:18,24 157:1 176:12 230:2 281:4 294:18 308:11,14 bunch 88:6 98:15 148:14 186:12 241:7 bundle 63:14 bundling 212:17 burden 53:9 72:5 105:24 burn 308:8 burned 13:23 321:20 burning 284:11 business 8:23 76:18 77:5,21,22,24 78:1,7 79:9,10,12,24 81:13 87:20,24 112:4 113:20 153:17,19 273:16,17 284:25 288:15 button 142:16 253:15 buttons 294:21 buy 83:22 111:19 142:25 175:24 177:25 191:9 196:16 220:10 222:17 230:23 273:20 285:20,25 295:11 310:1,12 316:12 buying 274:6,7 buys 195:6 221:17 bypass 109:10,13 136:25 137:2 179:24 273:3 306:13 319:19 bypassing 137:9	318:10 bytes 248:14 <hr/> <div style="text-align: center;">C</div> <hr/> cabinet 167:21 174:5 cabinets 175:1 cable 14:15 81:20 85:23 86:18 calculations 219:13 calendars 164:25 California 4:2 32:2 180:22 271:2 290:8 329:3 Callif 3:8 7:14 26:16 Calvin 20:10,25 24:18 camcorder 80:24 112:15,24 camera 141:24 142:21 cameras 138:8 Campbell 62:16 Campbell's 40:10 Camtasia 17:8,11,14 21:20 Canadian 76:18 cannibalizes 113:6 capabilities 15:20 160:6 capability 210:9 capable 152:20 179:21 182:23 capacity 165:12 170:16 187:4 210:17 cappability 307:6,18 cappable 295:21	309:6 captioning 132:22 capture 10:21 12:1,2,4,6 15:20 16:1,3,19 17:14,17,19 18:4 19:11,21 21:13,17,20,25 22:4,8 50:10 70:12,15,20 71:12 captured 71:6 capturing 18:21 67:22 car 272:23 273:5 277:8,10 cards 199:7 care 21:8 115:7 321:21 careful 258:8 carefully 56:5 58:25 155:5 162:19 213:1 243:11 257:21 292:21 carry 131:12 cars 164:25 cartoon 13:10 31:22 cartridge 289:20,21,22,23 292:10 318:11 cartridges 165:11 case 10:18 41:7,9 65:15,16 68:7,11,13,14,17 ,18 76:2 103:15 111:11 127:13 130:22 136:5,20 145:3 168:25 169:17 172:2 176:24 178:17,18,19 186:25 195:14 199:14 203:17
--	--	---	--

205:12,13 208:15 215:9 244:10 250:1 263:25 265:21 267:1 269:21 271:6 273:5 278:2 289:25 290:22 295:7 319:17 321:7,10,21 322:3 328:8 cases 10:11,17,24 11:2 31:8 47:3 62:16 68:1,5 92:24 99:23 104:3 130:21 168:18 202:1,15 208:24 225:16 233:24 245:10 266:23 293:23 295:3,4 299:23,24 cassette 254:17 292:24 catalogs 149:3 227:1 catch-up 55:9 categories 14:9 246:17 category 87:3 91:22 178:8,9,24 311:23 Catherine 116:15 163:14 271:21 Cathy 200:24 Caucus 7:10 causal 256:2 cause 15:3 256:15 caused 118:2 253:24 caution 82:2 105:6,21 cautioned 102:14 cautious 104:10	cautiously 213:1 Cavett 46:6 91:16 CD 292:24 293:4 cease 104:15 celluloid 190:3 center 147:6 319:14 century 3:25 8:21 31:20 76:18 167:18 certain 52:13 68:23 103:16 120:16,17 126:21 132:6 133:13 143:13,15 170:9 176:12 182:20 220:10 247:22 250:2 255:10 307:7 311:12 316:6 certainly 11:19 15:3 20:3 21:4 45:9 49:24 51:7 55:21 75:4 79:25 103:8 106:10 113:16 124:1 127:11 134:3,15 142:17 143:2 152:11 153:11 159:21 190:25 202:25 205:13 250:2 257:21 274:7 318:9 certificate 142:25 202:2,10 329:1 certified 8:1,7 329:2 certify 329:4,10 Cesar 31:24,25 66:5 cetera 133:21 134:21 157:12 chain 320:6	challenge 77:25 85:6 112:13 280:23 challenges 56:4 challenging 216:23 281:16 282:7 chance 6:17 28:14 29:18 111:10 183:9 185:2 187:25 188:6 change 9:24 10:3 17:6 24:12 132:23 156:1 201:21 202:5 203:24 204:16 264:25 265:16 269:5 277:15 289:24 309:19 changed 9:17 10:17,25 171:18 303:3 changes 24:6 196:13 201:3 202:9 203:12 261:16 301:13 changing 77:22 78:17 87:20 201:6,7,18 channel 127:8 134:20 channels 230:3 character 248:2 characteristics 126:21 233:3 characterization 36:5 characters 27:24 39:2 166:19,20 219:11 charge 41:23 178:3 300:18 Charlesworth 2:5 4:4,6,23 6:3,5	9:6 10:14,24 11:2 13:3,8 14:7 15:9 16:8,13 17:18 21:10,12 22:3,12 24:19 26:12 27:6 28:8 30:5,16 34:8,11 35:19 37:11,19,22,25 38:12 39:9 41:22 43:2,17 45:20 46:17 47:19,25 49:10,14 51:19 52:17 54:8 55:6 56:19,22 57:20 59:11 60:6 61:20 62:20 65:5,23 69:21,25 70:19 71:14 73:1,10 75:7 76:14 78:22 79:15 81:7 82:6 84:19 88:4,12 89:25 90:5,15 91:19 93:16 94:8,21 97:21 99:7 100:10,24 101:11 102:20 104:5 105:12 106:12 107:6,14 108:9,24 109:4,11 110:10,14 111:2,7,13 113:25 114:19 115:13 116:6,20 119:4,10,15 121:19 122:19 125:11 126:8 135:21 138:20 139:23 141:18 144:13 145:21 146:21 151:2 152:1 154:8 155:1,22,25 159:4 160:7,22 162:1 163:9,13 164:3 168:9 169:5,18 170:5,12 172:13 177:23 179:3,6
---	--	--	---

180:2,6,9,12,15 184:6,12,22 186:18 187:5 189:7,10 190:6,21 191:16 192:3 194:10 195:5,16 196:3 199:4,22 200:1 203:18 211:12 212:12 213:2,6 220:6 221:5,16 222:15 223:7 224:2,13,16 227:17 228:6 229:4,8 231:16 233:12 234:2 236:9 238:3 240:17 241:3 242:9 243:7 244:20 245:13,16 246:1,22 249:1,16,23 250:18 251:12 252:4,21 253:21 255:13 257:1 258:20 260:6,20 261:1 263:15 264:15 265:17 268:1,4,9,14 269:22 271:4 272:13 273:10 275:25 277:14,18 278:6 283:22 285:12,21 286:7 287:22 288:13,18 290:19 291:5,12,17,21 293:1,18 296:20,24 297:11,20 301:21 302:3 304:8,16,19,23 305:3,7,12 306:3,19 307:13 308:16 310:13 311:24 312:5,16,24	313:3 314:11 319:5,10,25 324:11 326:12,20 328:12 chart 11:9 Chavez 31:24,25 32:5 66:6 cheapper 316:7 check 120:9 130:11 202:10 204:19 223:11,14 checking 129:15,22 130:5 294:6 checks 8:13 194:2 215:2 320:18 Cheney 2:13 4:21 13:20 14:6 45:11 61:16 113:9 132:1 204:4 205:4 226:10,17 314:12 317:12 321:7 Chicken 208:8 child 120:16 children 109:16 182:2 274:22 chilling 33:10 176:6 296:15,20 320:25 China 280:7,8,12,16 chip 157:1,2 276:6 chips 135:10 choice 131:14,21 choose 135:14 140:20,22 253:16 chooses 125:20 choreographed 33:4	choreographies 247:8 chosen 135:7 Chris 7:13 42:7 48:13 CHRISTOPHER 3:7 Chromehounds 183:12 184:11 186:25 239:25 church 249:8,9 cinema 10:1 14:18 67:20 circle 199:7 206:4 circles 274:19 circling 164:4 circuit 208:23 circuitry 325:13 circular 59:12 circumstance 57:10 circumstances 39:3 103:17 201:23 225:15 262:18 circumvent 21:1 67:24 72:22,25 90:21 91:10 107:11 108:13 112:8 121:23 124:14 126:11 139:25 140:5 143:20 154:14 171:15 255:20 257:19 260:13,16 267:5 282:4 306:5 307:8 circumvented 20:12 80:3 101:10 138:22 305:22 306:1 307:11 circumventing	21:22 22:2 92:24 107:11 124:19 142:20 159:23 circumvention 4:11 11:25 13:15 21:15,17 22:5,10 36:4 53:4 59:9 67:14 70:20 71:21 86:23 93:3 95:17 98:13 106:22 113:15 129:14 130:14,23 150:23 161:8 189:21 204:14,18 215:19 217:21,23 237:1,18 254:1 255:8,15 257:24 259:2 260:7 277:16 283:14 302:24 309:17 323:1 324:4 circumventions 129:24 circumvents 129:8 cite 68:1 215:2 cities 185:9 262:20 citing 64:17 city 262:14 civil 91:13 claim 37:10 38:25 68:11,12 93:22 225:6 claimed 36:22 claiming 37:5 claims 41:20 59:10 102:19 238:11 266:25 clarification 114:5 227:14 311:25 clarified 269:8 clarify 5:9 63:11 90:10,19 100:24
--	---	--	--

110:20 119:15 226:22 250:22 267:14 286:12 323:2 clarifying 155:13 clarity 106:18 class 7:12 8:17 9:8 19:25 20:2 29:6 49:9 61:21 70:2 93:2 115:14,24 134:17 136:3,4 140:4,13 154:9 160:14,18 161:2 163:19 179:9 196:6 213:20 214:7,22 215:22 216:9,13,16,19 217:3,13 219:24 220:4 227:15,21 228:1,23 238:1 244:16 269:19 271:5 272:16 288:20 296:19 312:3,7 317:7 classes 1:9 61:25 64:3 69:16 136:2 139:15 144:19 179:9 214:9 220:2 245:5 324:21 classic 209:10 239:2 classics 48:22 classified 284:22 clean 69:22 209:22 clear 28:5 40:4 62:10,11,21 69:25 74:6 76:5 82:24 90:5 104:21 106:3 120:8 124:18 129:5 150:23 153:20 156:22 161:16 162:17 203:18 204:6 211:22 213:25 216:7,13 258:1	260:12 263:5,7 277:14 305:17,21 306:1 310:17 clearance 26:21 104:13 clearer 62:8 clearly 33:4 52:13 63:17 64:2 103:19 110:19 263:13 309:23 click 18:14 client 34:15 39:15 119:2 134:3 201:19,25 269:10 clients 42:13 44:10,13 60:14 71:9 85:19 107:19 147:17 150:7 207:6 220:13 305:14 client's 143:22 client-server 204:12 Clinic 3:6 7:21 8:2,8 Clinics 107:19 clip 12:16,24 15:19 16:7 17:24 19:14 20:10,20,21,23 24:18 25:8,17 28:15 30:18 31:15 42:9 44:7,11,15 45:17 46:5,10 65:20 67:22 68:10,13 79:9,21 100:6 101:21 102:22,24 103:6 clips 9:20 12:10 15:16 16:10,14,16 26:9 32:6 35:13,24 40:2,19 42:12,14	57:24 63:15 65:10,16,21 66:8 68:5 79:7,17 82:9 98:3 99:13,14 102:10,11 103:4,13,24 105:16,17 107:10 255:6 close 20:6,19 25:10 61:9 78:13 83:3 189:5 closed 132:22 closely 44:2 279:15 closer 62:2 255:14 closes 182:16 closing 264:18 324:14 326:13 cloud 218:5 219:12 cloud-based 219:20 cloud-computing 219:7 CNN 9:23 coalition 7:24 8:4 206:11 271:25 313:6 code 83:22,23 209:1,9,17,20,21 ,22,23 210:1 228:25 229:1 244:12 268:19,20,24 289:3 290:16 291:6 293:2,3,12,16 299:20,21 305:20,22 coded 201:19 203:6 codes 182:22 299:21	coding 313:17 co-filed 163:11 cofounder 180:18 coin 46:19 collaborating 206:21 colleague 232:10 259:7 262:6 colleagues 4:8 170:23 212:3 colleague's 37:12 collected 166:25 168:14 169:6 collection 166:9,11 169:11,12,16 collections 166:7 227:3 collects 158:23 color 132:23 Comcast 85:24 comes 46:1 67:16 80:12 81:23 95:23 101:23 112:16 195:8 214:23 221:25 224:1 249:13 260:2,15 327:3 comfortable 259:17 comical 276:9 coming 35:18,22 37:14 45:25 46:3,8 63:3 70:22 87:19 131:4 198:5 233:12 292:7 313:9 327:17 commendable 254:6 comment 20:14,16 22:22 31:6 33:11 43:4,9,14,24
--	--	---	--

45:13 53:15 60:24 61:6 62:1 63:5 64:15 97:25 102:23 106:15 112:23 114:1 128:11 155:21 191:5 246:25 247:1 258:21 326:13 327:3 commentary 6:23 29:15 30:22 45:6,7,19,21 47:14,17 59:20 102:24 106:24 107:23 231:18 commenting 44:5 46:10 comments 5:14,17 15:14,17 16:2,11 20:1 28:3 30:8 50:19 56:8 58:18 72:7 74:16 88:19 89:2 98:21 102:5,17 114:24 116:5 120:2 121:2 127:6,11 128:10,23 132:13,16 134:9 137:6 144:18 149:12,14 153:11 162:19,21 177:24 197:25 200:12 207:5 211:24 214:10,25 216:8 217:16 219:6 225:18 226:2 233:19 234:7,22 235:9 240:4 263:11 272:16,17 290:24 293:7 303:9 309:7 313:7,11,12 326:17 Commerce 2:15 4:22	commercial 67:6 80:1 92:23 166:17 194:19 234:19 246:18,20 commercialize 295:1 commercially 82:4 commit 240:25 committee 9:17 commodity 244:3 common 192:15 193:2 204:21 205:7 254:9 315:23 commonly 129:24 130:14 commons 315:16 communicate 177:11 communicated 233:15 communicating 230:3,4 communication 23:13 26:1 161:4,9,10 170:3,11 177:10,21 189:13 200:18 204:12 237:19 249:10,12 254:20 communications 161:13 200:21,22 communities 119:1 170:22 171:14 172:6,9 175:9 176:6,11,14,15,1 7,22 183:1,3 203:4 220:22 226:3,24 233:5 240:2 253:5	259:6,9,22,24 262:4,5 community 26:3 92:21 98:1 128:3 171:25 173:13 178:2 183:23 186:9 188:22 200:3 225:20 232:12,13 233:7 242:2,7 260:4 261:21 265:13 274:4,11 community's 183:5 companies 9:4 41:13,20 50:24 86:18 165:5 177:8 206:19 221:4 236:4,11 254:14 310:10 company 86:18 167:5 169:9 174:11 177:16 205:15 241:23 260:19 261:3 272:2 278:14 310:4 compare 314:20 compared 45:3 comparing 297:21 comparison 19:1 108:22 327:8 compelling 282:24 competent 277:10 competing 147:23 compilation 159:12,16 160:3 compile 134:7 156:5 compiled 156:16 complacent 145:6 complete 171:11 190:24 208:10 319:18	completely 29:12 103:16 122:20,24 193:13 202:21 276:24 295:5 complex 101:18 200:24 217:11 294:17 296:14 complexities 214:1 compliance 197:16 complicated 10:17 11:6 comply 130:4 component 194:15 206:23 207:17 230:12 253:4 307:1,2,3 318:17 components 230:9 284:3 318:15 320:3 comprehended 165:14 comprehension 164:21 comprehensive 171:9 compressed 100:19 comprise 166:10 248:15 compromise 95:11 compromised 97:14,15 compromises 95:9 computational 326:10 computationally 124:5 157:16 computer 12:3,4,5 96:19 97:11 100:16,23 120:12,13
--	--	--	---

123:23 124:11,17 126:19,20,23 127:20 136:4,5,6 149:13 158:15 159:19 164:15 179:11 266:3 292:2 293:2 294:4,20,21 313:21 316:9 328:4,5 computer-embedded 154:13 computer-generated 219:11 computers 122:10 124:1,6,9 136:6,7,20 226:15 294:18 313:20 321:6 computing 136:11 143:5 179:10,20,25 273:6,7,8 287:5 324:19 325:9 326:2 concede 21:16 192:4 256:12 conceding 58:19 conceivable 107:24 conceivably 47:12 conceived 182:9 247:13 concept 244:6 concern 6:11 75:11 81:7 113:11 123:6 138:24 139:6 140:12 143:3,4 144:21 172:18 179:8 194:14 212:14 255:23 258:19 266:9	267:3 317:1 concerned 88:24 107:1 208:11,14 210:4 211:2 212:5 255:18,19 260:24 280:14 314:5 concerning 20:9 212:10 concerns 80:2 86:25 94:14 106:2 108:7 119:23 133:2 141:3 145:10 153:10 198:19 203:14 211:4,6 228:12 257:3,10,14 conclude 144:14,17 concluded 115:10 160:19 270:2 328:16 conclusion 309:1 concrete 202:4 221:14 condition 43:4,8,24 85:7 228:24 conditions 32:2,4,7 conduct 106:23 136:18 208:21 212:9 confess 66:7 224:4 confidentiality 260:25 configuration 131:25 configurations 158:4 conflation 217:16 Confrontation 192:22	confused 244:19 confusing 59:22 90:1 confusion 89:14 Congress 136:7 141:16 197:7,22 241:12,25 258:11 280:13 conjecture 265:24 connect 173:24 176:1 192:13 201:25 248:17 253:16,17 267:17 connected 164:15 177:14 202:13 222:9 231:7 246:2 connecting 176:19 230:18 connection 72:15 82:8 149:24 166:21 167:17 210:13 238:1 248:11,20 276:6 connector 114:17 connects 201:19 consequences 93:8 136:12 Conservancy 116:10,11 119:3 Conservancy's 118:20 conservative 41:15 consider 4:10 20:3 29:6 140:6,16 161:2 190:19 213:18 246:17 considerable 81:20 consideration 115:5	considered 150:13 194:3 302:11 considering 69:19 150:10 154:11 considers 34:12 79:11 consistent 145:20 194:6 320:12,14 consistently 324:9 consisting 161:9 console 96:20 114:10 166:4 173:16,17 178:19 201:4,5 202:18,20,21 203:1,14,15,16,2 5 204:2,7,10,23 205:11 215:6,12,18,21 225:14 229:20 237:22,25 255:20 265:25 269:2 273:24 274:10,20 277:25 282:13,19 289:9 292:9 298:15 301:7,16 302:15 303:20 304:9 309:19,20 311:18 312:2,13,14 313:1,20 316:8,21 317:22 319:6 console-based 215:2 consoles 85:23 114:8 173:21,23 178:14,18 203:9,21 204:22 205:8,12 206:14,17 207:1,23 210:6 211:1,4 214:16 215:8,16 232:22 237:12 239:6
---	--	---	--

255:2,15 257:11,20 268:18 273:19 275:17 277:5 285:15 289:5 300:23 301:11 302:24 303:1,16 311:13,19 314:4,7,20 315:3,6 316:11,19 317:2,6,9,20 318:1 320:20 321:25 322:2 323:7 325:16,23,25 constantly 143:8 constitute 108:2 267:20 constrained 44:17 constraints 256:25 constructed 327:15 constructing 292:9,11 293:14 construction 294:18 construed 204:14 consume 273:2 consumer 77:21 78:2,18 194:18 195:6,11,19 196:7,10 220:8,14 221:17 233:16 264:14 319:16 consumers 82:25 83:9,14,16 84:3 87:12 194:22 196:8 206:22 221:1 228:20 consumes 63:23,24 consuming 112:23 146:5	contained 171:4 containing 67:7 contains 69:3 209:25 contemplating 34:12 contemporary 90:12 189:14 contend 70:14 contended 132:1 contending 19:17 content 9:1 10:25 11:21 17:20 49:2,3,19 50:12,21 51:9,11 53:10 56:9 57:23 73:2 74:7,8 76:21 77:10 78:3 81:24 82:16,18,23,25 83:10,17 84:15 85:20 86:6,19 87:5,14 89:8,10 91:11,21,25 92:12,16 93:6,13,19 94:4,15 95:16 107:3 113:3,21 117:16,20 118:10,25 119:6,12,24 121:9,11 122:1,9,15,18,23 123:20,24,25 124:4 127:8 147:4 148:23 149:16,17,19 150:9,19,22 152:6,9 158:5 179:15 202:22 207:15,18 214:3 216:3,6,10,17,20 217:6,12 218:7 219:21 225:22 226:11 227:8,9,16 269:9,10 272:22	298:2,3,7,8,14 302:23 319:8 320:21 321:3 contention 5:16 59:22 101:1 162:16 content-maker 238:8 contested 185:9 context 23:16 32:6 34:4,25 35:4,6 62:8 107:20 144:7 147:16 234:11 241:23 248:7 261:8 contexts 146:12 continue 47:20 67:18 83:5 115:2 131:6 135:25 162:14 172:7 174:24 193:8,18,23 194:8 200:4 206:4 225:8 235:3 236:6 239:10 287:7,18 310:15 321:16 continued 3:1 196:22 236:2 238:6 continues 82:18 100:7 continuing 82:17 212:15 231:21 242:13 279:1 continuum 216:22 217:7 contours 45:5,14 220:4 contract 51:1 contracts 51:4 contrast 61:13 contribute 6:19 control 8:13 12:22	80:23 81:11 100:1 113:17 118:22,25 119:6,11 120:18 121:5 127:2 137:14 138:11,16,18 142:3 151:18 154:15 193:25 237:1,19 307:10 308:17,18 controlled 171:22 179:23 controlling 138:19 186:15 273:4 controls 120:11 154:15 159:23 164:24 165:1 171:16 205:15 207:16 213:20 214:2,12 215:1,19 217:1,21,24 225:13 237:11,18 302:22,25 303:18 320:15 controversy 219:24 convene 269:25 convenience 304:4 convenient 66:21 233:3 conventions 253:6 conversation 6:18 64:16 102:21 155:10 271:18 296:11 322:21 323:2 324:23 conversations 152:10 323:24 324:6 conversion 14:25 17:2 100:12 convert 14:17
---	---	--	--

73:20,22 84:3 converted 73:8,11 converting 98:5 converts 15:5 cool 296:4 cooperate 235:13 cooperated 235:2 cooperation 168:17,21,25 186:4,8 co-panelists 189:17 191:3 199:21 201:10 copied 293:4 308:13 copies 6:1,6 72:22 74:20 80:21 83:12,14 84:5 87:13 197:11 210:21,24 225:24 232:15 237:16 244:8 246:19 250:14 256:7 268:8 co-proponent 163:19 copy 22:8 72:19,21 73:9,25 74:2,3 81:15,21 83:21 107:12 110:24,25 111:1 114:9 125:20 149:8 179:20 182:10 189:22,23 193:17,18 194:8 200:18 201:6,8 228:15,16 229:4,7,8 230:23 237:14,15,20 243:5,15 244:7,11 246:21 250:13 266:1 268:22,23 289:23 292:11 293:14	308:6,10,14,16,1 9 copying 159:18 209:22 228:24 269:17 copyright 2:6,8,10,12 4:7 21:6 29:17 53:16 59:9 60:1 74:19 76:10 101:5 104:24 117:24 120:1 126:5 137:1,3 141:3,9 144:24 145:1,15,18 151:22 153:18,19,21 175:11 197:13 207:11 216:24 226:9 237:5 238:5,16 243:12 245:1,4 260:8 263:4,13 264:6,13 266:14,22 267:2 291:1,2,19 292:4 302:11,21 303:15,22 copyrightable 269:17 296:18 copyrighted 53:18 103:25 119:24 141:7,11 147:9 179:13,14 207:6,9 212:24 237:3 239:11 272:20,22,24 copyrights 148:11 260:7 core 141:3 198:19 231:9 240:6,7 308:5 corner 11:11 corporation 116:12 297:4 correct 17:20 36:7 37:21 67:3 71:4	125:3,7 180:14 190:15 208:24 223:18 261:5 277:16,17,19 284:1 285:25 293:3 297:17 303:18 306:21 312:19 313:2 320:11 correctly 119:8 219:15 corresponding 305:24 Cory 235:23 cost 101:19 221:13 259:20 284:5 costs 283:15,17 327:19 couch 174:7 counsel 2:6,8,10,12 4:7,16,18,20,21 9:1,4 77:4 88:15 counterfeit 268:7 countries 113:8 185:3 313:19 316:6,11 country 185:7,10 couple 5:21 10:8 31:7 51:20 85:4 101:13 106:13 146:14 152:12 161:22,24 170:25 201:14 214:23,25 249:17 263:9 264:17 276:15 303:4 310:25 317:14 course 12:13 31:25 32:22 39:7 66:14 122:14 148:6,20 162:2 241:1 245:1 259:3 268:23	289:10 317:9 court 6:15 102:13,18 103:17 148:8 297:9 courts 43:16 47:3 103:17 Court's 102:16 cover 11:21 43:10 45:8 60:21 61:1 63:17 72:4 74:21 154:23 191:5 212:2 213:4,10 214:15 255:1 275:9 covered 59:8 74:25 75:2 83:18 145:7 216:12 228:13 256:20 266:5 311:1 covers 6:25 42:12 53:17 63:11,15 75:24 cowbell 292:18,21 CPU 321:19 crack 123:12 cracked 276:6 craft 155:4 183:21 188:3 crafted 244:17 crafting 244:16 crazy 277:2 create 47:1 84:8 113:23 142:24 145:8 153:7 177:1,20 210:24 211:16 225:24 227:25 232:24 237:10 239:11 247:21 302:23 created 10:2 16:16 127:25 156:7 165:24 238:21 325:7,8,19
--	---	--	---

creates 128:7 262:21 303:14 creating 23:11 47:8 69:5 78:6 105:23 160:3 174:21 237:15 244:7,11,13 263:20 269:12 291:24 creation 269:4 290:20 creations 182:18 creative 77:16 119:12 206:11 255:24 313:6 creators 70:14 92:6 182:9 207:17 credibly 292:3 credit 248:22 cries 303:25 criminals 320:21 critic 23:9 25:5 critical 9:21 61:8 81:15 166:17 207:16 219:17 280:14 criticism 20:14,16 29:15 30:21 43:4,10,14,25 45:6,7,12,18,21 47:14,17 59:20 60:24 61:6 62:1 107:22 criticize 102:24 criticizing 23:16 46:11 critics 166:1 191:8 critique 110:5 critiquing 23:15 cross-compilation 159:18 Crossing 181:19	cross- manufactured 157:7 crowd 281:17 CRR 1:23 crucial 61:7 110:22 crushed 274:22 cryptographic 320:3 cryptographically 320:4,16 crystal 263:7 CSR 1:23 329:20 CSS 21:1 75:15 81:25 cultural 49:5 168:11 190:1 191:10 culturally 165:25 183:25 culture 23:15 25:6 26:3 30:15 104:13 108:18,19 181:18 curated 166:6 curation 181:14 curator 169:7 curious 141:18 176:16 241:15 243:17 current 12:15 74:10,14 76:25 93:21 148:2 166:22 178:19 204:21 205:1 217:18,20 265:9 currently 94:25 126:17 149:3,5 317:7 327:9 cursory 188:9	curve 318:15,17 customers 96:1 310:9 cut 16:25 261:13,14 cutting 59:20,21 cycle 131:3 144:6 302:12 cycles 290:3 291:18 cynic 182:21 <hr/> <p style="text-align: center;">D</p> <hr/> dad's 324:24 damage 111:21 303:22 damages 111:18 damaging 148:6 Damle 2:7 4:17 18:11 19:7,11 36:8 74:6 89:18 99:15 124:18,24 125:4 128:10 129:1 133:9 135:8 138:6 149:22 154:12,22 156:14 158:20 173:16,20,25 176:9 177:3 185:24 186:15,19 198:10 201:3 202:8,17 203:11 204:24 205:20,25 208:12 209:6,21 211:3 221:11 223:15 235:25 237:24 245:20 267:9 282:3 283:12,17 286:12 307:22 dance 247:9 dances 33:4	dancing 25:20 239:21 danger 141:14 149:10 dark 175:4 Daryl 1:23 329:2,20 data 11:7 100:15,20,21 101:4,9 198:3,4 219:17 317:24,25 324:22 325:22 database 281:17 date 189:2 329:13 Dated 329:16 daunting 56:3 171:10 David 3:22 5:3 9:3 15:12 197:22 241:24 day 41:17 57:15 110:25 153:6 240:10 247:17 274:2 296:10,16 308:7 days 80:16 104:12 113:5 137:18 276:15 DC 255:8 DCP 15:5 de 263:4 293:15 deactivate 202:5 deactivated 171:5,8,12 174:9 deactivation 202:10 dead 278:17,18 deal 51:25 53:3 54:23 57:1 93:8 136:15 160:11 284:20 313:24 dealing 51:14 52:1
---	---	---	---

<p>69:12 137:22 317:3 dealt 315:21 death 274:15,24 275:3 277:13 304:22 310:11 315:18,19 debatable 46:24 debut 189:16 decade 218:7 decades 167:2,16 decaying 190:3 DECE 83:8 decide 47:3 101:5 165:6 181:10,11 236:7 decided 154:25 155:1 decision 41:23 208:23 decisions 138:17 168:2,3 declined 235:13 322:12 decomposed 325:20 deconstruct 108:1 decrypt 95:19 96:6 123:16 268:20 decrypted 71:6 decrypting 95:16 125:2 decryption 96:3,5,6 124:3,4 dedicated 207:1 dedication 185:20 deductible 41:18,19 deeper 94:2 deeply 167:17</p>	<p>def 12:13 26:8,10 73:6 98:6 99:6,18,22 100:11 114:13 default 122:15 defeating 129:14,22 defeats 181:3 defects 274:11 Defense 116:17 163:16 271:23 defer 80:9 199:20 201:9 212:2 define 27:8 37:25 38:5 45:14 64:9 228:23 241:4 242:14 243:1,4 245:5 defined 43:15 63:17 168:5 216:10 243:19 247:25 253:4 298:9 defining 183:15 definitely 115:1 157:9 178:19 179:1 199:5 203:8 262:5 293:18 296:15 definition 9:20,21 10:7,12 11:14,17,19 12:3 13:16 16:5 17:22,23 19:22 25:23 28:1,2 38:1 55:19 63:10 65:1 72:17 74:2 83:25 84:4,10 89:3,8 91:7,8,18 92:12 94:5 100:7 101:1 228:18 definitions 27:10,13 64:3,13 degrade 117:18 degraded 25:12</p>	<p>130:19 degree 323:11 324:17 degrees 30:3 deleted 227:5 delineate 220:3,4 deliver 206:21 delivered 36:24 119:12 delivers 69:14 delivery 122:22 demand 51:8 85:13 86:12,16 113:21 156:12 220:21 demanding 24:16 207:8 demarcation 241:16,20 democracy 23:13 26:1 demonstrate 15:19 16:3 27:2 demonstrated 31:4 91:24 256:2 demonstrates 265:22 demonstrating 19:21 demonstration 161:25 denied 235:19 255:14 denies 182:13 deny 153:22 denying 194:23 department 2:15 4:22 82:7 depend 189:12 245:25 dependent 188:16</p>	<p>depends 24:23 101:5 176:20 203:5 240:23 319:11 depiction 109:7 deployed 89:9,11 97:13 Deploying 139:20 deposition 309:10 Deputy 2:8 4:17 derivative 9:9 77:10 79:4 82:9 211:16,23 225:25 229:2 267:20,21 269:3,4 290:20 291:8 292:12 describe 67:21 109:14 151:13 208:22 228:20 296:17 described 82:10 145:4 148:1 158:13 189:17 191:3 193:1 306:20 311:11 describing 73:20 149:23 209:15 212:8 223:4 description 147:18 150:3 154:23 244:25 descriptions 155:5 desert 32:20 165:11 design 159:12,16 164:13,18 166:8 183:13,18 designation 267:19 designed 124:7 129:9 145:1 146:4 207:19 212:9 303:18</p>
---	--	--	---

<p>309:5 316:16</p> <p>designers 148:14 165:15,16</p> <p>desire 68:23</p> <p>desires 164:22</p> <p>desist 104:16</p> <p>desktop 266:3</p> <p>desperately 181:21</p> <p>despite 166:23</p> <p>destination 138:14</p> <p>destroy 81:13</p> <p>destroyed 181:3</p> <p>detail 25:23 137:5 171:1</p> <p>details 18:14 25:15 54:24 120:5 306:8</p> <p>deter 176:8</p> <p>deteriorate 208:5</p> <p>determined 197:10</p> <p>determines 219:10</p> <p>deterred 197:11</p> <p>develop 5:9 133:17 134:1 142:19 145:9 242:7 315:12</p> <p>developed 26:21 113:8 159:14 169:24 172:6 239:8 292:2 322:9</p> <p>developer 133:17,25 142:25 161:10,12 163:7,21 164:9 165:22,24 168:17,21 169:3,10,20,22 176:3 178:4 180:20 184:21</p>	<p>187:7 205:22 218:12 230:5 247:12,13,14,17 249:13 259:13 272:2 290:13,20 299:17</p> <p>developer/ publishers 230:1</p> <p>developers 116:13 119:2 125:19 128:3,19 130:1 134:7 148:13 153:2 156:7 169:10 172:3 173:2 183:4,6,9,24 231:11 312:8,11,20</p> <p>developer's 217:7</p> <p>developing 33:12 34:5 109:15 146:7 168:16</p> <p>development 45:23 116:14 133:16,25 144:2 145:15 219:1 221:24 222:2</p> <p>device 95:9,15,18,21 96:4,13,14 97:8 117:18 119:21 120:23 121:3,7,16 122:5 123:14,15,19,21 124:14 130:18,19 137:14 139:12 146:6 179:25 215:24 216:4,21 266:2,3,4 272:25 273:1,4,6 289:15 299:12 308:19 309:9 310:3,5 318:16 319:23 324:19 325:10,11</p>	<p>326:7,9,10 327:7</p> <p>devices 83:1 117:17 118:15,22 120:9,19 121:10 122:14 127:18,23 128:1 129:25 138:12 143:5 154:19 179:21,22 214:17 216:5 254:14 279:5 283:1,9 302:17 303:13 311:14 318:21,25 321:17 327:8</p> <p>devise 77:25</p> <p>devised 127:4 129:19</p> <p>Dewey 23:2</p> <p>Diamante 162:25 163:4 164:3,6 168:24 169:13,22 170:9 242:20 246:23 247:1 249:5,21 250:2 251:3 266:18</p> <p>Diamante's 235:9</p> <p>Dick 46:5 91:16</p> <p>dictated 248:25</p> <p>dictates 248:2</p> <p>dictionary 64:18 294:5,8,10</p> <p>die 325:18</p> <p>Diego 180:19,22</p> <p>dies 181:11 278:1,5</p> <p>difference 38:17 63:4,6 64:10 93:17 191:12,15 229:11 285:7 326:4</p> <p>differences 214:11</p>	<p>217:16</p> <p>different 16:10 17:18 39:4 44:8 46:20 61:24 89:13 107:20 119:21 120:1 139:7 156:14 167:3 171:3 173:11 174:5,8 175:6 185:1,3,25 191:22 192:8 199:13,23 201:14 203:3,4,17 205:18 212:17 217:24 222:16 224:4 233:4 236:16 239:22 244:14 246:8 247:11,19,21 267:17 268:20 269:15 276:8 279:14 281:9 283:21 286:19 287:23 288:12,23 289:4,7 294:9 296:17,18 298:13 301:16 302:13 303:13 306:9 316:5,19 318:7</p> <p>differently 252:9 284:23</p> <p>difficult 32:4 33:8 38:5 44:17 53:22 54:1,3 55:18 147:10 155:20 159:6 167:1 173:14 177:17 196:6 217:8 220:3 225:17 252:3 325:3</p> <p>difficulty 252:2,18 266:18,20</p> <p>digesting 302:7</p> <p>digital 8:24 10:1 14:18 72:18,20</p>
--	--	--	--

<p>73:9 74:2,3,24 77:18 81:2,16 82:18,21 83:12,14,21,24 84:9,18 86:1 87:16 88:1 102:3,5 112:15 114:10 116:16 163:6,15 197:20 271:22,25</p> <p>diligently 87:10</p> <p>diminished 256:24</p> <p>diminishing 303:1</p> <p>direct 33:22 82:12 197:24 199:6</p> <p>directed 33:19</p> <p>direction 246:6 329:9</p> <p>directly 46:10 53:12 135:9 169:15 206:9 273:16 283:4 307:14</p> <p>director 8:11,16 180:18</p> <p>directorial 261:17</p> <p>directors 261:16</p> <p>disabilities 132:7</p> <p>disabled 133:3 193:4,13</p> <p>disagree 106:19</p> <p>disagreement 5:19 305:8,9</p> <p>disappear 183:6</p> <p>disappeared 264:7</p> <p>disappointed 274:22</p> <p>disc 72:13 73:24 83:22 84:13 96:19 101:10</p> <p>discard 165:10</p> <p>disclaimer 195:7</p>	<p>disclaimers 195:22 221:17,21</p> <p>disclosed 233:23</p> <p>disclosure 195:5 196:15 233:21</p> <p>disclosures 222:8 233:15</p> <p>discontinued 233:22</p> <p>discouraged 33:12 34:4,5</p> <p>discourse 49:5 60:4</p> <p>discover 183:21</p> <p>discovered 143:10</p> <p>discs 61:1 72:25 77:17 83:11 84:8</p> <p>disc-to-digital 72:19</p> <p>discuss 98:2 211:10 213:23 328:10</p> <p>discussed 50:13 197:23 210:7 214:18 215:22 225:7 237:2 242:24 245:10 254:4 261:8 314:10</p> <p>discussing 196:1 212:21,22 213:19 215:3 232:10 255:7 256:10 262:23 304:7 306:7</p> <p>discussion 6:19 9:7 29:9 49:18 53:23 71:21 79:1 89:3 90:23,24 162:7 201:13 206:14 252:17 259:3 291:13</p> <p>discussions 92:11</p>	<p>185:14,19</p> <p>disingenuous 131:2</p> <p>disk 12:3 158:6</p> <p>disparage 143:14</p> <p>dispel 27:4</p> <p>disperse 177:6 188:18</p> <p>display 127:8 157:16,19</p> <p>disrupt 207:23</p> <p>disrupted 146:8</p> <p>disseminates 96:7</p> <p>disseminating 164:16</p> <p>dissemination 77:18 83:6</p> <p>distinct 147:22 212:14 243:14</p> <p>distinction 28:11 30:8,12,17 33:8 65:2 199:8,18 216:13 228:9 232:16 298:17 324:20</p> <p>distinctions 29:3 146:11</p> <p>distinguish 27:14 63:21 75:8 153:19 231:20 233:3</p> <p>distinguishable 119:17</p> <p>distinguishing 120:20</p> <p>distribute 48:21 54:15 76:20 91:25 96:1 206:20</p> <p>distributed 14:14 74:18,19 75:1,6 81:6 86:24 110:21 312:23</p>	<p>318:3,15</p> <p>distributes 52:2</p> <p>distributing 48:19,24 54:6,12,13,17 55:22 78:6 300:8,9</p> <p>distribution 8:24 9:19 12:23 13:19 50:25 51:3 52:4 54:14 78:2 86:2 93:21 99:9 134:20 252:20 295:11</p> <p>distributor 48:23 51:24 52:2,5 53:7 54:25 55:7,8 81:14</p> <p>distributors 8:14 9:23 14:13 19:19 24:15 26:7 50:16 51:5,7,13,21 76:7 81:19 99:8 207:18</p> <p>distributor's 52:18</p> <p>divided 39:23</p> <p>dividing 216:7</p> <p>division 113:19</p> <p>Divisions 164:11</p> <p>DMCA 33:14 34:6 136:8,10 176:7 182:13 204:2 207:11 266:24</p> <p>dock 298:22,24</p> <p>document 31:13 64:20</p> <p>documentaries 27:20,21,22 29:25 30:3,24 37:9 57:12,17 104:11</p> <p>documentary 7:9,18,23 8:3 20:9 21:3 26:22</p>
---	---	--	--

27:17 28:1,12,13 29:23 30:7 32:12,17 33:1,7 38:18,21 42:13 44:24 45:2 47:8,11,16 49:3,23 50:6 53:14 58:13 60:15 61:6 62:8 63:10,17,24 64:11,19 65:24 79:19 99:3 104:25 105:7 110:8 documented 139:4 Doe 174:20 175:2 200:13 dollar 78:18 dollars 78:12 101:20 260:1,2 275:16 domain 238:17 dominion 273:6 Donaldson 3:8 7:14 26:15 36:18 done 17:16 51:3 52:16 54:24 71:1,2,4 89:22 92:11 95:3 162:15 200:5 211:2 218:20 233:17 242:2 294:11 303:22 305:25 307:20 321:13,22 dongle 193:24 199:15 dongles 193:22 Donkey 239:4 doom 208:8,10 door 182:16 184:4 Dorla 40:8 dot 16:24 double 12:20	13:1,2,6 14:4 15:4 doubt 21:22 181:10 309:11 dovetail 235:9 download 74:11,12 101:1,2 158:10 239:5 downloaded 74:8,21 149:8 158:18 downloads 100:18,19 102:5 110:21 210:11 222:13 downstream 273:1 dozen 86:6 draft 233:16 drafted 233:20 317:7 drafting 43:18 dramatic 10:3 dramatically 77:22 112:5 draw 28:6 30:2 54:2 55:13 59:23 217:8 242:15 252:5 255:4,5 drawing 29:18 30:16 53:21 57:3 232:16 drawn 27:16 Dreamcast 232:19,20,23 Dreams 109:16 Dreamworks 86:10 dried 32:23 drive 73:24 276:11 281:3,5,6,13,20, 22,23,25 282:9,18,22,23	285:8,11 305:20,23 306:10,12,13,16 307:4,9,23 308:3,5,9,11,12, 15,22 309:1,21,23 310:1,2,6 319:22 326:18 drives 135:10 281:10 283:10 285:6,9 307:20 driving 46:25 249:24 DRM 87:7,11 273:2 DRMA 81:25 dropped 14:1 15:8 18:19 drops 112:5,6 DS 174:18 253:15 DU 276:21 dual 81:10 due 76:6 162:2 218:4 295:9,10 Dune 253:2 duplicate 18:19 duplicates 15:7 duration 252:3 during 82:19 111:22 150:13 288:22 310:23 315:6,12 DVD 9:21 11:18 12:13 17:21 18:18 21:2 22:2,7 37:18 39:13 66:21 67:2,4 72:9,17 73:2,3,7,21,24,2 5 77:17 81:1 84:18 85:11 87:7 98:5,6 100:25 107:11 111:12	112:24 113:1 114:7 281:6 321:6 DVDCAA 71:2 DVDCCA 3:23 9:4 15:13 20:1 29:24 DVD's 11:12,15 36:10,13 84:4 87:22 91:3,14 93:13 100:11 102:7 DVR 266:2 dwindled 220:22 221:3,11 dynamic 185:11 <hr/> E E&O 41:13 50:23 eager 69:8 earlier 14:3 15:13 17:10 48:15 50:24 58:25 61:17 65:18 68:9 83:18 84:11 97:22,25 102:21 110:17 115:19 132:18 162:4 192:21 230:8 231:3 236:1 249:1 254:25 258:1,24 259:20 267:15 269:3 272:17 306:21 314:10 317:3,5 early 35:11 84:3 104:12 167:18 215:7 249:2 324:6 ears 137:20 earth 77:2 280:3,5,6,17 earths 280:9 easier 13:10 66:20 114:20 123:6,19
---	--	---	--

<p>126:22 165:10</p> <p>easiest 201:17,22 255:12</p> <p>easily 19:16 228:10</p> <p>Eastern 185:7</p> <p>easy 64:10 134:11 149:1 299:5</p> <p>eavesdrop 138:23 139:20</p> <p>eavesdropping 138:2,6 139:18</p> <p>eBay 234:22</p> <p>Ebert 10:10 23:10 25:4 99:12</p> <p>eBooks 63:19</p> <p>echoing 135:24</p> <p>economic 236:17 283:13 288:15 316:10</p> <p>economically 282:10 283:3</p> <p>economics 85:10 282:12</p> <p>ecosystem 207:24 294:15 296:16</p> <p>ecosystems 117:20 118:10</p> <p>Ed 31:16</p> <p>edge 32:21</p> <p>edit 99:2</p> <p>editing 18:25</p> <p>editions 315:3</p> <p>educate 245:3</p> <p>educational 3:10 47:12,13 61:18 62:1 63:18,23,24 64:6 69:19 106:24 253:25</p> <p>educator 163:7 164:8</p>	<p>EFF 170:15 216:8,15 218:9 219:23</p> <p>effect 33:10 96:24 109:18 113:14 126:4 193:9 282:8 283:14,16 296:15,20 303:1 305:25 313:13,14 320:25</p> <p>effected 175:7</p> <p>effective 221:13 261:24 277:18,20,24 278:3</p> <p>effectively 302:14 325:17</p> <p>effects 56:23 170:21 176:6 208:3 240:12</p> <p>effectuated 199:14</p> <p>efficient 155:10</p> <p>effort 21:8 156:12 160:2 186:9 304:3</p> <p>efforts 77:19 132:17 133:1 146:9 235:3 238:12 240:20,24 242:19 245:24 254:7 256:6</p> <p>EFF's 214:25</p> <p>either 40:2 55:19 66:19,23 74:1 84:9 101:14 117:17 161:11 306:11</p> <p>electronic 139:12 163:12,18 219:16 283:8 284:9</p> <p>electronics 279:15,17</p>	<p>284:11,21 286:25 319:13,14</p> <p>element 64:24 198:21</p> <p>elements 29:20 33:5 38:15 55:17 261:21 279:10,14,23 280:3,5,6</p> <p>eleven 170:18</p> <p>eliminate 60:23</p> <p>eliminating 60:18 61:11</p> <p>Elm 264:1</p> <p>eloquently 189:17</p> <p>else 7:3 10:18 32:18 47:5 125:12 128:22 145:6 150:23 174:19 179:4 194:19 248:12 250:19 252:15 286:15 299:6</p> <p>elsewhere 231:8</p> <p>E-mails 170:3</p> <p>embed 121:14</p> <p>embedded 126:6</p> <p>embrace 83:5</p> <p>emerge 185:20</p> <p>emotion 23:7</p> <p>empathy 23:11</p> <p>emphasize 21:8 136:3 205:14 206:10 240:19 254:25</p> <p>emphasizing 324:16</p> <p>Empire 77:1</p> <p>Empires 234:5</p> <p>employee 329:12</p> <p>employing 242:5</p>	<p>emulation 242:7</p> <p>enable 84:4 117:15 142:16 161:11 207:19 210:20,25 211:16 212:9 298:10 302:15</p> <p>enabled 83:20 135:19 210:5</p> <p>enables 123:14 146:3,16 209:18</p> <p>enabling 117:15 186:22 298:13</p> <p>enactments 31:19</p> <p>encourage 53:16 73:17 95:5 144:25 312:9</p> <p>encouraged 94:19</p> <p>encouraging 145:14</p> <p>encrypted 65:10,17 66:15 67:6,8 68:6 121:14 122:12 129:19 287:18 308:21</p> <p>encryption 25:1 80:9,11 81:15,21 87:4 114:16 120:8,9 121:18,22 130:2,4 154:14 269:15 309:9 321:9</p> <p>end-of-life 279:19</p> <p>endorses 206:12</p> <p>engage 33:3 94:10 147:5,10,11 187:10 209:2 211:21 225:6</p> <p>engaged 62:13 221:2 322:19</p> <p>engaging 256:19 264:17 297:15</p>
---	---	---	--

engineer 101:16 149:13 152:18 309:8	290:10 294:18 296:16 297:9	especially 9:18 26:23 35:18 113:7 124:3 194:22 244:17 259:12 288:7	316:2
engineering 130:2 173:5 209:3,5,7,11	entirely 41:24 89:11 128:8 150:4 183:15 218:13 230:16 236:16 253:7 289:7 296:18	ESPN 36:20 37:4	everybody 31:17 104:14 147:14
engineers 309:5		essence 191:6	everyone 4:4 6:16,22 11:7 28:20 48:8 115:6 233:8 246:12 264:23 323:3
England 249:9	entity 4:11	essential 199:1 206:23	everything 44:18 49:14 72:8 73:5 77:20 104:21 113:22 181:15 185:25 248:7 257:20
English 64:18	enumerated 29:16	essentially 29:24 40:18 51:12 99:17 120:7 122:11,12 127:1 130:2 145:6 184:25 185:3,12 186:5,6,11 193:12 200:17 205:10 209:22 215:24 227:24 230:11,18 231:6 251:23 252:25 253:18 254:5 269:13 294:3 299:7,13 302:10 311:4 321:18 325:17 327:13,23	everywhere 10:4 164:24
enhance 49:4,5 98:9	environment 78:4 157:10 236:2 319:4	EPA 284:22	evidence 5:20 9:8 49:24 50:6,8 51:8 82:7 90:20 118:1 122:3 124:2 130:24 138:1 151:5 161:6 194:20 207:10 213:22 225:1 240:14 256:16,18 303:19 317:1 323:19
enjoy 30:25 160:18	environmental 278:20 279:9 322:19	EST 86:9	evidentiary 323:21
enjoyed 63:3 184:2 206:25	environments 262:22	established 58:1 230:6 265:2	evolve 82:18 115:3 155:16 176:4
enjoying 254:17	EPA 284:22	estimate 83:2	evolved 115:1 188:2
entail 199:25	episode 68:8	estimates 82:20	evolves 26:4
entailed 199:21	equal 78:19 244:23	et 133:21 134:21 157:12 165:11	EVP 8:21 76:16
entertain 170:3	equipment 98:25 101:17 114:14	evaluation 12:11 28:24	e-waste 284:7,16
entertaining 29:13 30:9,25 31:17 42:15,20	equivalent 148:1 209:15 243:20	evaporates 100:16	Ex 149:4
entertainment 3:17,25 8:21 9:4,5 28:16 30:13,19 31:13 35:8 42:10,12 56:10,16 58:20 76:17 146:4,5 147:2,7 163:6,25 164:2 197:20 272:10,12	era 193:24	event 50:16 71:7 150:25 244:25 310:18 317:9	exact 82:16 229:15
enthusiast 170:17 190:18 239:17	eras 192:21	eventually 80:20 128:7 315:12	exactly 13:4 14:9 34:23,24 37:13 127:12 150:6 186:17 189:8 202:14 238:20 245:17 251:11
enthusiasts 194:7 228:3 259:17	erased 226:10		
entire 87:13 113:18 127:25 128:4 140:23 148:10 158:10 181:1 183:3 192:11 219:13 230:13 245:3 253:5 278:18	Eric 277:8		
	ESA 8:19 60:13 116:19 145:24 163:23 166:2,12 202:19 206:6,9 234:23 235:1,7,18,23 238:4,8 239:13 242:18 254:6 256:8 267:14 272:8 313:8		
	ESA's 206:12 228:12 266:9		
	esoteric 276:22		

<p>259:19</p> <p>example 12:9</p> <p>31:23 32:13</p> <p>33:18 36:17</p> <p>37:13 44:22</p> <p>45:11,15 58:8</p> <p>63:23 67:24</p> <p>69:20 79:1 91:12</p> <p>94:3 103:18</p> <p>107:2 108:5</p> <p>114:15 120:20</p> <p>127:14,25</p> <p>129:17 132:20</p> <p>133:20 135:13</p> <p>143:2,19,24</p> <p>144:8 150:21</p> <p>156:25 175:6</p> <p>198:13 200:12</p> <p>204:16 207:25</p> <p>219:9 238:15</p> <p>239:24 242:10</p> <p>249:19 255:4,14</p> <p>258:10 260:23</p> <p>261:2,12 293:24</p> <p>298:20</p> <p>312:18,21</p> <p>318:20 322:8</p> <p>324:22</p> <p>examples 27:25</p> <p>32:8 40:1 51:20</p> <p>55:16 65:8,13</p> <p>67:10,19 68:20</p> <p>69:4 91:9 110:10</p> <p>132:16 170:25</p> <p>201:12 214:23</p> <p>216:11 235:5,6</p> <p>239:10 256:5</p> <p>260:21 263:10</p> <p>298:1 311:7</p> <p>314:15 318:14</p> <p>except 230:18</p> <p>237:23 304:25</p> <p>excepted 204:1</p> <p>exception 32:13</p> <p>154:23 179:2</p> <p>183:22 200:7</p> <p>excerpts 108:4</p>	<p>110:4</p> <p>excessively 105:16</p> <p>Excitebike 239:5</p> <p>excited 239:17</p> <p>290:15,24</p> <p>exciting 145:12</p> <p>206:22</p> <p>exclude 211:3</p> <p>269:18</p> <p>excluded 74:12</p> <p>227:22</p> <p>excludes 74:13</p> <p>excluding 216:8</p> <p>exclusion 227:14</p> <p>exclusive 86:19,21</p> <p>excuse 56:15</p> <p>executed 299:19</p> <p>execution 299:20</p> <p>executive 8:16</p> <p>exemption 7:9,17</p> <p>8:5 12:15</p> <p>20:4,8,13</p> <p>21:6,7,9 23:22</p> <p>24:3 28:22 29:4</p> <p>39:16 42:11</p> <p>43:5,8,16 44:4</p> <p>47:1 49:8,11,12</p> <p>53:8,12,17</p> <p>55:23,25 56:17</p> <p>58:10 59:6,16</p> <p>60:15,17 61:9,21</p> <p>63:11,14 69:6</p> <p>70:15 71:7</p> <p>72:4,12,21 73:13</p> <p>74:7,10,13 75:23</p> <p>76:8 79:17,18</p> <p>81:8 86:24 88:16</p> <p>89:16 93:9 98:24</p> <p>103:13 105:13</p> <p>106:8 108:14</p> <p>113:10 116:24</p> <p>117:1,7,15</p> <p>118:2,4,6 120:3</p> <p>125:9 126:4</p> <p>130:18 132:12</p>	<p>136:18,24</p> <p>137:2,9 139:22</p> <p>146:2,15 154:3</p> <p>161:7 167:10</p> <p>171:3</p> <p>179:12,15,17</p> <p>198:11 199:13</p> <p>207:5,22 212:18</p> <p>216:25 217:5</p> <p>218:23</p> <p>228:11,14</p> <p>231:23 232:8</p> <p>236:24 237:7</p> <p>239:8 242:11</p> <p>243:1,3 244:8</p> <p>255:1,14,19</p> <p>256:14,21 257:9</p> <p>258:3,8 263:6</p> <p>266:5 272:20</p> <p>273:3,15 285:2,4</p> <p>290:3,5 298:6</p> <p>301:3 302:14</p> <p>303:14 304:1</p> <p>311:16 313:25</p> <p>317:10</p> <p>322:15,17</p> <p>323:17,22</p> <p>327:23</p> <p>exemptions 4:10</p> <p>5:1 43:19 63:16</p> <p>70:11,13,17,18</p> <p>94:17,20,22</p> <p>103:2 110:20</p> <p>117:9 118:7</p> <p>140:16 146:13</p> <p>193:21 212:5</p> <p>238:13 255:5</p> <p>273:15 324:18</p> <p>327:14,17,18,24</p> <p>exercise 125:20</p> <p>exhibit 9:14</p> <p>15:11,22 17:24</p> <p>20:23 24:19,21</p> <p>151:11 198:5</p> <p>213:7 250:13</p> <p>275:22 276:1</p> <p>315:25</p> <p>exhibition 199:2</p>	<p>265:7</p> <p>exhibits 6:1,3,4,6</p> <p>12:17 15:25</p> <p>151:11 223:9</p> <p>252:14</p> <p>exist 37:14 56:18</p> <p>120:12 185:22</p> <p>248:8</p> <p>existed 40:15</p> <p>46:15,16 157:11</p> <p>228:25</p> <p>existence 327:11</p> <p>existential 63:8</p> <p>existing 37:15</p> <p>58:13 60:14</p> <p>63:11,14 75:23</p> <p>103:12,21</p> <p>105:13 143:24</p> <p>144:1 209:5</p> <p>291:6,23 307:4</p> <p>311:6 321:17</p> <p>exists 122:16</p> <p>129:15 134:6</p> <p>230:22</p> <p>expand 72:4</p> <p>108:11 110:19</p> <p>expanded 60:25</p> <p>61:3</p> <p>expanding</p> <p>60:17,21 71:24</p> <p>expansion 71:15</p> <p>expect 111:14</p> <p>194:7 196:10</p> <p>expectation</p> <p>194:18 220:15</p> <p>233:23</p> <p>expected 201:24</p> <p>expecting 202:1</p> <p>expense 111:16</p> <p>expensive 98:25</p> <p>157:16 327:7</p> <p>experience 21:19</p> <p>109:22 148:15</p>
--	---	--	--

167:25 189:5,6 191:14,18,22 192:9 198:2 200:4 245:23 250:16 290:11 experienced 166:16 178:6 218:8 experiences 181:4 187:19 278:9 experiential 198:3 expert 18:23 100:1 expertise 99:1 102:2 160:10 expires 305:4 explain 53:20 73:11 116:1 163:2 184:22 199:12 214:20 228:6 229:11 explained 120:4 explaining 289:2 explains 32:6 explanation 72:7 168:11 313:18 explicit 40:16 explicitly 125:19,24 170:10 exploit 82:4 124:14 144:9 exploited 143:10 Exploiters 152:13 157:15 exploits 289:2 explore 176:2 182:17 187:25 188:7 257:15 298:16 310:14 explored 32:24 exploring 167:12 238:17	exports 280:8 expose 117:19 122:15 express 210:4 244:24 expression 25:16 expressive 254:21 extend 89:8 125:24 275:8 316:17 extended 304:10 305:1,2 extending 252:18 273:17 275:12 287:12 318:23 extends 234:12 extension 16:24 189:20 298:23 304:13,17 extensive 265:5 extent 28:19,20 77:6,8 93:20 94:16 96:12 113:2 123:13 129:9 145:18 158:4 176:10 204:12 205:21 234:15 267:16 269:8 316:25 324:3 external 127:17 154:19 158:17 extra 51:16 222:4,21 extras 222:17 extreme 196:12 extremely 5:5 53:22 55:18 109:17 117:23 120:6 223:25 246:23 eyes 32:25	<hr/> F <hr/> Facebook 300:4,5,7,10 faced 240:11 323:17 faces 4:12 13:1 25:15 270:1 facility 279:18 facing 76:6 fact 20:1,7,10 29:23 40:16 50:15 69:8 72:8 89:7 90:11 92:8,14 93:12 99:24 113:13 121:15 125:25 128:14,18 138:7 151:3 160:4 168:2 184:25 194:23 207:8 234:22 237:23 238:23 240:7 244:10 248:17 253:10,12 254:18 261:18 265:10 272:23 290:24 294:3 295:8 299:16 304:8 324:18 325:23 327:20,21 factions 185:4 factor 125:16 factors 43:1 58:9 facts 47:4 77:5 factual 220:5 fade 176:15 faded 181:23 fail 315:15 318:16 failed 276:7 310:1 311:20 fails 275:3 306:23 failures 318:21	323:10 fair 13:17 24:24,25 25:1 26:23 27:3,4 28:5,11,14,25 29:19 30:17 31:5,8 34:12,21 35:9,16,25 36:5,22 37:5,10 38:11 39:6 40:4 41:5,10,23 42:18,23,25 43:15,21,23 44:1,16,25 45:1,13 46:18,23 50:22 56:4 57:5,8,9 58:7,9,11,22 59:2,8,12 61:10 62:3,6 67:16 68:2,4,15 69:2 79:17 101:22 102:19,25 103:8 104:12,25 105:20 106:7 107:4 190:25 211:22,24,25 268:3 282:13 291:9,17,25 322:18 fairly 19:16 79:25 143:13,14 155:6 193:2 faithful 190:19 fake 99:20 Falkner 31:10 Falkner's 31:11 fall 10:7 29:19 65:23 66:1 89:12 178:8,9,24 216:16 219:23 falls 36:2 208:10 216:19 false 30:12 245:1 familiar 5:15 172:18
---	---	--	--

family 31:22 46:15 68:8,9 77:1 137:21 fan 229:25 fans 85:1 228:19 240:20 fantastic 239:19 farm 32:1,2,4 fashion 320:24 fast 86:3 87:24 fault 268:10 favor 80:14 134:3 favorable 46:3 fear 165:1 167:11 207:22 307:20 feature 142:3,5,17 300:13 featured 168:22 239:25 feature-length 99:3 features 132:2,5,15 144:11 205:11 217:17,25 222:13 300:12,15 federal 139:19 208:23 fee 52:25 178:23 304:12 305:6 310:24 feed 300:3 feel 40:25 115:6 194:5 232:1 246:25 258:24 259:17 261:17 feeling 155:15 187:13 feelings 188:1 fees 208:4 222:14 festival 14:19	33:21 48:22 54:14 festivals 14:21,23 54:18 110:4 fiction 27:5 63:6 fictional 27:23 28:17 31:19,22 33:25 39:2,3 40:9 42:22 45:1,16,23 46:14 50:2 53:25 54:7 55:17 56:1,9 60:22 61:5 62:5,12,21 63:2 65:3 66:3 67:13 68:2,4,14 69:5,13 fictionalization 38:24 fictionalized 38:15 fifteen 232:21 fifth 299:2 fight 60:16 80:22 185:9 fighting 155:2 185:16 186:7 figure 39:18 98:16 224:17 257:7 figures 205:18 file 13:24 15:6 16:20,21 17:3 18:1,2,4,8,10,12 19:8,15 20:22 99:21 100:15 107:12 158:24 173:24 filed 207:5 286:14,15 313:8 files 15:7,8 140:12 filing 309:7 fill 46:20,21 139:17 filled 33:11	film 7:16 9:25 10:10,15 14:18,21,23 20:9 23:9 25:4,5,8,9,13,18 26:18 27:8,14 28:15,17 29:7 30:13 31:13,19,20 32:3,15,24 33:7,20 35:6 36:3,21 38:9 40:7,9 42:8,21 44:6 46:21 47:11 48:22 49:2 50:15 54:7,14,18 57:18 62:5,14 63:24 64:11,19 65:14,19,21 66:8 67:13 77:11 85:1 91:25 99:9,13 102:23 103:3,7,25 107:25 108:2,23,25 109:5,7,12,20,22 ,24 110:4 111:5 114:20 180:21 190:1,3,17,18 263:23 filmed 50:18 filmmaker 7:24 30:7 33:3 41:19 44:24 45:16 50:14 52:6 53:17 56:1,2,17 filmmakers 7:8,9,18 26:19 27:3 33:10,12 35:11,17 42:14 43:11 45:2 48:18 50:6,25 51:12,15 52:23 78:20 107:4 110:9 filmmaking 9:10 15:23 53:13,14,22 59:21 60:15,22	61:6 62:12 63:18 65:3,4 98:1 films 3:10 7:8,23 8:4,12 9:19,23,25 14:14 26:22 27:1,5,9,17,18 28:6 29:4,13,14 30:4,9 31:5,23 32:12 33:16,19 34:2,3 35:15 37:18 38:7 39:13,24 40:14,17,21,23 42:22 50:17 51:21,23 54:10,11 56:9,11,14,15 57:25 63:2 67:10 68:3,4 69:9 78:6 79:2,7,18,19 82:9 86:14 103:25 107:22 108:18 110:3 113:12 148:2 149:4 165:19 207:2 final 16:25 117:24 154:7,21 170:1 181:22 208:25 209:25 212:4 finally 94:13 238:2 312:21 financial 172:17 financially 329:11 finding 51:13 85:7 298:7 findings 302:19 finds 133:4 fine 155:12 195:14 291:16 302:3 finely 156:18,20 finer 245:4 finger 65:9 finish 31:2
---	--	--	---

finished 23:9 51:25 Finite 33:16 40:21,23 finite-state 248:8 fire 276:11 firm 7:15 firmware 120:8 129:15,18 130:3 154:14 306:13,15 307:8 308:21 309:1 326:18 first 5:23 7:6 12:12 27:2 36:9 49:13 61:4 66:25 68:18 88:23 112:3,20 113:5,6 131:8 133:11 134:4 146:16 156:5 173:9 188:9 193:15 213:15,18 215:12 229:14 240:18 246:4 261:9,15 272:18 296:1 297:1 302:1 303:7 314:24 fishing 127:16 fit 46:2 53:6 180:1 304:5 fits 231:23 five 60:18 171:19,22 285:19 287:10 298:24 300:15 five-icon 298:23 five-person 180:19 fix 12:15 13:21,22 52:18 274:5 275:22 276:13,17,18 277:9,12,19	278:3,12 280:24,25 304:7 305:5 315:24,25 316:1 322:6 325:4 fixed 275:18 278:15 321:3 325:18 fixes 55:4 92:11,15 93:12 94:11 145:10 276:9,15 fixing 275:16 fixture 166:8 169:16 flag 100:8 flagged 12:21 100:9 flashing 307:19 flaw 274:14 275:10 315:7,9,13,14 fleshing 5:18 flip 151:11 303:24 Flixster 84:3 floating 181:5 flow 166:4,8 208:14 Flower 166:4,10 169:3 focus 5:16 15:15 143:6 153:16 155:3 167:12 192:23 234:9 259:6 265:3 288:3,12 305:15 focused 77:10 162:22 208:16 242:12 253:6 286:21 287:25 314:16 317:14 focuses 38:18 118:20 286:17 folks 48:15 49:4	51:3,4 52:10 54:5 55:21,24 56:5 58:25 59:1 175:14,17,21,22 177:1 231:24 232:18 259:5,8 260:17 262:11 267:1 follow-up 310:14 326:21 Food 233:12 footage 32:3 34:1,7,9,25 36:8,21 37:6,9,10,14 39:19 51:17 52:10,12 53:4,6 60:2 66:14,15,17,20,2 1 67:5,7,17 71:23 90:24 91:14 99:2 100:7 108:21 109:3 force 276:20 foregoing 329:5 foreign 167:18 forever 223:2 279:24 Forgive 123:1 form 25:7 45:18 81:5 82:16 189:14 233:10 280:10 293:5 303:15 308:19 format 14:22 16:23 17:6,7 87:23 89:13 99:19 162:9 271:11 formats 36:12 former 189:18 forming 164:21 forms 94:20 147:12 210:5 230:1 255:11	forth 20:7 79:6 118:3,5 125:16 329:6 forums 177:9,15 226:4 229:24,25 230:5 forward 65:8 107:25 110:12 170:4 249:14 300:14 323:13,22 328:12 forwarded 170:11 fostering 164:19 Foundation 163:12,18 four-icon 298:22 Fox 3:25 8:21 31:20 68:7,17 69:7 76:17,19 77:16 81:8 86:10 113:17 235:23 Fox.com 85:22 fragments 181:5 frame 12:19,20,21 13:1,2,25 14:3 15:5 16:6 19:1,23 194:23 frame-by-frame 19:1 framed 214:13,15 frames 14:1 15:4 18:15,17,19 19:3,24 framework 141:5 304:5 franchises 171:23 Francisco 252:13 Frankel 161:20,22 163:24 206:1 211:14 213:2,3,8 220:17 221:6,14,19 223:3,24 224:14
---	--	---	--

225:2 226:13 234:2,3 235:22 236:20 243:18 252:12 254:25 264:18,21 265:17 268:6,12 269:6 272:9 302:4,5 304:18,20,25 305:6,11,15 307:5 309:10 310:16 322:23 326:14 frankly 113:17 226:2 266:11 free 17:4,5 52:24 107:12 175:13 208:3 246:25 304:11 freedom 116:10,11 119:3 125:17 143:23 Freeman 3:13 120:4 121:1 271:9,21 272:1 288:11,18,19 290:22 291:10,15,18 292:6 293:3,20 296:22,25 297:17 298:18 302:17 308:1 311:4 312:4,6,18 313:2 320:2 321:2,12 322:1 326:25 327:3 Freeman's 127:11 frequent 315:23 frequently 131:22 277:9 319:16 Fresno 279:18 friend 144:20 friends 61:13 88:8 185:1 273:21 284:12 294:1,13 315:22	friendships 181:3 front 9:17 80:15 155:18 232:14 274:18 Frontier 163:12,18 frustration 220:15 fulfill 93:21 fulfills 52:18 full 15:2 49:8,10,12 50:7 103:18 110:24,25 111:1 164:23 188:12 189:24 191:18 210:13 233:20 279:25 fully 118:15 207:4 230:23 239:11 243:6 247:13 299:16 fun 289:25 293:23 function 26:2 142:9 179:11 186:23 194:2 219:14 222:6 287:8,19 functional 155:2 193:19 243:6 284:22 316:11 319:1 325:1 functionalities 187:3 216:6 functionality 117:13 120:16 128:6 131:16 134:25 135:2,6,19 151:19 178:1,2 188:25 190:9,12,22 204:22 216:4 217:17 218:2,4 219:20 221:24 239:9 240:6,8 250:5,6	253:14,19 256:6 262:18 266:1 273:4 292:17 294:23 299:19,22,24,25 301:13 functioning 153:14 functions 254:21 fundamentally 174:14 Furthermore 102:17 136:22 179:19 fuses 321:14 future 11:20 80:16 142:2 156:1 167:2 181:13 184:1 197:1 198:4 199:1,2 326:2 fuzzy 100:5 <hr/> G <hr/> gain 62:13 134:24 gained 181:4 gaining 147:24,25 149:11 game 71:23 85:23 96:20 108:12,21,23,25 109:6,7,8,13 114:6,10 163:7,21 164:12,17,20 165:15,16,23 166:16,19 167:5,23 168:1,18,20 169:4,6,10 170:2,7 171:21 173:3,15,16,17 174:4 175:24 176:1,12,17 177:11,14,16,25 180:20 181:17	182:3,4,6,8,11 183:13,15,17,18 184:4,7,10,13,19 21 185:17,21,25 186:1,5,14,25 187:1,3,7,13 189:18 190:8,10,11,13,1 4,22,25 191:7,9,10,21,24 192:5,11,13,22 193:6,10,12 194:7,8,13 195:6,8,9,10,22, 23 196:11,15,23 198:2,7,8 199:16 200:3,14,19 201:5,6,8,20 202:1,9 203:6,12 204:15,22 205:16 206:18 207:25 208:1 209:17 212:15 214:2 215:3 216:11,17,20 219:14,15,18,23 220:10,15,24 221:2,17 222:21 223:1,13 224:8,11 225:8,25 226:25 228:5,13,14 229:16,17,18,19, 20 230:13,17 231:2,5,7,9,10 232:5 233:10,22 234:6 236:2,10 237:14,16,20 238:7,24,25 239:3,10,17,20,2 5 240:7,24 241:18 243:5 246:21 247:4,5,18,24 248:1,6,9,11,13, 16,17,23,25 249:14 250:14,24 251:4,8,9,20 252:7 253:14,20
--	--	--	---

255:21 256:23 257:14 258:11 259:9,12,21 260:18 261:3,11,19 262:15,22 265:25 266:2 267:17 268:19 269:10,14 273:19,24 274:10 276:15 287:4 289:5,8,19,24 290:9,11,12 291:6,7,8 292:2,9,10,11,16 293:2,4,25 294:7,8,16,19,20 22,24 295:6 297:22 299:8,24 300:19,20,23 301:4,7,8,11,19 302:15,22,25 305:5 308:8 310:10 316:8,19,21 317:20,22 318:4,6,8 321:25 322:2 325:23,25 327:14,16 gamers 177:5 194:7 219:11 225:21 games 71:20 108:11,14,17 109:17,18,25 110:5,7 114:15,21 161:3,8,15 164:14,17,18,20, 24 165:8,12,17,18,2 5 166:3,12,13 167:6,7,11 168:5,12,14,15,2 2 169:23 170:18 171:5,8,12,13 172:7 174:6,8,17,22	175:6,9,12,16,18 ,22 178:8,22,23 181:2,5,8,25 182:15,19,20,25 183:8 184:1 187:2,18 188:11,21,25 189:12,16,25 190:2 191:2,11 192:10,12,17 195:6,18 196:23,25 197:8,11 198:14,17 201:4 202:18 203:23 205:1,13,15,18 206:20,24 211:7,21 212:24 213:20 214:12 215:18 216:1,3,10,12,15 ,25 217:5,18,20,22,2 4 218:1,7,13,17 219:2,4,6,20 222:3,7,11,18 223:5,9,25 224:5,22 226:3,24 227:4,12,15,23 228:17,21 229:22 230:9,12 231:4,11,12,15 232:2,9,12,19,24 233:18 234:4,13,23 235:8,11,14,17 237:11,12,22 238:5,17,21 239:7,22 240:2,4,5,13 242:20 245:14,18 247:3,10,15 249:18,25 250:3,4,5 252:25 253:2,3,9,18 254:3,4 255:2 256:11 259:11 260:1	261:16,22,25 262:8,11 263:13 267:23 269:9 271:5 272:19 273:20 274:6,8 287:9,18 289:18 290:9 293:22 295:4,15 302:23 303:17 308:13 311:5,6,13,19 312:20 314:6 316:12 318:25 319:2,4 325:3,6,7,8,19 328:3 game's 182:9 184:9 189:16 218:12,20 248:15 Games 160:15 164:11 207:2 GameSpots 175:23 GameSpy 172:2,13,22 176:25 195:2 196:22 236:15 gaming 114:7 170:16 207:1 214:15 225:20 226:3 295:12 Gate 171:19,22 gatekeepers 24:5,14 26:6 76:2 Gear 172:25 173:3,9,18,22,25 192:25 201:13 215:3,5 Gellis 116:15 125:12 135:22,23 138:10 139:11 140:14 144:14,16 163:13,14 179:6,7 180:2	271:19,21 272:14,16 273:10 324:12,13 general 2:6,8,10,12 4:6,16,17,19 8:20 35:22 47:2 76:17 103:5 120:18 124:10 143:4 152:3 190:14 213:17 218:14 231:18 242:13 252:10 271:11 297:14 302:9 308:2 generalities 103:2 105:19 generality 57:2 generally 21:18 34:24 38:22 105:9 122:22 190:16 217:15 218:11,18 277:22 278:5 310:19 311:11 general-purpose 287:5 generate 200:21 206:19 209:9 generated 16:20 generating 207:15 generation 165:15 183:9 204:21 205:1 215:7 325:24 generations 157:4,5 168:4 181:13 generation's 325:23 generative 262:22 genie 289:19,20 299:8 genres 39:22
---	--	---	--

<p>gentleman 239:18</p> <p>genuinely 182:17</p> <p>Geohot 297:3</p> <p>geopolitically 280:4</p> <p>George 295:25 296:7 297:18</p> <p>gets 112:16,17,18 131:20 137:4 191:7 233:8 264:23 276:14 293:8 320:13</p> <p>getting 5:24 24:9 50:11 51:15 55:24 66:13 92:25 96:3 104:2 155:12 191:21 219:18 231:13 248:22 251:18 282:6 297:6,9 312:21</p> <p>Gholami 163:20 180:5,6,8,11,14, 17 184:10,16,24 186:3,17,24 187:17 188:19 206:2 227:19 229:10,13 239:24 242:21 251:19 252:21,22 266:19</p> <p>Ghost 172:11</p> <p>giants 183:10</p> <p>Gibson 197:22 241:24</p> <p>Girl 76:23 77:2</p> <p>gist 185:8</p> <p>given 65:13 75:23 96:15 195:19 196:9 250:10</p> <p>gives 32:6 43:25 82:3 137:10 139:25 141:10 148:2 181:17</p>	<p>185:1</p> <p>giveth 195:14</p> <p>giving 35:23 41:12 116:23 230:11 298:2</p> <p>gladly 175:15</p> <p>global 113:4 183:1</p> <p>globe 52:3</p> <p>Glue 172:16</p> <p>goal 5:8 101:6 197:23,25 209:3 212:6 316:17</p> <p>goals 314:10</p> <p>gone 16:2 76:23 88:25 226:11 303:23 321:19</p> <p>Google 85:22 143:7</p> <p>Gopter 28:3</p> <p>Gordon 3:9 7:7</p> <p>govern 144:20</p> <p>grab 62:17</p> <p>grand 283:1</p> <p>grant 64:9 79:16 120:14,15 199:13 242:11 258:3,8 263:5</p> <p>granted 70:11 94:17 117:8 146:13 157:24 193:20 200:7 216:25 235:19 239:7 255:6</p> <p>granting 89:15 94:22 118:2 191:14 256:14 298:6</p> <p>graphical 133:20</p> <p>graphtics 276:4,20</p> <p>grappling 93:25</p> <p>grasp 165:3</p>	<p>grateful 267:11</p> <p>great 32:15 44:7 55:16 100:4 133:22 134:2 160:11 162:6 188:8 238:8 239:12 278:13 279:4</p> <p>greater 122:16 210:17 217:19</p> <p>green 274:17</p> <p>grind 279:20</p> <p>ground 259:5 279:7</p> <p>grounds 13:12 14:1,4,8 76:8</p> <p>group 38:8 173:2 185:15 268:17 272:4</p> <p>grow 175:9</p> <p>growing 87:24 88:2,3 164:22 165:1</p> <p>growth 183:1</p> <p>guess 15:10 36:13 39:24 54:2,21 140:8 157:12 162:24 168:9 224:16 236:16 242:10 252:22 271:7,19 287:22 311:3</p> <p>guidance 35:1 43:20,25 44:22,25 45:5 59:15,18,24 104:7 105:18</p> <p>guidelines 7:1</p> <p>guiding 41:10 61:14</p> <p>Guitar 174:18</p> <p>guns 246:3</p> <p>gut 302:15</p>	<p>guts 135:9</p> <p>guy 31:22 40:11 68:8,9 77:1 277:9</p> <p>guys 64:16 83:8 96:25 97:23 110:14 116:1 224:23</p> <hr/> <p>H</p> <hr/> <p>hack 81:5 95:24 121:22,24 123:5 151:17 237:10 272:5 308:12 313:20 314:7</p> <p>hackable 127:24</p> <p>hacked 75:10,11,14 97:7 131:12 149:16 152:22 153:12 155:23 215:5,8,12,13 217:2 237:24 295:25 303:20</p> <p>hacking 61:1 82:1 92:20 126:17 146:3 151:7,15 257:10 289:1 303:12 314:3</p> <p>hacks 92:23</p> <p>half 10:21 86:6</p> <p>hallelujah 278:13</p> <p>halo 181:21 276:11</p> <p>Han 261:15</p> <p>hand 28:10 216:15,18</p> <p>handle 79:14</p> <p>handled 284:23</p> <p>handling 121:14 122:12</p> <p>hands 66:20 181:15</p>
--	---	--	--

handset 118:18 Handy 197:20 Handy's 197:25 happen 18:20 128:2 136:20 141:6 237:5 happened 52:6 137:21 169:20 171:18 176:24 193:6 195:1,3 happens 112:4 176:11,13,21 177:8 187:18 193:5 194:13 250:11 259:12 happened 275:1 296:7 322:21 323:6 happening 297:10 happens 274:16 277:22 happy 274:18 310:21 317:25 326:15 327:1 happy 40:12 64:15 77:7 132:10 153:24 180:15 hard 6:24 55:13,18 63:21,22 64:9 69:2 135:10 152:24 154:5 192:3 201:19 213:22 251:25 276:11 305:19 323:13 harder 267:3 hardware 114:16 117:2,12 120:22 135:6 137:12 138:19 141:8 157:20 158:4 159:11 193:22,24	222:14 274:8,11 275:10 315:7 319:3 321:14 323:10 harm 23:22 94:14 131:20 208:9,10 303:15 harmed 49:25 harms 117:14 118:3,4 136:15,22,23 208:12,13 211:10 Harvard 163:11 haven't 66:7 68:21 71:1 84:24 97:16 110:23 111:10 132:14 134:12 135:7 214:18 311:2 having 51:16 52:7 53:2 60:12 65:1 95:14 102:21 125:6 140:18 145:23 147:2 164:25 166:18 179:14 187:25 188:12 200:4 206:5 250:12,14 272:21 278:9 283:20 298:24 300:12 305:19 307:15 HD 10:2,21 11:22 12:16,17 15:2 49:19 50:12,13 51:11 53:10 72:18,20,24 73:3,8,15 74:2,7,12 89:23 90:6,10,12 91:21 93:17,21 94:5 101:2 102:3,5 107:3 HDCP 114:16 HDMI 114:8,17	head 13:11 headlines 77:23 heads 13:10 29:9 69:23 hear 9:7 92:22 132:8 154:4 160:12 175:11 182:3 227:19 268:12 289:6,10,12 327:2 heard 32:17 48:6 50:20 53:25 83:7 92:14 93:11,12 97:22 102:4 111:16 115:18 116:25 140:3 142:2 159:5 188:17 197:19 205:17 218:18 234:10 242:18 257:3 267:15 291:22 302:12 303:5 305:11,23 311:2 hearing 4:9,25 5:6 9:13 15:11 29:2 59:4 88:22,25 91:6 98:1,4 107:20 114:22 115:2 118:7 161:6 162:3,22 211:13 213:6 257:15 276:1 289:13 hearings 1:5 5:8 heart 23:2,12 heats 276:12 heed 48:9 Heidi 28:3 held 92:20 Hello 170:14 help 45:14 57:14,15 63:10 123:8 168:18	187:15 199:18 202:7 213:13 275:21 324:6,7 325:4 helped 36:18 helpful 5:5 6:8,14 28:24 30:5 34:14 59:17,23 61:14 63:13 64:8 65:2 155:16 160:12 171:2 293:19 326:15 helps 6:14 53:8 202:8 hereby 329:3 hero 40:10 174:18 he's 5:4 320:10 hesitate 123:11 203:6 hiding 97:1 high 9:20 10:6 11:17,19 12:3 13:16 25:22 26:8 84:4,10 89:3,8 91:7,8,18 98:5 99:22 100:7,11 101:1 109:25 118:16 120:21 200:1 284:2 313:19 higher 50:21 51:9 135:11 highest 120:14 highlight 125:14 146:14 206:16 highly 30:25 100:19 high-quality 207:9,13 high-risk 78:7 hijack 299:20 Hilkert 90:8,9 hint 256:16
---	---	--	--

hire 43:22 historic 183:25 historical 34:3 64:22 66:3 182:20 187:10 199:3 histories 183:3 226:4 history 23:14,24 76:4 104:15 105:23 164:21 166:1 181:23 199:2 218:21 226:3,24 227:10 229:15 233:10 274:10 hit 49:6 Hitler 33:23 34:2 35:21 37:13 hobbled 325:11 Hobbs 20:10 21:1 24:18 hobgoblins 118:14 hold 181:15,21 182:10 204:24 228:18 holder 60:1 126:5 holders 23:20,23 101:5 104:14 106:1 238:6 267:1 holding 80:12 181:6 holes 64:14 Hollywood 14:22 home 3:25 76:17 84:12 120:13 122:9 123:23 124:1,11,17 126:23 138:3 140:15 147:7 153:13 175:25 245:22 311:5	honest 205:24 honestly 92:4 159:22 176:20 203:8 honor 180:23 hook 158:15,17 hooks 299:18 hook-up 225:14 Hoop 109:15 hope 77:12 95:1 248:13 266:16 280:19 hopefully 115:5 horror 85:1 hosted 230:1 269:18 hosting 5:5 236:2 hot 276:5,14 Hotz 295:25 297:19 hour 101:20 hours 173:5 181:22 240:25 251:21,24 252:1 259:25 house 101:19 294:1 household 139:6,7 house's 137:12 Houston 238:15 hub 146:4 hubs 147:3 huge 73:6 175:16 188:22 224:23 253:4 hugely 11:7 Hulu 85:21 121:12 122:8 123:6,17 124:1 147:25 149:7 human 248:19	251:2,9 human-like 248:2 humanly 181:16 hundred 171:6 196:11 223:16 260:2 283:20 315:11 hundreds 99:20 101:20 181:1 183:22 191:2 223:9 240:3 259:25 283:20 hung 266:16 hurdle 53:1 hurdles 52:22,23 hype 175:23 hypothetical 91:24 92:4 hypothetically 187:6 203:11 <hr/> <p style="text-align: center;">I</p> <hr/> icons 298:22 IDA 8:9 idea 34:17,18,23 37:8 41:3 56:8 103:3,4 104:3 147:19 194:18 218:17 230:22 247:8 263:1 303:10 308:6 311:12 ideal 45:10 ideally 34:1,22 35:10 ideas 242:16 289:7 identical 18:17 identified 192:19 223:15,17 224:8 263:14 identify 163:2 263:11	identifying 22:19 identities 247:16 identity 66:4 166:14 IEA 7:10 iFixit 271:25 273:13 309:16 317:24 ignored 296:9 II 239:4 illegal 80:18 112:12 140:22 146:17 147:21,23 151:3,25 153:7 illegitimate 102:19 illuminating 33:17 illustrate 35:5 illustrating 171:2 I'm 5:9 7:7,13 8:20 20:21 22:18,19 26:24 70:17 97:25 98:4 99:7 100:11 125:15 135:23 142:10 150:4 169:8 178:25 199:20 208:9 226:21 230:4 260:25 271:13 272:9 273:14 282:14 296:9 304:16 image 11:10,11,14 12:4,12,13,16,20 15:4 16:4 17:23 21:23 22:9 25:12,20 99:17,18,22 images 9:22 10:10,13 12:11 13:1,2,7 14:4 15:2,3 20:15 40:14 68:9,23 109:25 190:18
--	---	---	--

imagination 118:11 imagine 4:24 11:18 167:16 176:3 177:12 252:6 300:14 imagining 129:13,21 immediate 13:12 323:12 immediately 80:25 immersed 62:14 impact 69:10 79:16,22,24 187:12 191:10 221:9 225:25 229:17,21 236:21 237:7,21 254:13 256:4 265:2,20 278:21 279:9 283:12 impacted 79:5 112:1 188:11 229:22 275:5 impacting 79:20 impacts 141:21 206:17 273:16 304:2 impediments 253:24 impetus 324:17 implementation 97:12 209:23 implementations 97:11 implicated 66:11 326:18 implication 78:19 implications 80:1 implicit 21:14 imply 74:25 import 313:19,21 316:21	importance 20:4 75:21 147:2 164:20 205:14 239:13 important 26:25 62:9 75:8 93:5 98:14 108:7 113:3 117:22,23 119:19 136:16 137:13 141:3 145:19 147:13 151:20 158:2 173:15 174:23 176:5 183:18,25 190:1 231:22 233:11 234:25 239:9 240:22 243:18 244:15,22 252:8 253:8,9 254:2 255:23 256:13 257:3,4 262:4 302:22 324:20 importantly 13:18 importing 280:9 316:6,7,8 impose 184:25 imposed 76:6 impossible 159:21 216:24 259:15 299:6 impression 119:14 183:17 291:15 imprimatur 140:1 improve 17:15 improved 12:9 16:1 improvement 258:6 impugn 140:23 inaccessible 183:16 inadequacy 50:8 inadequate 198:9	inadvertently 129:11 141:14 inappropriate 139:9 inarguably 166:17 incentive 145:9 316:10 incentives 207:15 302:23 incentivize 145:2 incidental 218:3 263:3 inclined 79:16 242:11 include 21:2 43:24 47:16 49:1 70:20 73:14 76:22 90:6 96:21 169:11 172:10 192:11 included 47:15 49:20 50:5 187:1 218:12 223:9 234:1 253:14,20 includes 60:18 221:8 including 33:19 48:19 89:10 170:7 171:23 194:5 197:7 219:4 237:14 239:3 290:7 295:15 inclusion 169:15 inclusive 53:17 inconvenience 158:13 236:22 311:15 inconveniences 263:4 inconvenient 94:11 incorporated 89:17 102:22	incorporating 70:1 103:20 incorrect 238:9 246:16 incorrectly 22:20 38:2 increase 94:23,24 95:2 127:7 132:21 256:15 287:16 increased 122:4 increasing 127:9 increasingly 168:5 incredible 185:11 256:21 incredibly 186:13 240:14 252:3 281:16 282:6 incremental 265:11 indeed 16:4 19:22 independent 7:10,16 26:17 153:1 173:2 independently 254:10 282:11 325:7 in-depth 107:21 indication 160:5 311:20 indicators 90:3 individual 38:19 86:17 97:8,9 116:13 131:17 150:18 200:13 284:3 individualized 97:17 individually 57:9 individuals 258:5,10 indoctrinate
--	---	---	--

247:22 indulge 22:23 industries 152:5 206:11 313:7 industry 3:19 9:5 143:11,16 148:7 166:2 228:2,19 231:25 236:19 inevitably 167:11 inexpensive 124:5 infeasible 283:3 inferior 101:2 information 2:14 43:21 77:6,7 152:17 168:1 219:18 224:10 226:19 260:25 300:3,5 302:8 304:24 307:25 308:1 310:21,22 319:22 322:8,11,13 324:8 326:16 infrastructure 165:10 infringe 123:20 148:10 infringed 211:7 infringement 59:9 71:9 117:16 123:25 146:3 175:11 197:13 207:18 208:2 215:24 255:11,12 256:11,13,15,24 266:2,3 303:17 infringers 146:16 infringing 57:11 209:12 211:8 225:24 229:9 237:2,15,16 245:1 267:21 in-game 219:8	inherently 145:1 initial 15:22 314:23 initially 247:17 initiate 201:1 innovation 144:25 145:2 218:6 innovations 145:11 219:1 innovative 146:7 inoperable 194:1 inquiry 39:14 227:25 insert 39:2 inserted 27:24 inside 33:22 294:19,22 inspired 39:1,24 40:2,3 326:12 install 117:11 121:16 124:25 126:12 135:14 142:19,25 143:21 146:17 151:8,17 152:19 155:23 156:4 159:6,10 168:18 285:4 287:15 288:8 300:16 installation 169:16 241:8 installations 166:7 installed 117:17 125:5 126:22 128:3 129:11 130:10 146:22 148:21 150:11 151:4 157:22 314:8 installing 119:24 147:23 154:17 159:24 286:18,19	289:7,8,9 instance 36:2 92:1 104:24 109:11 136:13 137:18 253:13 instances 66:24 106:4 126:12 139:4 149:18 193:3 221:20 235:16 instead 53:13 54:13 65:17 75:6 77:4 136:18 274:17,18 292:14 298:24 300:12 institution 187:15 235:21 246:2 institutional 256:25 institutions 168:23 242:4 253:25 266:20 instruction 64:21 instructions 22:25 48:9 115:19 insurance 41:13,20 50:23 53:2 integrity 206:16 207:23 intellectual 3:5 7:20 8:1,7 107:18 259:15 intelligence 186:19 219:10 intended 15:25 29:13 64:2,20 74:17,21 75:3 136:24 141:4 intending 124:13 125:16 264:8 intent 121:8 126:5 247:12 266:10	308:14 intention 193:3,8 intentionally 130:8 intentioned 212:7 intents 167:6 interact 145:13 181:20 interacting 248:9,10 251:1 252:16 interaction 245:10 247:20 interactive 164:11 172:16 240:1 245:9 interactivity 217:20 244:2 interconnected 123:4 interest 7:4 29:8 42:11 137:1,3 141:9 153:17,21 187:10 197:8 212:14 238:6 242:19 246:10 255:24 256:22 288:9,16 interested 4:25 5:18 29:2 40:24 58:2 85:18 97:25 98:4 109:18 161:6 162:3,16,21 190:13 211:13 242:16 285:1,3 287:12 288:5,7 326:21 329:11 interesting 52:21 54:19 63:7 74:16 114:21,25 141:19 145:11 160:9 176:9 184:20 185:14 196:6,14 205:4
---	---	---	--

<p>218:16 264:16 267:10 323:9</p> <p>interests 116:3,13 153:19,20 206:17 302:21</p> <p>interface 133:20</p> <p>interject 30:6 162:12</p> <p>interlace 13:23</p> <p>interlaced 12:25 99:18</p> <p>interlacing 13:4,6,11</p> <p>intermediaries 76:7</p> <p>internal 172:19 278:14 322:9</p> <p>international 7:22 8:3 51:5 52:2 54:25 279:17</p> <p>Internet 48:24 81:19 91:1 158:10 245:21 253:1 256:9</p> <p>interoperability 154:18 208:25 298:11 302:25</p> <p>interoperable 119:24</p> <p>interoperates 153:8</p> <p>interplay 218:17</p> <p>interpretation 105:15</p> <p>interrelated 150:7 189:21</p> <p>interrupt 5:24 16:9 27:7 99:8 190:6</p> <p>interrupted 57:22</p> <p>interrupting 258:23</p>	<p>in-theater 148:2</p> <p>intimacy 164:17</p> <p>introduce 4:13 48:11 116:1,6 271:13 275:22</p> <p>introduced 11:23 144:11 188:8 274:12</p> <p>introduces 262:21</p> <p>introducing 271:20</p> <p>introduction 89:2 116:4 162:24</p> <p>introductory 42:5 47:22 48:4 116:5,7</p> <p>intuit 287:14</p> <p>invalidating 102:18</p> <p>inventor's 133:18</p> <p>inventory 102:4 165:9</p> <p>invest 78:5 85:12</p> <p>investing 185:16</p> <p>investments 208:2,6</p> <p>involve 21:15 22:5 65:16,20,21 67:22 68:5,10 273:2 277:15 292:9,10 318:9 319:18 321:13</p> <p>involved 31:11 65:17 150:17 168:16 169:1 231:14 239:18 258:5,10 272:6 276:24 288:21,24</p> <p>involves 199:10 200:16 201:18 204:13 244:1 245:9 272:19</p>	<p>involving 68:11 136:4 179:10 303:8,12</p> <p>IOS 300:16</p> <p>IP 267:19,25 268:20</p> <p>iPhone 142:24 290:2,4 293:7,11 295:15,16,24 296:4 298:20 299:8 301:17 328:10</p> <p>iPhones 272:4</p> <p>irrelevant 56:16,19 227:10</p> <p>Irvine 7:20</p> <p>isn't 46:23 51:25 56:24 102:1 140:16 191:25 194:14 195:17 213:8 216:7 245:8 251:22 260:8 301:1 303:24</p> <p>isolate 292:13</p> <p>isolated 32:20</p> <p>issue 23:3 29:7 58:3 75:7 77:11 80:5,13 81:9,11 90:16 100:18 110:18 119:5,19,22 120:1,25 138:25 175:7 184:17 200:6 202:13 204:3 206:14 208:18 211:15 212:13 214:12 215:25 220:9 221:22 222:16,18 224:1,18 231:18 232:1 238:8 239:12 242:12,25 245:12 257:25</p>	<p>271:18 272:24 275:5 280:22 304:15,24 305:20 309:3 310:14 311:4 312:2,23 315:21 318:12 323:3</p> <p>issues 5:18 12:7,24 28:21 39:7,8 67:14 98:5,15 118:16 137:23 162:23 171:3 172:24 196:7 212:24 215:21 221:8 225:18 237:25 257:5 265:13 275:16 295:9,10 311:10</p> <p>item 214:24</p> <p>it'll 6:4 69:22</p> <p>it's 6:8,11,13 8:12 10:4,5 11:12,13 12:5,17 17:5,19 18:5 19:7,8,9 21:22 23:2,21 24:5,12 25:14 27:17 28:14,23 29:8 30:12,20 32:14,15,16,18,1 9 33:1,11 35:3,4,9,12 36:13 38:4,10 39:19 40:8,10,16 41:7,23 42:19 43:23 44:16,17 45:2 46:11,12,17,19 48:12 49:16 52:1,3,5 55:1 56:24 57:6 59:12,16,22 60:3 62:7,8,9,11 63:20,21 64:9,10,14 66:3,20 67:15,22 68:9,15 69:2 70:17,23 71:6,10 73:4 74:3</p>
--	--	--	--

75:2,15 76:9 78:24 81:10 84:16,17 89:12,13 91:20,22 93:5,18 99:4 100:15,19,20,21 101:1,4,18,25 102:12,21 104:7 107:24 108:6,16 110:8 113:3,22 115:1 119:20 123:22 124:12 126:19 130:14,21 131:13 132:25 133:2,22,24 134:2,14 136:16 139:15 140:5,8 141:2,19 142:17 146:7 147:1,13,22 150:8,14,15 151:24 152:20,21,22 153:12 154:5,12 155:16 156:20 157:13,15 158:20,21 159:2,15,17,21 161:16,22,24 164:16 165:16,17 171:5,7 174:5 175:10 176:5 178:14 180:23 182:3,4 186:15 188:5,8 190:3 191:8,9,12,17 192:4,8 193:2,3 194:1 196:14 197:5 198:19 201:4,5,6 202:14,15,21 204:25 205:7 209:19 211:14,22 212:18 213:21,22,25 217:8,11,12	220:11 221:23 222:21 224:20,22,23 226:15 227:3 229:5,8,15 231:5,7,8 233:18 235:1,24 244:3,10,11,17 246:16 249:25 250:8,24 251:25 252:8 253:7 254:2 255:16 258:15 263:2,9,22 264:2,12 267:22 268:24 274:6,15 276:23,25 277:20,24 278:3,8 281:8,16,22,24 282:10 283:13,21 284:18,19 289:8,9 290:2 292:17 299:5,16 301:15 304:3 306:1 307:5 308:20 310:16 312:2,7,8,10,23 315:25 316:15,24 318:24 319:16 320:11,22 321:20 322:23 323:13,20 325:14 327:5,23 iTunes 85:22 <hr/> <div style="text-align: center;">J</div> <hr/> Jack 3:4 7:19 69:11 Jacqueline 2:5 4:6 jailbreak 117:9 125:6 128:15 203:15 268:25 297:24 301:10,11 306:11 309:19	310:3,5 319:6,18 jailbreaking 115:24 117:23 118:6 122:4 123:13 173:20,23 202:20 203:1,10,16,21,2 5 204:2,10,20,23 255:3 271:6,18 293:7,11 298:5,10 303:8,10,13 319:15 320:20,22 328:11 jailbroken 118:15 123:19 124:25 130:19 202:21 272:3 287:20 289:5 312:14 319:7 James 109:15 January 183:14 Japanese 297:4 Jay 3:13 120:3 127:11 272:1 296:2 307:25 Jersey 31:15 297:7 Jim 3:9 8:10 24:6,15 50:20 101:15 102:1 job 8:12,22 40:12 95:3 96:25 245:2 John 23:1 174:20 175:2 200:13 joint 70:14 92:6 joke 41:24 JONATHAN 3:22 Jones 25:18 Joseph 40:10 Journal 76:10 journey 40:10,18 166:5,16 167:5,7	169:5,15 239:19 247:25 248:1,16,22 249:12 250:7,13,17,20,2 2,23 251:8,21 258:24 Jr 239:4 judge 20:18 jump 48:9 223:8 258:25 jurisdictional 297:1,8 jurisprudence 102:16 justification 71:24 92:1 311:16,22 justified 137:4 213:21,24 214:22 justify 236:24 265:12 313:24 <hr/> <div style="text-align: center;">K</div> <hr/> Kagan 83:3 Kartemquin 3:10 7:8,23 8:4,12 9:19 Kendra 163:10 200:24 Kenya 287:8 316:21 key 41:12 81:4 95:15,18,22 96:2,4,5,7,13,21 97:2,6,9,12 112:17 325:2 keys 95:15 96:8,11,14,23 97:1,3,13,19 kid 264:2 289:18 297:5,6 kids 109:23 284:11,12 287:8
---	--	---	---

328:2 kindling 23:7 kinds 38:7 132:4 176:18 178:8 185:18 208:4 238:12 294:25 314:8,21 328:3 kit 133:16 282:17 283:11 kits 278:10 Klibaner 5:4 knew 296:12 Knights 230:15 knowledge 145:15 167:23 169:17 178:11 194:14,17 196:19 200:16 204:13 227:4 231:13 known 192:23 Kong 239:4 Korea 113:5 Kyle 271:24 288:11 <hr/> <div style="text-align: center;">L</div> <hr/> L.A 33:20 LA 3:21 labeled 18:5 labels 196:23 labor 240:25 lack 90:20 307:5 lacking 132:15 laid 22:25 LAN 186:22,25 225:14 262:2,9,18 landfills 284:17 landscape 171:18 language	154:1,21,24 155:18,21 laptop 74:5 114:11 126:24 127:1,2 135:17 147:5 158:15 large 7:24 11:7 143:5 158:6 171:23 187:2 195:14 220:24 240:23 294:14 296:13 largely 33:25 211:4 larger 33:7 153:12 185:17 largest 295:19 last 9:16 23:21 28:18 33:9 59:25 72:2 74:18 75:25 77:2 82:19 88:25 114:4 115:1 117:25 140:4 164:10 180:25 210:7 218:7 223:2 236:25 241:9 255:14 262:1 273:19 280:20 285:1 287:10 290:3 291:18,23 295:17 302:11,20 303:21 311:3 314:11 327:2 lasted 325:14 lasting 183:17 lasts 278:4,11 late 35:12 106:13 115:9 167:19 later 23:3 80:10 112:21 144:6 180:16 210:25 215:23 220:11 latest 148:25	Latham 33:16 40:21 Latham's 68:23 laudable 132:25 launch 262:13 launched 172:21 law 5:2,19 7:15,20 8:1,2,7 24:25 29:17 65:3 94:19 104:13,24 105:24 136:11 139:17,24 145:5 163:10,11 213:4 226:9 245:4 267:1 lawful 59:16 73:25 149:11 150:19 193:17 212:22 254:13 255:9 266:14 326:8 lawfully 154:17 172:8 179:16 243:5 273:9 326:9 lawfully-owned 228:15 256:7 lawmakers 139:21 laws 136:14 139:18 140:7 lawsuit 104:17 296:21,23 lawyer 18:23 104:20 268:13 lawyerly 268:4 layer 96:18 150:8 151:1 layers 150:25 lead 146:15 212:7 234:7 272:14 leading 185:13 leads 106:5 237:2 leaned 287:24 learn 19:2 165:17	168:6 183:10 277:9 learned 181:4 203:2 Learner 47:5 learning 142:8 305:16 least 22:1 44:13 66:25 71:4 82:3 83:20 91:20 139:8 142:14 154:10 171:4 184:18 187:9 192:19 195:2 196:8 215:18 221:19 222:7 231:4 234:3,24 245:17 254:3 258:17 311:7 leave 15:17 32:12 59:3 77:3 167:14 170:22 leaves 309:15 led 65:15 83:13 194:25 legal 39:19 48:14 55:25 77:3 78:4 83:13,16 114:24 176:7 197:15 291:3,13 295:9 296:14 309:2 320:24 legally 113:24 legislative 76:3 legitimate 84:8 93:22 95:6,8,18 96:21 148:9,22 221:9 237:19 legitimately 179:19,20 230:24 320:23 length 105:8 lengthy 102:22 103:5,24 Leni 34:2 37:17
--	---	---	---

<p>39:12 67:10 90:25</p> <p>Lerner 3:4 7:19 42:4,5 43:9 44:10 45:15 47:7 98:17,19 101:11,12 106:15,17 107:8,15,17 113:25</p> <p>less 22:9 57:5 136:6 250:4 282:14 316:7 319:3</p> <p>lessen 208:5</p> <p>lessons 181:4</p> <p>let's 79:16 106:3 138:21 187:6 200:2 242:10 247:23 266:11 287:3 309:25 315:4 327:16</p> <p>letter 64:17</p> <p>letters 26:5 50:23 104:16</p> <p>level 57:2 69:1 95:9,10 97:4,5 98:25 100:20 134:25 135:8,12 144:10 200:1,9,24 226:20 258:18</p> <p>leverage 78:1</p> <p>LG 128:3,11,20 132:1,25 133:10,13 134:9,13 143:15 144:5 153:1 156:17</p> <p>LG's 132:15 133:22 142:19 149:12 153:11</p> <p>liability 131:19 176:7 197:13,14,17</p>	<p>liberal 272:20</p> <p>liberation 303:11</p> <p>librarian 197:15 302:20</p> <p>librarians 240:21</p> <p>libraries 133:20 197:7</p> <p>library 83:25 86:11 88:1 141:15 193:20 197:7,22 241:12,25 258:11</p> <p>license 34:8 35:13 37:9 40:5 41:8 42:14 58:13 60:2 66:19 67:11,12 68:18 69:9,13 78:25 126:1,3 150:11 175:18,19 178:3 260:15 261:4</p> <p>licensed 36:20,23 44:19 57:24 62:15,19 86:5 117:12,13 125:18 154:17 205:21 236:11,18</p> <p>licensees 81:19</p> <p>licenses 57:14,15 205:21 208:1 236:4</p> <p>licensing 42:19 50:10 77:19 79:4,9,10,21 81:9,13 113:19 208:4 236:2 253:23 259:8,10,23</p> <p>life 10:11 40:11,16 131:3 144:6 189:13</p> <p>lifespan 273:18 287:13 316:18</p>	<p>318:23</p> <p>light 15:14 16:2 36:18 166:22 167:4 213:19 275:2 315:19</p> <p>likelihood 57:4</p> <p>likely 28:25 57:5 105:20 157:5,8 183:19 204:25</p> <p>Likewise 204:15</p> <p>limit 20:1 74:20 200:15 262:10</p> <p>limitation 49:21 60:19 74:11 86:15,20 110:23</p> <p>limitations 214:21</p> <p>limited 49:22 73:17 92:1,5 93:15 106:8 214:14,22 218:2 258:4</p> <p>limiting 125:16</p> <p>linchpin 95:16</p> <p>Linda 65:13</p> <p>Lindsey 164:1 206:9 211:10 272:11 302:1</p> <p>line 27:16,18 28:4,7 29:18 30:2 32:11 36:3 54:2 58:16 59:23 65:24,25 66:2 102:13,14 104:6 105:14 106:20 175:23 216:7 217:8 232:12 241:16,20 242:15</p> <p>lineage 229:21</p> <p>lines 38:23 39:22 53:21 55:14 57:3 59:20,21 99:20 104:3,11,22 105:22 232:14</p>	<p>link 82:12,16</p> <p>linked 281:3,23,24</p> <p>links 281:5</p> <p>Linux 116:13 289:9 311:1</p> <p>list 31:4,6 50:1 61:19 171:9 172:8 223:16 234:4 281:18</p> <p>listed 29:17 32:9 149:5 191:4 240:4 263:10</p> <p>listening 88:7 142:12</p> <p>lists 149:2</p> <p>literacy 40:25</p> <p>literal 179:13 226:25</p> <p>literally 173:10 175:1,3 253:5 260:18 274:21 283:9</p> <p>literature 187:22 195:8</p> <p>litigated 31:8</p> <p>little 16:22 33:6 48:11,15 53:19,20 56:3 59:14 67:18 68:8 73:4,12 79:3,22 88:24 93:14,19 95:10,24 96:9 103:8 106:12 115:8 131:1,13 135:11 137:19 140:4,9 155:16 165:5 170:19 171:1 173:1 175:1,8 176:10 184:23 189:15 195:3 196:12 197:3 198:15,18 201:12 208:8 217:11 259:7,20 262:2 264:15</p>
--	--	---	---

269:24 273:13 286:8 289:4 291:23 297:4 298:13,16 303:9,21 310:14 314:13 316:24 live 107:24 138:12 262:14 lived 105:22 lives 181:11 182:16 living 32:19,25 138:22 139:10 142:11 147:15 187:16 188:13 LLC 3:14 272:2 loaded 266:8 299:15,16,17 local 165:23 218:3 234:16 240:8,15 262:2,9 locally 216:21 located 254:8 location 227:16 locked 126:20 183:25 325:16 locks 320:15,18 log 221:21 logic 179:10 273:7,8 299:21 326:10 logical 287:14 logs 173:9 176:23 232:14 long 31:4 75:4 105:16 131:7,23 142:1 149:2 172:8 181:16 187:19 210:11 220:7 232:21 251:21,22 273:19 278:11 280:21 285:1 287:18 289:18	290:14 297:17 320:2 longer 24:5 81:5 150:24 169:23 171:14 172:17,23 177:19 196:24 220:11 222:22,23 252:5 254:23 271:16 286:10 320:11 longer-form 54:11 long-time 164:12 Los 7:15 50:16 lose 167:11 177:22 254:20 loses 186:13 losing 165:2,13 losses 112:9 lost 40:11 165:11,12 181:2 183:19 184:8 230:11 231:1 247:7,9 279:24 280:11 lot 4:12,24 9:17 22:19 23:24 27:19 30:17 42:1 43:21 45:5 47:3,25 48:12,19,23 49:24 51:7 54:4 55:21,23 56:4 76:1 77:23 79:1 93:16 103:12 104:16 113:12 135:13 149:12 156:11 162:10 171:21 175:11 178:7 184:24 186:13 187:21 190:8 194:10,12,13 196:7 213:8 214:1,11 218:18 219:25 224:5	226:2 229:22 231:6 242:17 253:12 254:2 257:3 276:12 286:17 288:24 289:1,14 308:1 310:9 326:25 328:2 lots 39:3 42:17 44:25 273:20 274:8 love 154:4 155:21 207:6 220:12 232:23 298:18 307:18 312:9 loved 173:3 299:1 Lovelace 65:13 lovers 220:24 low 124:9 135:8 lower 120:24 134:24 144:10 313:21 loyalty 185:19 lunch 160:13,14,18 <hr/> M <hr/> Machina 149:4 machine 23:10 133:25 309:24 325:1,5 329:8 machines 248:8 magical 312:12 magnifier 18:3 magnitude 101:3 Magnolia 9:23 mailing 275:13 main 81:7 281:7,10 288:3 306:10,11 308:5,15 309:23 318:5,11 maintaining 64:22	236:8 major 24:12 25:5,6 52:5 171:21 172:20 190:4 253:9 284:7 majority 43:12 73:7 87:21 112:4 240:13 maker 64:7 makers 32:3 257:14 304:9 311:18 malicious 129:4 140:11 malware 130:10 131:21 136:14 man 25:18 77:2 296:6 manage 167:8 284:20 320:2 managed 113:24 150:22 Manager 8:21 76:17 manager's 76:4,9 managing 76:18 manner 201:7,8 211:8 mantel 259:22 manual 273:22 275:23 276:23 277:4,6 317:21 manuals 317:19 manufacture 279:1 280:11,20 manufactured 278:22 317:23 manufacturer 85:13 129:20 130:20,24 131:18,20 134:15,19,22
--	---	---	---

135:2 144:12 156:15 254:22 320:13,15 327:15,16 manufacturers 118:18,24 125:23,25 126:20 130:17 131:9,23 133:1 134:15 143:14 145:5 151:16 152:2,19 193:4 235:16 283:5,6 286:10 295:6 322:20 324:3 manufacturer's 128:5 229:3 manufactures 322:5 manufacturing 254:23 279:9,12 285:24 map 218:2 marched 182:19 margins 187:22 Mario 239:4 253:13 Mark 83:8 marked 9:13 market 50:15 57:24 58:8,13 69:10 79:4 80:17 81:2 92:25 94:25 128:7 174:22 178:10 220:25 237:3,16 263:24 264:8,14 274:13 295:10 310:20 315:11 323:14 marketed 32:21 marketing 78:11 89:22 marketplace 66:22 78:17 80:20 81:17	82:18 87:20 112:2 206:19 207:14 225:5 markets 78:17 113:7 118:11 239:11 marking 6:5 marriage 40:13 massive 80:5 85:11 102:2 234:6 massively 227:15,22 228:20 229:12 match 281:14 matching 281:14 matchmaking 161:12 199:10 205:17,23 224:2,3 236:5 250:8,11,19 material 13:17 20:11 36:15,20 37:4,20 71:6 72:12,24 81:3 86:24 112:12,14 207:10 256:15 269:17 279:7 materialized 118:15 materially 79:20 materials 40:23 85:8 279:21 280:17 Matt 33:16 40:21 68:22 84:11 116:18 146:1 163:22 272:7 matter 70:11 87:3 149:25 152:4 159:16 244:20 291:14 matters 136:9 Matthew 3:16	8:18 maws 283:9 maximize 279:4 maximum 198:3 may 1:17 4:2 5:19 56:3 70:20,24 85:10 96:10 106:24 130:21 137:8 138:5,16 139:7 140:6 149:18 157:19 158:21 167:11 174:2 181:24 189:13 191:14 195:13,14 197:1 201:19,20,21,23 202:4,16 204:17 213:22,23 215:7 222:17 223:1 225:15 233:2 238:14 243:25 244:24 262:14,15 265:14 266:24 271:2 288:2 291:9,25 305:13 310:14 312:4 323:2,16 324:2 325:8 326:20 328:5 maybe 27:10 28:20 47:13,14,16 53:2 54:13,22,24 56:1 75:10 82:7 96:19 97:24 98:16 114:19 115:18 119:16 138:25 140:9 160:4 187:10 190:24 191:16 192:5 196:18 199:5,6 200:9 206:14 224:13 232:21 241:11 252:25 282:20,21 289:8,9 300:1 306:16 316:12	322:22,24 mean 21:13 23:20 25:25 28:8,21 43:18,19,24 44:8 46:22 49:11,12 54:6 59:14 69:21 71:19 73:11 75:11 91:12 101:8 103:1,2,10,22 105:9 106:6 108:12 110:11 135:9 138:24 139:2,3 140:2,8 141:19,20 142:18 143:13 154:8,9 168:16 169:18 175:10 178:5 190:23 195:16 196:7,10 197:23 215:21 222:16 232:3 242:9 243:13,16,21 246:6 251:15 255:17 288:1 291:12,21 297:11 298:8 308:17,23 309:4,11 meaning 30:20 42:25 265:6 meaningful 177:18 190:4 means 9:18 49:17 58:21 62:22 93:11 95:14 130:7 175:2 176:18 232:2,11,16,17 276:20 283:20 327:22 meant 128:17 232:5 265:3 measure 60:3 67:25 75:17 measures 72:14
---	---	--	--

<p>75:18 87:1</p> <p>mech 186:12</p> <p>mechanic 277:11</p> <p>mechanics 185:20,25 227:11 229:17</p> <p>mechanism 129:22 130:8 308:10</p> <p>mechanisms 177:10</p> <p>mechs 186:6</p> <p>media 3:12 8:16 40:23,24,25 48:19 63:4 68:25 81:6,22 117:13,16 127:17 137:7 154:17 164:11 241:2 273:1</p> <p>medium 37:16 137:3 188:3 197:9 243:25 245:9</p> <p>meet 94:6 133:5,8</p> <p>megabits 101:8</p> <p>Megan 4:19</p> <p>melt 276:12 279:21 280:1</p> <p>melted 279:24</p> <p>member 7:10 185:2 268:16 272:4 274:4 286:2</p> <p>members 2:3 139:6,7 166:2 182:7 183:23 235:1,7,18 239:13 254:6</p> <p>memories 181:7</p> <p>memory 158:8 293:9,13,16 299:15</p>	<p>men 165:21</p> <p>mention 51:24 53:21 55:20 56:7 59:19 60:1 323:5</p> <p>mentioned 49:4 50:24 51:24 61:17 77:1,14 87:10 128:13,14 132:13 184:7 214:24 219:6 231:12 236:3,10 249:2 262:6 266:19 286:16 288:2 304:21 305:17</p> <p>mentioning 54:25</p> <p>mentions 286:17</p> <p>mere 20:25 121:15 167:2 182:7</p> <p>merely 21:23 182:21 315:25</p> <p>merit 166:24</p> <p>mess 145:7</p> <p>messages 51:10 201:1</p> <p>Messed 294:11</p> <p>met 72:5 313:12</p> <p>metal 172:25 173:3,9,18,22,25 192:25 201:13 215:3,4 280:15</p> <p>metals 280:15</p> <p>metaphysical 63:7</p> <p>method 10:20 202:4 255:12</p> <p>methods 77:18 83:6 149:11</p> <p>Mexico 275:13</p> <p>mic 4:5</p> <p>Michael 32:5 50:6</p> <p>microphone 141:24 142:21</p>	<p>microphones 138:8</p> <p>Microsoft 234:5 268:17 274:12,25 275:6,11,15 285:13 304:14 305:4 322:9</p> <p>Microsoft's 215:10 268:13</p> <p>middle 52:1 185:7</p> <p>midnight 31:12 175:24 264:5</p> <p>midwest 85:16</p> <p>million 11:16,17 78:9,11 80:18,21 82:21,22 275:7 277:5,6,13 278:24,25 287:2 295:17 315:8,14</p> <p>millions 78:12 182:1 183:23 274:21 284:18 323:6</p> <p>mind 59:6 206:2 301:25 317:18</p> <p>minded 246:5</p> <p>mine 279:7 280:18</p> <p>Minecraft 294:16 298:5 311:8,10,25 312:1,8,11,13,14 ,19 327:6,9</p> <p>minimal 226:1</p> <p>minimum 10:2 87:7</p> <p>minimus 263:4 293:15</p> <p>minor 294:19 311:24</p> <p>minute 81:1,18 88:5 119:5 146:24 190:7</p> <p>minutes 74:4</p>	<p>106:14</p> <p>misconception 27:4</p> <p>miserable 46:4</p> <p>misinterpretation 105:24</p> <p>missing 199:15</p> <p>mission 90:11 145:20</p> <p>misunderstanding 238:11</p> <p>misunderstanding s 238:20</p> <p>misunderstood 316:4</p> <p>Mitch 163:17</p> <p>mix 55:17</p> <p>MMO 228:4</p> <p>mobile 214:17</p> <p>mod 327:14</p> <p>mode 191:12,25 192:11,18 193:4,8,10 196:24 223:6,11,13 224:1,3,6 225:12,13 234:15 240:7,15</p> <p>model 48:23 95:10 113:23</p> <p>modeling 242:1,6</p> <p>models 8:23 78:1 132:19 182:23 207:19 283:21</p> <p>modern 93:21 202:18 240:2 250:5 279:12</p> <p>modes 198:8</p> <p>modification 199:25 204:15 231:9 268:22 293:15 294:12 299:1,4,5</p>
---	--	--	---

<p>319:15,20 320:7</p> <p>modifications</p> <p>289:3 292:15</p> <p>294:15,19,25</p> <p>295:2,14 298:14</p> <p>299:9,11</p> <p>301:6,10,18</p> <p>311:5 321:12,18</p> <p>327:10 328:4</p> <p>modified 265:25</p> <p>268:24,25</p> <p>293:9,12 321:21</p> <p>modify 125:20</p> <p>135:14 268:19</p> <p>289:22 294:6</p> <p>299:13 301:4</p> <p>310:3 319:16,21</p> <p>modifying 231:4,5</p> <p>244:12</p> <p>294:7,8,10</p> <p>mods 295:12</p> <p>300:19,20 311:8</p> <p>312:1,12,13,16,2</p> <p>2 327:6</p> <p>molded 168:5</p> <p>MoMA 168:15</p> <p>241:7 245:14</p> <p>249:3</p> <p>MoMA's 166:8</p> <p>moment 5:2 25:14</p> <p>37:13 278:20</p> <p>284:21 288:6</p> <p>292:20</p> <p>monetize 8:22</p> <p>monetizing 77:16</p> <p>money 37:6</p> <p>172:17 175:16</p> <p>231:13 236:17</p> <p>259:21 283:15</p> <p>319:1,2,3,4</p> <p>Monica 169:2</p> <p>monitor 80:6</p> <p>82:14 127:19</p> <p>month 33:21</p>	<p>96:23 210:24</p> <p>months 78:13</p> <p>112:9,21 113:13</p> <p>277:25 278:5,16</p> <p>morals 247:23</p> <p>Morgan 268:16</p> <p>269:8</p> <p>morning 4:4 8:17</p> <p>9:15 15:12,16</p> <p>16:15 48:8 76:16</p> <p>88:22 90:22</p> <p>Morrisette 3:9</p> <p>8:10,11 9:11,15</p> <p>10:16 11:1,5</p> <p>13:6,9,20,22</p> <p>14:12 18:18 48:6</p> <p>50:20 60:10</p> <p>97:24 98:18,20</p> <p>99:10,16 100:13</p> <p>101:4,15 107:9</p> <p>114:3,5</p> <p>mostly 121:11</p> <p>229:24 280:7</p> <p>mother 137:24</p> <p>138:4</p> <p>motion 3:18 25:6</p> <p>53:18 60:19 61:3</p> <p>62:5 63:15 64:19</p> <p>65:11,18 68:24</p> <p>71:16,20 76:21</p> <p>103:6,21 119:17</p> <p>148:6 152:1</p> <p>206:24</p> <p>motivate 166:20</p> <p>mountain 248:3</p> <p>MOV 16:24 17:3</p> <p>19:15 20:22</p> <p>move 41:25</p> <p>44:7,11 60:7</p> <p>69:8 72:1 83:16</p> <p>87:14 125:12</p> <p>126:25 162:14</p> <p>210:15 219:18</p> <p>263:23 301:22</p> <p>movie 65:13</p>	<p>78:12,16</p> <p>80:7,17,18,21,24</p> <p>84:19,20 85:1</p> <p>86:1 95:19 96:6</p> <p>107:12 158:10</p> <p>210:12,14</p> <p>movies 23:10 78:8</p> <p>82:5 85:1,2,13</p> <p>86:21</p> <p>148:15,20,25</p> <p>149:1 158:18</p> <p>160:1 206:20</p> <p>210:9 251:22</p> <p>261:12,16</p> <p>314:6,9 321:2</p> <p>moving 90:17</p> <p>168:11 226:2</p> <p>242:21</p> <p>MP4 18:5 19:8</p> <p>MPAA 8:19 60:13</p> <p>80:6 82:15</p> <p>116:19 145:24</p> <p>163:23 206:6</p> <p>272:8</p> <p>MPEG 17:5</p> <p>MPEG-4 16:20,23</p> <p>17:3 18:1</p> <p>Muhammad 36:21</p> <p>multimedia 63:19</p> <p>161:20</p> <p>Multinational</p> <p>297:4</p> <p>multiplayer</p> <p>161:12 167:9</p> <p>170:17,20</p> <p>171:20</p> <p>178:1,12,13,16,2</p> <p>4 183:14</p> <p>184:8,14,15</p> <p>185:22</p> <p>186:10,23</p> <p>187:11 188:15</p> <p>190:11 191:6</p> <p>196:24</p> <p>199:10,17 200:2</p> <p>203:24 217:22</p>	<p>218:4 222:12</p> <p>224:3 225:12,13</p> <p>227:2,15,22</p> <p>228:5,20 229:12</p> <p>230:9,12</p> <p>232:10,11 233:2</p> <p>234:6,16</p> <p>240:6,8,15</p> <p>250:8,9,24</p> <p>251:23 252:24</p> <p>253:4 290:10</p> <p>291:7</p> <p>multiplayer-only</p> <p>230:16</p> <p>multiplayers</p> <p>262:20</p> <p>multiplayerservers 171:22</p> <p>multiple 69:15</p> <p>83:10 87:15</p> <p>150:16 155:8</p> <p>225:13 266:4,23</p> <p>multiplication</p> <p>246:19</p> <p>multi-purpose</p> <p>146:6</p> <p>multiuser 207:20</p> <p>murkier 61:12</p> <p>62:7 67:15</p> <p>murky 69:5 70:3</p> <p>muscles 25:21</p> <p>museum 76:23</p> <p>78:9 163:5</p> <p>166:25</p> <p>168:17,19,20</p> <p>169:7,11 170:7</p> <p>187:6,14 188:6</p> <p>190:14 197:20</p> <p>198:4,13 212:23</p> <p>235:20 243:24</p> <p>245:19 249:2</p> <p>250:13,15,20</p> <p>251:13,17,18</p> <p>252:1,13 253:24</p> <p>museums 166:1</p> <p>197:6 241:7,11</p>
---	---	---	--

249:6,25 museum-style 246:9 music 68:11 206:20,23,25 208:1,5 292:19 314:6 musical 31:15 292:25 myself 123:12 183:9 239:17 324:15 Mystic 230:14 <hr/> <div>N</div> <hr/> naive 319:6 narrative 7:18 27:1,3,8,17 28:16 29:12,14 30:4,13 31:5,14 32:12 33:4,6,10,12,19 35:14,15 36:3 39:23 42:8 45:1 50:1 54:1,7 56:2 62:22 63:1 79:7,17 105:7 107:4 narrow 58:22 257:23 258:9 317:15 324:18 narrowed 257:13 national 2:14 26:21 nature 34:13 165:20 166:15 182:25 208:21 214:2 234:19 Nazi 34:3 NBA 193:7 223:12 NBC 105:3 NCIA 4:22 nearly 84:21 108:7 299:6	nebulous 219:24 necessarily 19:2 27:19 70:1 110:2 119:25 121:4,7,17,20 134:4 135:4 140:2 145:9 147:5 188:4 202:14,19 229:9 246:5 261:10,20 285:3 necessary 70:14,15,17 71:22 106:23 152:15 179:10 255:9,10 necessity 65:20 nefarious 314:8 negative 136:12 141:2 negatively 171:25 negotiate 81:18 negotiation 37:7 Neill 3:11 8:15 48:7,8 49:12,16 51:22 52:20 54:10,19 55:7 56:20 57:7 58:10 59:18 neither 250:14 263:18 329:10 Nemmer 5:3 net 318:23,24 Netflix 85:21 121:12,23 122:8 124:1,22 125:2 146:19 147:21,25 149:7 150:2 network 126:24 135:15,16 144:9 166:21 195:24 196:1 200:16,17 248:11 250:12 267:17	networks 14:11,13 118:19 newer 157:4 232:22 315:1 news 23:5 47:8,9,15 104:24 nice 58:15,21 89:25 188:21 325:4 Nick 268:16 Nielsen 137:21 night 76:22 78:9 88:25 Nightmare 264:1 Nintendo 172:1 178:19 196:22 239:2,5,6 253:11,13 261:8 289:20 309:8 317:6 326:6 nobody 145:6 160:4 277:2 nominal 52:25 304:12 310:24 non-authorized 297:25 noncommercial 64:7 non-commercial 63:22 nondescript 185:6 non-documentary 49:2 50:3 53:25 56:15,17 57:18,23,25 58:19 65:25 66:2 79:2 non-duplicates 15:7 none 136:22 243:13 nonfiction 63:6,19 nonfictional 55:17	56:14 64:19 non-infringing 57:16 117:10 208:21 257:8 260:12 265:20,21 non-jailbroken 123:20 142:24 nonprofit 48:14 116:12 non-scripted 64:24 nor 263:18 329:11 norm 205:8 normal 174:14 normally 96:4 243:21 290:12 318:3 North 280:18 NOTARY 329:1 note 68:17 72:16 93:1 212:4 254:2 262:4 noted 153:1,10 166:23 notes 35:3 187:23 nothing 106:10 182:6 198:9 230:17 254:15 313:12 notice 11:12 126:2 154:10 155:5 195:20 196:9 234:3 noticed 195:18 notion 68:2 238:4 245:6 252:18 253:23 266:7,17 notoriously 41:14 novels 165:19 NTSC 91:18 nul 267:25
--	---	--	--

(866) 448 - DEPO www.CapitalReportingCompany.com © 2015

opinions 267:11 opponents 11:25 50:9 118:3,5 136:13,23 206:3 256:1 opponent's 58:17 OPPONENTS 3:15 opportunities 294:17 opportunity 5:11 115:21 116:23 182:17 183:8,20 188:5 189:4 324:3 oppose 60:14 70:16,18 74:7 88:16 146:2 opposed 40:4 43:14 44:6 60:17,21 61:25 71:16 78:14 184:15 212:15 241:5 242:12 248:14,21 opposing 71:14 72:11 opposite 248:10 253:10 opposition 9:2 12:10 30:1 optical 281:3,5,6,10,13 282:18,22,23 285:6,8,9,10 305:20,22 306:10,12,13,15, 16 307:4,9,20,23 308:3,5,9,11,12, 15,22 309:21,23 310:1,6 319:22 326:18 opticals 281:14 optics 136:1 optimal 265:14	option 83:21 100:14 133:3 275:18 options 87:15 100:14 172:5 284:13 286:6 Oracle 208:23 orange 11:10 order 6:21 13:17 42:24 45:17 62:13 63:9 68:24 91:10 94:6 100:22 101:14 131:15 134:1 135:17 138:15 144:10 147:5 151:15 156:4 159:10 173:23 175:19 176:23 178:15 179:25 180:13 201:15,25 211:16,21 220:18 232:4 260:3 280:11 281:2 282:8 292:16 301:6 320:9 321:17 327:6 ordered 312:22 organization 33:23 47:8 79:13 organizations 7:11,24 12:22 organize 189:1 original 15:22 18:18 19:5,7,9 20:11,21 30:20 66:16,25 67:1,4,17 78:15 94:6 198:2 200:20 209:1,2 210:1 232:7 236:6 253:2,15 254:22 259:13 261:10,13,25 262:5 290:13,19	291:4 292:4,22 293:2,3,16 299:16,19 301:19 320:14,15,17 originally 230:10 231:15 239:1 253:20 262:16 321:16 orphaned 254:5 259:19 260:9 263:8,12,18 266:7 orphans 264:12 others 127:13 172:22 181:9 191:6 197:21 225:10 266:6 310:25 otherwise 131:19 282:14 307:9 325:9 ought 193:17 217:23 ourselves 4:13 outcome 302:13 outcomes 141:1,2 144:22 outcry 142:1 194:21 outline 213:9 output 18:1,4 19:10 114:8 outputs 10:20 209:8,10 outputting 22:9 outset 58:3 155:12 181:25 outside 45:12 52:4 125:8 175:23 216:19 235:20 239:7 247:16 251:16 309:22	outward 23:6 overall 145:20 229:21 231:22 overcoming 53:1 overhead 283:24 284:1 overlap 228:22 overly 291:22 317:10 overnight 183:6 owned 172:8 249:14 owner 137:16 264:7 326:8 owners 94:15 125:25 126:2 154:13 263:13 264:13 owner's 134:5 ownership 182:10,14 owns 23:14 246:21 Oxford 64:18 <hr/> <p style="text-align: center;">P</p> <hr/> p.m 1:18 160:20 270:3 271:3 328:17 pace 146:8 pack 14:18 packagers 82:24 packet 209:7 packets 100:15 200:16 packs 10:1 Pacman 239:4 page 76:9,11 paid 110:24 178:15 189:22 222:11 231:10 panel 2:3 4:14
---	--	--	---

77:9 83:8 115:14 162:10 196:18 206:15 210:7 225:10 239:18 264:20 267:10 291:23 327:18 panels 70:7,9 266:13 314:2 panel's 180:4 paper 161:16 papers 27:12 98:11 246:8 pappers 288:1 311:2 parallel 40:15 43:13 Pardon 99:7 parents 328:5 Parham 163:20 Paris 31:12 parody 31:21 45:15,16,18,21 68:12 participants 326:23 participate 26:3 258:18 participation 328:15 particular 12:16 29:7 33:15 38:7 49:7 55:15 80:21 88:16 93:2 97:12 107:22 108:2,22 120:9 128:13,22 133:18 134:10 138:13 141:11 142:17 148:8 157:1 159:11 160:12 171:19 172:23 187:24 188:11 202:2 203:5 208:13 231:11 245:7 246:6 254:18	256:20,22 265:23 276:22 277:23 295:10 301:7 particularly 5:3 20:5 33:17 38:10 40:2,3,12 49:18,21 68:16 81:23 89:1 98:4 136:11 137:13 253:23 288:7 parties 14:9 266:24 329:12 partly 47:13 325:22 partner 7:14 partners 118:19,25 party 171:20 226:7 268:7 pass 10:22 52:15 53:16 283:25 passed 136:7 passes 100:8 passing 288:2 passion 183:5 passionate 220:24 240:20 258:24 past 21:5 28:3,10 43:3 63:13 80:16 105:23 117:8 146:13 197:5 214:8 237:5 311:15 323:6 Pat 28:3 patched 143:10 patches 172:4 patient 60:8 246:23 patiently 206:3 Paul 180:17 paused 220:7	pay 41:16 53:2 74:1,2,11 81:20 83:9 86:19 175:15 179:1 313:21 paying 41:21 110:9 178:12 222:6 payment 222:1 PBS 51:4 PC 17:6 125:5 140:15 146:22 147:1 159:7,14 178:20 205:13,15,18 301:17 312:1,17,23,25 327:6,7 PC's 214:16 312:10,22 peak 229:17 peek 181:17 Pena 32:5 people 5:23 23:15 26:7 27:19,20 29:22 30:10 32:16,17,19,25 35:12 38:8 41:1 45:20 46:9 54:15 57:14,15 59:15 61:14,22 73:14 76:5 79:10 83:22 89:22 92:16 94:17 95:5,7 101:7,24 104:19 110:2 112:23 115:9 126:10,13,17 127:4,25 135:14 136:19 139:9 140:6,10,15,18,2 1 141:10,12,13 142:2,4,5,10 143:11 145:13 147:3,10 148:20 150:10 151:7 155:3,6 156:10	159:22 160:25 161:1,16 162:10 165:7,20 167:13,17 175:10,12 176:1 177:10,13 179:19,24 181:20,21 186:5 187:9 188:8 191:9 196:18 198:14 199:7 200:3 207:8 208:7 210:8 217:9 222:3,25 224:21 226:25 227:3,6 228:19 229:16 231:21 232:22 233:6 240:24 241:5,8 242:17 243:2,16 244:2,19 245:11,13 247:22 248:5,17,18,23 250:9 251:3,13 252:6 256:10,19,21,23, 24 257:23 262:10,14 264:17 265:11,15,23 267:4 269:25 273:6,18,20 274:6 275:21 276:10 277:23 278:10 281:11,19 282:25 285:14 286:9 287:15 288:19,24,25 289:2 290:6,15,17 291:3 293:22 294:15,18,25 295:14,20 296:3,5 298:15 300:19,20,22 301:15 308:12 311:18 312:10,12
--	---	---	--

<p>316:12 318:24 319:1 320:20,22 327:8 328:3 people's 13:1 193:10 325:16 per 18:15,17 19:3,24 97:4 101:8 percent 44:20 56:24 111:25 277:24 278:4 280:5 284:16,19 315:5,11,20 perception 23:8 112:22 178:7 Perez 3:7 7:13 26:13,14 27:15 29:11 31:1,3 34:10,14 36:7,14 37:17,21,24 38:3,20 39:17 40:6 43:22 45:22 48:13 111:3,10 perfect 22:10 64:14 88:12 228:22 263:2 perfectly 63:9 64:9 325:1 perform 136:17 142:9 194:2 performance 219:8 243:23 244:1 performed 200:13 perhapps 316:24 325:4 perhaps 43:5 138:2 140:9 164:14 period 131:7,23 258:17 264:3 275:9 310:24 315:6,12 periodic 279:10 periodically</p>	<p>224:10 permanent 166:11 194:16 278:12 316:1 permanently 165:2 permission 120:16 136:17 141:5 180:4 235:19 254:8 259:18 266:23 267:4,6 292:4 322:5,14,16 permissions 120:15 266:21 permit 125:22 302:25 permits 59:7 permitted 94:18 106:22 236:23 permutations 155:7 281:9,19,25 282:1 persist 59:10 persistent 216:9 218:9 219:19 222:3 257:25 person 38:8 55:3 100:2 124:25 125:8 133:4 139:21 167:23 189:22 193:16 243:8 246:20,21 251:1 283:25 315:21 personal 21:21 39:7 170:16 183:18 190:5 246:18 254:11 304:4 personally 182:15 196:16 242:1 persons 35:20 143:16</p>	<p>perspective 184:21 283:19 288:24 307:17 pervasive 87:22 perverted 183:2 petition 117:1 118:20 136:17 170:24 171:1,4 173:2 286:14 philosophical 140:9 phone 101:7 143:1 297:22,23,24 298:1 301:2,4 phones 127:24 143:18 214:17 298:6 300:20 301:10 photographs 230:21 photos 284:10 phrase 96:10 274:15 phrased 214:7 phrasing 287:23 physical 8:23 84:25 87:19 137:11 241:1 276:19 277:15 306:20,22 physically 73:21 pick 83:23 picked 323:16 picking 243:16 picture 3:18 62:5 63:15 64:19 65:18 99:21 103:6 148:6 152:1 156:22 pictures 25:6 53:18 60:20 61:3 63:16 65:11 68:24 71:17,20</p>	<p>76:21,22 103:21 119:18 206:24 piece 53:11 125:1,4 150:22 179:15 193:25 195:7 243:23 272:22 292:19 pieces 33:6 150:19 219:17 pilot 84:6 piloting 186:7 pin 239:20 pinging 219:16 224:9 piracy 23:23 80:4,5,13,22 81:8,11 82:11,14 106:2,3,5 111:18,21 112:10 124:15 146:15 147:6,10,11,12 149:21 175:12 208:13 210:5 212:7 255:16 289:11 302:15 303:16,23 314:5 pirate 81:3 151:8 160:1 320:21 pirated 111:20 112:23 202:22 255:21 303:17 314:9 319:8 321:2 pirates 82:5 112:13,19 146:20 321:1 pirate's 80:13 pixels 11:16,17 17:15 99:4 placard 6:19 162:7 placed 34:6 places 149:1 174:6</p>
--	--	---	--

plate 98:17	249:20,21 250:1	245:13,20,21,23	56:22 68:24
platform 146:7	playback 17:21	247:10 250:23	94:17 95:13 99:1
147:4 191:5	18:18 254:14	251:8,10 262:11	101:24 104:9
292:15	played 19:15	268:7 287:9	105:10,15
295:11,14	21:23 96:19	292:23 293:25	107:17 121:4
platforms 121:11	100:16 117:17	321:4 328:2	122:7 129:2,5,7
122:16 147:13	121:9 158:19	plays 19:15 100:17	130:25 144:16
214:16	165:14	158:25 233:9	148:10 149:10
play 12:2 16:22	174:12,19	PlayStation 166:4	151:6 154:7
20:17 73:17	192:18 218:14	205:8 230:16	155:19 158:2
85:22 100:22	245:19 287:3	250:12 272:5	162:19 167:5
158:11 167:9,25	289:17 311:13	273:23 274:9	176:9 191:1
168:6 172:7	player 10:7,19	275:3 276:4	192:3 196:4
173:6 174:6	11:4 97:7,16	277:1 278:2,23	197:25 202:6
175:12,16,25	167:22 174:13	279:8,13,20	204:4 220:23
177:25 178:16	184:25 185:24	281:24 282:16	221:3,7,22
179:1 184:14	186:11 218:3	285:17 296:1,4	223:24 225:4
187:11 189:3	250:25 254:16	312:15 314:24	231:22 234:8
191:6,11 192:14	262:12	315:8,19 317:5	236:25 243:19
195:10,24	263:20,21	318:14	244:23
196:2,11	292:23	321:4,13,22	246:14,16
198:7,14,16	player-game	323:11	249:23 252:5
199:10,16,17	167:15	PlayStations	256:13 258:15
200:25 212:23	players 71:13	280:23 287:3	268:19 272:18
215:4 217:23	114:7 165:17	please 18:7 246:24	275:15,17
220:12 221:2	166:1,14,18,20	310:11	278:17,18
222:20 223:5,13	177:21 181:7	plenty 27:24 32:8	281:17
224:5,11	182:6,16 183:7	35:17 38:25	292:7,10,24
225:8,11,25	185:10	132:2 303:19	304:9 315:15
227:1,3,6,11	188:17,18,20	plot 175:5	316:25 317:12
229:18 230:24	192:13 221:12	pluck 168:19	320:3 325:22
231:21 232:6,18	225:11 228:2	plug 114:9 147:5	pointed 24:7,15
233:6,10	230:18 240:20	180:25	121:1 128:18
234:12,15 240:8	247:20 248:10	plugged 289:20,21	157:18 208:22
242:13 243:20	250:20 254:22	plus 209:17 280:5	237:24
250:20 252:7	321:6	pocket 41:16	pointing 26:7
253:16 255:20	player's 216:21	poetics 164:18	157:15 202:11
262:2,8,9,10,15,	playing 12:6 17:24	poetry 165:19	points 26:25 49:6
17 274:17	20:21,23 32:5	point 19:6 24:22	50:11 78:1 88:21
276:15 287:17	109:6,17 170:17	25:23 27:15	90:18 101:13
292:18 293:23	174:24 177:13	28:4,9,12 30:24	114:24 123:21
294:16 308:8,13	182:7 191:13	33:9,15 35:5	128:12,21,24
311:12 319:8	192:14 198:2	36:11,14 38:24	139:14 152:13
325:3,6,18 327:9	201:1 212:15	42:20,21,24	161:23 202:19
playability 228:24	224:1 229:16	46:2,24 55:24	213:5,9,11,16,17
245:11	232:11,24 233:1		218:25 220:17
playable 171:14	241:6,8,18		237:9 245:4
222:22 232:2			252:23 253:22

<p>262:25 303:4</p> <p>poke 64:14</p> <p>poker 191:13</p> <p>policy 167:18</p> <p>political 49:5</p> <p>politics 172:19</p> <p>polluter 284:7</p> <p>pondering 63:4</p> <p>Pong 241:8 245:16</p> <p>poor 10:12 32:7 41:1</p> <p>Popcorn 146:17 147:19 148:13 151:3,13,23 152:16,20,25 155:23 156:4,7 157:13,21 158:9,23 159:6,13 160:1 210:6,20</p> <p>popular 25:6 108:17,19</p> <p>population 164:22 262:10,12</p> <p>portable 82:23 327:8</p> <p>portion 62:4 107:1 108:3,6 151:21</p> <p>portions 60:19 61:5 106:18 107:2 110:18,23</p> <p>PortlandiaVLC43 V2.MP4 18:10</p> <p>portrait 32:19</p> <p>portraying 33:2</p> <p>ports 135:15</p> <p>posed 42:7 131:20</p> <p>position 28:22 39:21 70:23,25 71:9 89:15 94:22 206:12 257:17,18</p>	<p>267:18</p> <p>positive 140:24 141:1</p> <p>possess 182:11</p> <p>possessed 243:5</p> <p>possibilities 165:4</p> <p>possibility 182:14 188:20 197:16</p> <p>possible 22:3 28:5 42:6 67:9 91:21 120:15 121:21 123:15,18,22,23 133:19 134:10 136:22 140:10 142:18 143:2 147:13 148:16,17,19 149:15 155:20 156:3 157:13 159:2 175:25 181:16 189:6 209:19 249:25 273:19 280:21 285:1 317:16</p> <p>possibly 41:10 45:18 109:9 142:6</p> <p>post 226:5</p> <p>posted 274:4 277:12</p> <p>posterity 189:24</p> <p>potential 4:10 29:3 33:13 81:8 119:23 176:7 210:18 211:9 248:19 309:18</p> <p>potentially 140:17 176:23 249:3 317:16</p> <p>pounds 279:6 284:18</p> <p>power 33:24 124:10 152:15 274:20 325:9 326:2,7</p>	<p>powered 124:9</p> <p>powerful 126:7</p> <p>PPS 94:3</p> <p>PR 142:15</p> <p>practice 69:12 216:14 233:16</p> <p>practices 44:24 105:4 227:1 242:6</p> <p>precious 280:15</p> <p>precisely 193:21 194:24</p> <p>precluded 140:25 297:14 310:18</p> <p>predecessor 166:18</p> <p>predecessors 183:11</p> <p>pre-digital 137:18</p> <p>preexisting 62:17</p> <p>preference 304:4</p> <p>preferrable 67:13</p> <p>premiere 33:20</p> <p>premised 237:17</p> <p>premium 75:16 86:17,18</p> <p>preorder 175:21</p> <p>prepare 15:22</p> <p>prepared 15:17 150:5</p> <p>preparing 89:1</p> <p>present 252:2</p> <p>presentation 7:6 9:12 15:10,16 16:25 161:18,21</p> <p>presentations 5:22 6:7 22:14</p> <p>presented 91:5 92:6,7</p> <p>preservation 170:22 181:14</p>	<p>189:24 190:4,19 194:25 197:18,24 198:1,11,20,25 199:1 205:3,9 212:13,21 226:19 231:20 234:10,11,20,24 235:3,14 240:22 242:3,8,12,19,25 243:1,14,20,22 244:6 245:6,11,22 246:10,18 247:2,3,4,5 252:9,18 254:5,7,11,12 255:2 258:11 265:6</p> <p>preservational 232:1,17</p> <p>preservationist 180:21 187:8 231:1 241:17</p> <p>preservationists 183:24 186:21 241:5,13</p> <p>preserve 181:12 188:15 190:8,10 198:1 218:19 232:17 235:7 244:3 249:25 256:6 266:1</p> <p>preserved 190:23 218:22 235:11,17 243:24,25 249:18 250:3</p> <p>preserving 197:8 198:15 230:9 232:2,15 233:1,10 241:1 242:20 248:14</p> <p>President 167:15,20</p> <p>President's 168:1</p>
---	---	---	--

presiding 4:8	194:4 220:1	procedures	143:7
press 85:11 142:16	228:24	167:25	product 17:4 67:6
146:19 147:25	priority 235:2	proceed 271:15,17	75:16,19 80:19
238:16	pristine 299:17	proceeding 62:9	89:13 97:10
prestigious 168:23	privacy 117:19	69:19 91:6 98:14	131:3 144:6
pretended 296:10	118:16 129:3	115:10,17	153:7
pretending 301:1	138:25 151:19	160:19,24	209:1,2,4,5,25
pretty 26:19 29:13	153:10,13	238:18 245:3	284:18,24
57:25 72:8 73:18	privilege 180:23	257:7 270:2	294:11 304:19
76:4 79:8,24	privileges	305:18 316:15	production 31:13
148:24 191:17	120:22,24	328:16	68:22 247:18
192:15 198:9	PRN 154:21	proceedings 6:12	Productions 31:18
254:9 317:21	probably 5:17	82:20 193:14	products 22:7
prevalence 170:20	28:12,14 35:19	220:1 271:10,12	71:5 75:24 92:23
prevent 129:10	37:17 39:13	329:5,7	165:4,7 181:18
147:12,16	43:10,11 45:8,19	process 14:25	182:21 206:22
prevented 131:11	48:15 52:15 60:8	16:23 18:25	207:13,21
preventing 149:20	61:21 64:24	35:12 39:18	273:18 279:3
prevents 129:3	69:22 75:20	41:11 57:3 98:8	280:10,12,16,20
previous 75:18	79:23 108:3	150:13	283:5 285:3
178:18 319:23	115:18 123:1	151:18,21 153:3	287:13 307:17
320:1	130:22	155:19 156:8	316:6,18
previously 16:11	134:18,21	157:16	professional
17:9 77:13 127:5	135:11,18	159:12,16 160:3	104:18 163:7
price 83:9 84:5	150:14,16 156:3	174:21	191:8 195:25
112:6 283:23,24	201:22 204:21	200:10,14 203:3	197:14 240:21
284:6	244:23	204:6 255:9	245:24 254:12
primarily 7:16	problem 23:23	276:2,17,25	256:5
8:22 26:17 40:8	24:1,13 96:24	processed 16:22	professionally-
58:20 64:21	102:18 106:4	19:10,13	produced 207:9
121:2 129:9	138:21 172:10	processes 322:10	professionals
132:11,17	187:15 196:6	processing 51:17	102:1 258:4
217:4,6	203:20 215:17	101:19 124:10	professors 5:3
primary 37:20	224:24 244:4	142:7 152:15	187:20
77:15 80:2	259:19 260:9	279:19	profile 118:16
121:2,7 149:19	268:23 275:2	processor	profit 78:14,16,19
191:7,8,9 210:3	276:3 277:20	276:4,20	program 10:13
288:9,20	282:22 304:21	produce 46:20	72:20 84:6 102:9
principal 68:3	310:11	76:20 130:3	135:17 310:5
principle 108:16	315:1,22,23	135:4	programming
principles 61:14	325:2 326:11	produced 36:9	137:8
print 195:14,15	problematic	119:1 144:5	programs 8:13
prior 6:11 118:1	234:18	315:12	9:22 13:18 127:1
	problems 13:21,23	producers 7:16,17	285:13,18
	15:4 76:5 315:1	26:18 208:5	286:11 311:17
	323:5	producing 11:8	

<p>progress 90:16 193:10</p> <p>prohibition 126:14</p> <p>prohibitive 259:21</p> <p>project 31:14 35:22 45:22 109:14 110:1,11 116:14,17 163:16 172:9,25 271:23 323:13</p> <p>projecting 323:8</p> <p>projects 31:9 33:13 172:21 194:25 195:1</p> <p>proliferated 118:13</p> <p>proliferation 82:23 212:8</p> <p>promise 195:9</p> <p>promoted 68:19</p> <p>pronounce 90:25</p> <p>pronounced 38:2</p> <p>propaganda 34:3</p> <p>properly 113:24 153:14</p> <p>properties 18:6,12</p> <p>property 3:5 7:20 8:1,8 107:18 259:16</p> <p>proponent 267:16</p> <p>proponents 20:7,25 79:6 91:6 93:1 152:13 154:2 207:4 208:15 211:20 213:21 214:4,10 215:14 216:11 219:3,6 225:19 237:4 240:4 243:19 252:19 263:11 265:2 267:24 269:11</p>	<p>288:20</p> <p>proponent's 62:23</p> <p>PROPOSERS 3:3</p> <p>proposal 62:23 79:6 90:6 153:23 154:11 155:11 163:8,12 198:21,25 214:13 228:4 256:2 288:3 302:10</p> <p>proposals 77:13 155:8</p> <p>propose 216:8</p> <p>proposed 1:9 5:1 8:17 9:8 19:25 49:16 50:9 58:11 59:6 60:18 115:24 136:3 154:1 155:18 161:2,7 179:12,15 211:17 213:20 216:9,12 217:3,13 219:24 227:21 228:14 237:7 266:6 271:5 272:19 303:14 317:7</p> <p>proposing 58:5 215:15</p> <p>proprietary 117:16</p> <p>prosed 12:1</p> <p>protect 58:6 81:22 113:2 119:16,17 120:6 149:7 207:17</p> <p>protected 78:4 114:9 120:1 196:8 318:17</p> <p>protecting 151:19 152:5 153:21 255:24</p>	<p>protection 60:3 75:19 81:15,21 87:1 93:6 150:8,25 151:1,22 308:10,14,17,19</p> <p>protections 218:5 302:15 308:6</p> <p>protects 122:22</p> <p>protocol 173:6 204:12</p> <p>prove 23:24 181:8</p> <p>proven 75:17</p> <p>provide 34:3 35:6 43:20 59:23 60:2 77:5 83:16 85:8 102:24 121:13 122:8,12 126:2 134:16 158:1 175:3 198:2 219:7 235:8 260:22 261:2 290:2 292:16 294:17 295:13,19 299:7,22 300:11,21 302:22 303:5 304:9,10 310:21 320:23 326:16</p> <p>provided 118:18 123:24 133:21 134:17 174:20 194:20 256:5 293:21</p> <p>provider 48:14 87:17 93:5 149:19 150:20 152:9</p> <p>providers 81:20 86:6 87:16 96:18 121:12,13 122:8,17</p> <p>provides 85:16 198:16 205:17 222:10 256:16</p>	<p>providing 83:13,14 122:17 131:10 275:19 307:19</p> <p>provision 36:4</p> <p>provisions 4:11</p> <p>PS2 173:18,23</p> <p>PS3 173:19 215:5 306:7,9</p> <p>PS4 178:14 317:4</p> <p>public 46:7 60:4 143:18 198:16 212:23 216:24 238:17 242:4 243:10,24 245:3 290:24 297:13,19 329:1</p> <p>publicity 39:9</p> <p>publicly 173:14 253:1</p> <p>public's 238:11</p> <p>publish 311:18</p> <p>published 117:25 166:3</p> <p>publisher 169:2,25 174:10 175:19 176:3 178:3 205:22 207:25 230:6 263:11</p> <p>publishers 171:21 172:3 206:18 208:6 231:14 236:6 238:7,24 239:10</p> <p>pull 99:14 109:3</p> <p>pulled 181:1</p> <p>punk 297:6</p> <p>purchase 194:13 223:1 304:11</p> <p>purchased 156:24 194:9</p> <p>pure 28:13 266:22</p>
---	--	---	--

<p>purely 283:2</p> <p>purple 11:11</p> <p>purpose 20:15 121:3,8 124:8 125:9 141:25 147:9 148:9 154:16 157:20 158:4 161:11 215:8 218:14 228:23 238:12</p> <p>purposes 15:23 20:12 27:1 29:15,17 30:19 35:8 49:23 64:21 124:15 140:11,24 215:20 228:10 232:17 243:8 257:7 263:8 303:22</p> <p>purveyors 23:5 95:13</p> <p>pushing 246:13</p> <p>puts 150:2 158:24</p> <p>putting 23:16 65:9 86:20 103:24 148:5,14 207:7 243:10 292:21 306:17 320:19</p> <hr/> <p style="text-align: center;">Q</p> <hr/> <p>qualify 29:24 36:23,24 61:10 110:17 217:1</p> <p>quality 8:13 9:21 10:2,12,21 11:18 12:21 15:2 20:15 25:10 50:21 51:9 52:14 74:12 99:22 100:1 101:2,6 112:14,22 151:18</p> <p>quantify 111:17 314:13</p> <p>quarter 258:13</p>	<p>quarters 174:15,16</p> <p>question 21:10 37:12,22 38:3 39:11 42:7 49:7 54:20 63:8 74:16 80:8 89:18 91:19 93:19,24 98:14 106:23 108:16 111:3 123:2 126:8 140:8 141:8,19,21 155:24 166:13 168:13 170:23 177:23 184:7 187:5 194:3 196:14 198:10 199:4 201:10 204:20 205:25 209:20 210:2 220:6 221:8 222:25 224:16 230:8 231:3 233:15 240:11 241:3 252:8 257:12 264:24 265:19 267:13,14 268:2 287:22 291:5 293:17 305:24 307:14,23 309:15 314:12 316:3,18,24 319:6</p> <p>questioning 310:15</p> <p>questions 4:24 42:2 47:18,23 48:4 66:13 70:21 78:24 88:6 97:22 98:21 109:19,21 110:15 115:22 153:25 162:12 181:24 208:20 211:24 213:14 235:25 271:17 326:21</p> <p>quick 10:9 91:1,4</p>	<p>107:17 231:19</p> <p>quickly 7:3 11:24 72:3 101:12,23 107:17 110:16 152:12 162:8,15 264:21 266:7</p> <p>QuickTime 19:16</p> <p>Quinn 3:9 7:7 22:17,23 24:21 26:12 30:6 36:17 49:4 50:20 104:1,8 105:21 109:14 110:13</p> <p>quite 5:15 15:1 30:1 63:12 64:4 75:20 82:1 92:4,14 191:15 194:21 214:8,9 216:23 222:2 248:1 265:14 317:8</p> <p>quo 258:6</p> <p>quote 27:8 30:19 31:11 50:16 56:9 220:3 238:5</p> <hr/> <p style="text-align: center;">R</p> <hr/> <p>R4 174:18</p> <p>rabbit 137:20</p> <p>racing 274:12</p> <p>racking 232:19</p> <p>Rahul 3:4 8:6</p> <p>raise 208:19 304:9 311:10</p> <p>raised 67:20 74:15 132:16 140:12 162:23 179:9 197:21 210:8 213:12,14,16 220:9 225:18 233:19 257:3,4 259:3 263:9</p> <p>raises 212:24 266:9</p> <p>raising 67:15</p>	<p>311:4</p> <p>Ralph 175:5</p> <p>RAM 299:18</p> <p>ran 171:20 269:24</p> <p>random 100:15 158:8</p> <p>range 97:11 206:17 242:23 275:6</p> <p>Ranger 205:16 231:5,10 236:3,11</p> <p>ranging 9:23</p> <p>rapid 146:8</p> <p>rapidly 82:19</p> <p>rare 261:23 280:3,5,6,9,17</p> <p>rate 16:6 19:23 100:20,21 101:4,9 279:2</p> <p>rates 316:5</p> <p>rather 56:21 81:9 92:18 112:24,25 146:5 154:23 155:2,11 171:9 174:7 245:4 247:14,16,18 256:18 265:24 274:15 276:9 283:17 307:14 318:14 319:2</p> <p>ratio 11:13 318:4</p> <p>ratios 318:7</p> <p>raw 85:7 279:6,21 280:17</p> <p>reach 137:9</p> <p>reached 78:16</p> <p>reaches 171:3</p> <p>react 219:11</p> <p>reaction 46:3 186:21 187:12</p> <p>reactivated 172:4</p>
---	--	---	---

reader 318:11	192:4 196:5	131:15	256:3,8,16,18
readily 127:23	197:6 198:3	recent 26:20 50:15	258:15 263:8
132:24 263:14	199:3 203:5	51:2 76:22	265:22 271:14
reading 208:24	214:21 216:1,22	166:3,16 178:14	275:25 303:19
real 23:4 27:23	220:11 224:18	208:22 215:9,16	310:16,22 314:2
33:11 58:12	232:4 233:4,10	217:18	317:2 323:19,21
71:21 75:22	239:19 242:11	221:23,24 235:7	329:7
90:19 105:23	244:15 246:4	238:15	recorded 17:11,22
149:9,24 213:19	247:1 248:1,6	recently 148:9	18:1 206:23
214:19 219:12	252:20 257:9,18	166:10 193:6	recorder 114:10
238:23 240:23	260:8,11	reclaim 279:16	recording 3:19
259:6 266:21	262:3,19 269:23	recognition 103:5	19:3 21:22,24
303:14	276:14 286:8	recognize 214:11	50:9 138:12
realistic 228:9	287:25 298:7,10	248:18,19	142:16 176:22
realistically 98:12	304:3 313:12	309:20	records 70:2
reality 24:2 33:2	314:3 319:21	recognized 189:25	recoup 208:2,6
35:7 64:20 67:23	realms 192:13	255:9	recover 279:22
259:5	realtime 123:17	recognizes 73:24	recreate 109:22
realize 90:22	124:3	recommendation	177:18 188:14
113:22 252:14	real-world	44:23 56:13	200:8 225:21
realizes 46:1	237:7,21 256:4	74:23 302:20	269:11,13
real-life 45:24	266:20	Recon 172:11	recreated
46:12	reason 62:11	reconnect 176:14	218:11,18 226:6
really 5:18 25:25	80:3,8,10 108:20	reconsider 166:18	rectified 10:23
26:2 28:15 30:16	110:2 123:10	reconvene 115:8	rectify 10:15
42:9 43:21 46:15	144:3 156:11	160:17	Rectifying 10:16
49:21 54:19	174:16 179:22	record 5:9 6:8,10	recycler 319:14
55:13 57:9,18	191:9 202:12	7:5 9:14 15:11	recyclers
58:11,25 59:1,23	227:24 263:5	16:4 18:11 19:22	279:16,17 283:8
64:5 67:16 69:4	303:20 316:20	48:25 49:17	recycling 279:17
91:11 93:24 98:2	318:13	50:1,7,14 53:15	red
100:5 101:24	reasonable 43:7	56:8 62:20 64:22	274:14,18,19,24
104:2 108:16,20	328:1	66:10 68:19	304:22 310:10
113:3,10,14	reasonably 54:22	69:3,22 71:21	315:18
131:17,24 139:3	92:20	92:9 93:17	redeem 83:22,23
146:4 150:5,15	reasoning 75:22	103:23 108:12	87:13
153:22 156:10	237:6	114:12 115:23	redefining 167:13
158:1 159:25	reasons 95:24	122:3 124:2	redirect 267:17
160:10	136:9 189:21	138:2 139:3	redistributing
162:15,19	236:17 264:24	145:25	291:11
164:15 170:1	302:12 304:4	151:7,10,12	red-ring-of-death
171:24,25	311:21	154:2,9 162:17	280:25
173:14 177:17	reassess 183:16	163:2 186:18	
187:25	receive 120:21,23	188:24 197:19	
188:6,21,22	131:6	230:25	
189:1,5 191:24	receiving 130:20		

re-editing 51:18	324:5	118:14,17	remark 79:3
reenactments 27:23	regardless 149:9 157:7 254:6 303:1	132:17 255:16 298:2	remarks 116:8 144:15 264:18
refer 18:7 40:20 63:1 241:22 309:7	regards 33:1 242:3	relation 88:21 139:9 188:2 293:8	remediate 136:24
reference 20:25 108:11	regime 265:9	relationship 61:24 86:17 122:20,25 152:4 166:14,19 167:15 169:25 256:3	remember 92:9 136:16 227:6 249:6,7,8
referenced 25:9 326:19	regional 313:17	relationships 152:10 165:19 167:13	remind 76:3
referred 31:6 146:19 309:13	register 220:2 302:19	relative 81:25 329:11	remix 63:18
referring 6:7 138:7 226:4	registrants 267:2	relatively 124:7 134:11 178:13 235:6 250:7 318:7	remote 127:2,19 144:8
refers 40:17 74:24 113:5	registrar 61:8	release 10:15 78:13 81:1 82:4 84:25 85:13 231:15 263:23 323:12	remove 149:17
refine 323:18,22	regular 96:14	released 80:16 112:8 131:8 230:15 232:20 239:1	removed 103:14 194:12
refined 43:15	regularly 50:22 238:24	releases 83:15 144:1	removing 205:10
reflash 285:6,8 306:14 314:18	regulate 81:11	relevant 57:6 68:16 69:15 70:9 77:5,13 106:7 165:25 184:18 255:13 295:23 307:7,12 312:3,7	rendered 193:25
reflashing 320:10	regulation 61:15	reliant 280:16	renew 21:7
reflect 155:5 250:16 261:17	regulations 136:15 144:19	relied 94:15 193:22	renewal 70:16,18 72:11
reflected 15:18 46:7 234:21 283:22,24 284:5	regulatory 154:24	relies 219:17	renewed 60:15
reflection 46:12	Reich 33:24	rely 219:20 328:6	renewing 20:2
reflects 234:19	Reifenstahl 67:10	remain 181:5 319:7,23	rented 101:17
reflow 276:12	re-introduce 238:25		repair 271:25 273:22 274:3 275:19,23 276:23 277:4,6,23 278:20 281:12 282:9,13,17 283:3,25 284:14,15 285:2,13,18 286:6,11,16,17 287:17,25 288:2,10,16 289:12 304:6,11 305:16 306:6,20,22,25 307:1,11 309:16,18,25 310:4,11,17 316:25 317:19,21 318:9 319:7,14
refrain 5:13	reiterate 57:1 313:6		
refused 244:8	re-jailbreak 310:6 321:9		
REGAN 2:11	reject 15:3		
regard 26:23 89:16 90:20 102:10 127:12 136:12 139:15 156:23 316:3	rejected 9:22 10:10,12 14:21 24:9 214:9 220:2 237:6 302:11 313:16		
regarding 49:8,25 50:12,21 53:10,12 56:7,8 59:6 117:1 240:18 249:12	rejecting 14:10 51:19,21		
	rejection 13:12 14:2,5,8		
	rejections 51:16		
	rejects 182:14		
	related 117:6		

320:23,24 321:8 322:8,9 323:14 repaired 286:9,11 repairing 275:13 278:15 280:22 repairs 282:12 304:10 310:19,23 313:10 314:14,17,19,21 321:11 322:10,25 324:7,9 repeat 14:3 repeated 99:20 repeatedly 313:16 repeating 162:20 324:15 repetitive 206:8 replace 209:4 281:1,2 305:22 307:2,3,9 316:1 318:10 replaced 112:15,16,17 replacement 226:7 229:2 235:20 282:17,18 306:18 308:8 replicate 189:5 251:16,17 reply 89:1 128:10 152:14 191:4 213:16 214:25 217:16 234:22 report 76:4,10 reported 1:23 78:10 reporter 6:15 329:3 reporting 47:9,15 137:24 138:3 142:4,12 281:19	reports 315:2 represent 15:13 40:24 180:7 206:11 259:9 313:7 representation 40:22 202:3 representative 215:11 represented 11:10 119:2 representing 7:5,8 8:3 116:2,3 163:3,21 271:24 273:14 represents 7:15 116:12 185:4,5,6 284:16 reprint 76:11 reproducing 209:19,21 re-purpose 238:24 286:25 re-purposed 283:2 re-purposing 286:19 reputation 26:21 request 9:2 88:17 89:6 98:2 274:1 286:21,22 290:3 323:18 324:1 requested 239:8 requests 79:14 117:5 204:17 303:7,12 require 124:24 165:9 173:20,23 178:15 202:20 203:7,9,20 204:18,23 214:5 222:13,19 223:10 224:7 254:19 255:3 269:12,17 291:2	292:4 306:5 309:17 312:14 323:1 required 19:22 20:13,15,19 50:10 55:4 126:1 174:2 199:24 222:12 247:2 250:8 319:22 requirement 60:24 199:1 221:25 222:1 requirements 20:5 53:6 54:17 55:1,11 61:12 76:6 93:22 94:7 requires 51:11 56:4 78:25 156:9 218:10 224:18 250:9 269:4 324:4 requiring 161:3 rereading 89:1 re-released 261:23 re-releases 261:7,9,19 rescue 283:9 research 29:16 197:4 234:10,11,24 235:3 265:7 311:1 researchers 240:21 reset 321:9 reshaped 183:12 reside 150:19 216:6 218:13 226:5 resident 74:4 149:8,16 150:24 resides 216:4 217:13 218:21 residing 214:3	216:10 219:12,21 resolution 11:11 12:17 17:15 54:17 98:9 99:5 109:25 resonated 182:1 resources 78:6 82:15 respect 15:15 102:3 119:23 213:15 215:22 respective 238:18 respects 212:6 respond 15:21 24:17 42:7 57:8,11 105:25 213:13 220:8 240:16 245:6 262:25 278:10 307:14 312:4 316:23 317:13 responds 200:20 response 60:9 64:16 83:4 94:8 106:16 142:15 252:11 258:21 274:5 302:9 306:4 326:16 responses 162:22 303:5 responsibility 77:15 responsible 236:7 responsive 220:20 rest 46:13 212:2 restaging 65:17 restoration 269:16 restored 228:14,23 restoring 204:22 241:1 restrict 325:12
---	---	---	--

restriction 64:6	revolves 30:18	99:12	264:6,15 266:1 268:24
restrictions 34:6	rewrite 24:24	role 46:20 167:20 186:20 258:5	running 106:12 137:23 149:3 152:20 174:13 201:16 205:2 215:5 230:17 292:15 299:11 301:20 320:9
restricts 280:8	rewriting 267:19	roof 45:2	
result 148:13 165:13 185:20 217:18 224:22 230:11 274:12 275:12 314:6	rewritten 219:14	room 7:2 22:15 60:7 78:20 98:16 142:11 147:15 184:3 187:16 188:13 209:22 262:12	run-of-the-mill 40:11
resulting 238:13	rhythms 174:17		runs 137:11
resurrect 171:15	RIAA 8:19 60:13 116:19 145:24 163:23 206:6 272:8	roughly 82:20	Russia 113:6 185:5
retail 165:10	rich 168:1	round 70:22	Rusty 5:4
retailers 84:2 85:17,18	Rick 50:14	route 54:14 259:23	Ruwe 2:9 4:15 6:2,4 18:7 39:11,12 111:14,23 186:20 188:14 229:1 267:13 268:12 269:2,20 322:4,13,22 323:2,16
retain 75:19 110:22	Riefenstahl 34:2 37:18 39:13 90:25 111:5	routers 127:24	
retire 266:11	rights 3:12 8:16 23:20,23 39:7 55:10 63:4 86:21 87:12 91:13 104:14 106:1 125:20,22,24 126:3 260:3,7 266:25	routinely 219:16	
retreading 5:13	ring 274:14,24 277:13 304:22 310:10 315:18	RPR 1:23	
return 152:12 183:19 201:24	rings 274:19	rubric 141:12	
returned 173:12	rip 22:7 107:10	ruined 251:10	
returning 243:5	ripped 37:2	rule 57:22 105:3 106:20 115:16 117:24 179:2	
reused 283:2	rippling 25:21	rulemaking 1:5 4:10 28:18 56:13 115:17 117:25 160:23 193:16 238:12 241:23 245:3 256:14	
reveal 166:13	rise 51:6 69:1	rulemakings 194:4	<hr/> S <hr/>
revealing 167:12	risk 122:4,16 139:11 141:9 314:1 324:15	rules 6:13 167:24 191:14 294:1	safe 75:5 181:13
revenue 83:2 295:18,23	risks 117:19	run 27:13 36:4 97:19 133:23 134:8,11 152:15,24 156:17 157:13,25 158:14,16 173:24 175:19 176:8 177:16 193:14 200:23 202:22 205:22 209:18 260:19	safer 131:24
reverse 130:2 138:21 173:5 209:3,5,7,10	RMR 1:23		Sajnani 3:4 8:6
review 195:25	road 6:13 198:6 308:24		sake 143:22 179:13 198:20 272:21 315:4
reviewed 191:8	robots 186:6,7,12		sale 238:6
reviewer 196:1	robust 75:17 87:11 218:10 240:1,14		sales 77:16 112:1 113:14 315:2
reviews 50:23	Roger 10:10 23:10		Salton 32:21
revisions 314:24			Samsung 132:17,19 142:2,6,11,13 143:15 144:5 156:17,18 160:1
revisit 183:16			Samsung's 142:15
revoke 96:11,14,16,23 97:2,3			San 180:19,22 252:13
revoking 97:19			
Revolution 174:18			

sanctioning 141:14 Sanjami 48:2,3 Santa 169:2 290:8 Sasha 290:9 satire 40:22 satisfy 42:25 SaurikIT 3:14 272:2 save 172:25 210:24 savvy 142:5 saw 15:4 19:16 24:18 30:7 38:6 53:23 68:8 72:16 108:11 139:2 251:6 323:11 scale 11:12 scenario 140:21 145:4 204:9 scene 108:1 scenes 65:18 schedule 252:7 262:7 scheduled 160:16 scheme 129:19 130:3,4 312:22 schemes 121:18,22 scholar 190:19 scholarship 29:16 199:2 school 5:3 7:20 163:11 164:12 213:4 schools 104:19 science 164:15 scope 31:12 125:9 287:16 scores 247:7 Scrabble 293:25 294:4	scrapp 284:9 scratch 209:9 screen 12:1,2 16:1 21:13,17 22:4 50:10 70:12,15,19 71:12 127:14 213:7 232:4 256:9 298:21 screens 50:10 screwed 297:6 script 35:1,2 scripted 38:21,22 63:2 66:3 scrupulous 197:15 SD 17:20 73:2 93:18 94:9 98:5 100:25 SDK 128:19,25 129:1 133:10,15 135:1,3,20 142:19 SDKs 133:14 sea 32:21,23 seamless 74:3 search 91:1,4,13 searching 40:13 second 18:15,17 19:4,24 27:15 61:24 95:20 101:9 124:3 135:24 147:22 149:10 189:24 204:24 225:4 246:17 260:5 263:17 secondary 149:19 seconds 17:2 105:4 secret 76:23 204:13 Section 4:9 218:5 243:11 264:22	secure 143:6 144:4,7 266:21 security 117:18 118:14,17 121:3 129:2,10 130:18 131:6,10 143:4,6,16 144:1,11 145:10 152:3,11 202:4 seeing 4:12 25:14 69:2 82:23 87:23 103:15 190:13 247:20 282:25 300:3 320:25 seek 39:15 68:18 69:13 136:25 137:2 188:15 seeking 7:9 37:19 90:10 106:8 155:6 179:12 236:4 272:20 283:25 seeks 267:16 273:3 seem 47:25 49:7,18 108:13 120:10 153:11 158:21 181:24 188:17 196:12 212:16 233:2 241:13 seems 94:5 98:6 103:8,11 113:12 209:10 244:5 276:22 305:8 314:14 317:14 324:2 seen 51:6 66:7 110:3 117:25 122:3 126:16 127:23 131:5 238:14 261:13 265:5 284:10 303:10 312:20 315:10 323:9 Sega 232:18,23 Sega's 183:12	select 325:2 selected 166:10 self 189:19 sell 86:22 196:22 253:12,18 278:9 282:9,17,21,23 283:7,10 284:2,3 295:11 327:20,22 selling 307:17 318:24 sells 239:2 Selma 91:12 seminars 107:21 send 14:20 101:18 173:10 326:20,22 sending 104:15 138:13 275:14 Senior 4:21 sense 30:10 34:19,20 35:22 44:21 74:20 85:1,11 150:8 169:7 191:10 194:21 198:23 221:3 251:20 255:3 258:5 sensitive 280:4 sent 12:12 sentence 23:1 sentiment 194:25 separate 63:16 64:2 70:10 149:6 178:2,3 204:3 210:20 222:5 246:11 318:11 separated 156:21 separately 124:21 212:19 215:1 326:14 sequence 248:22 series 31:22 86:15
--	---	--	--

<p>96:15,16 256:8 serious 143:9 190:18 197:17 266:21 serve 29:14 147:9 server 95:22 142:7 161:3,10,13 167:8 170:20 171:15 173:6,8,11,24 174:13,22 175:20 176:21,24 177:15,19 189:12 190:2,9 192:24 194:1,15 199:9 200:10,18,21 201:6,24 202:3,6,11 203:13 204:17 209:18 216:7,11 217:7,14 218:13,21 219:15,22 220:20 222:19,24 223:5,14 224:4,9,14,19 226:5,7,11,12,19 227:6,8,10 228:15,16,25 229:2 230:17 234:4 235:20 237:13,17 250:19 254:19 260:19 268:7 269:14,18 server-based 215:1 server-mode 221:2 servers 171:8,20 172:4 175:3 176:8,13 177:1,2,8 181:22 183:4,7 189:14 192:18 193:5,7</p>	<p>201:16 205:2,19,23 216:18 218:10 219:16,20 224:23 225:22 226:5 227:7 231:8 236:5 237:13,20,22 244:13 259:10 262:20 269:10 service 73:8,23,24 83:24 85:19 87:9 111:1 150:11 225:9 232:14 233:17,18 234:1 236:15 283:6 285:14 307:19 319:12 services 48:14 73:18 81:22 83:10 84:22 85:9,16,21 178:9 205:17 210:22 231:10 275:19 service-side 164:23 165:1 serving 124:8 146:6 session 238:4 251:23 303:21 sets 25:4 137:20 setting 45:24 46:13 57:23 201:5 242:23 244:12 309:20 settings 19:3 settled 296:24 297:9 settlement 297:12,13 set-top 85:23 97:7,16 114:7 seven 164:10 several 33:19 72:17 101:19</p>	<p>117:2 118:16 127:3 136:9 196:22 197:5,21 198:8 241:24 265:21 sexism 110:6 shadow 189:18 Shang 50:7 shape 136:21 share 77:8 81:17 125:21 141:22 157:5 196:19 273:12 317:25 322:11 sharing 243:9 322:8,13 shed 36:18 shelf 168:20 189:13 shell 135:16 shelving 165:7 shifting 77:24 ship 137:24 138:4 shoot 186:12 short 35:4 40:2 54:9,10 60:19 61:5 79:17 82:16 98:3 101:20 102:10,12 103:4,13 104:4 105:9,13,14 106:18 107:1,2,9 108:2,6 110:17,23 131:4 160:15 194:23 208:10 220:22 271:15 shortened 16:25 17:1 shortest 189:13 shorthand 161:14 329:2,8 shot 66:15 67:5</p>	<p>261:15 shots 10:18 232:4 256:9 shoulders 183:10 showed 25:17 shower 115:22 showing 10:9 26:9 48:25 50:8 56:24 182:24 195:24 255:16 264:5 303:24 shown 91:17 102:17 236:22 315:24 shows 10:5 68:14 76:25 80:25 99:25 108:19 149:3 206:25 253:15 256:18 show's 100:4 shredder 283:10 shut 127:15 172:14 173:4 176:13,25 177:8,9 181:22 183:6 189:14 192:19,20 193:5,7 205:19 224:15 226:11,12 236:16 324:9 327:13 shutdown 171:19 172:22 176:22 192:24 195:2 196:22 218:11,12 224:22 234:4 shutdowns 170:21 190:2 194:22 220:21 226:6 shutting 327:1,24 sides 248:11 side's 5:17</p>
---	---	---	--

sign 73:22 210:23 252:7 259:16 signal 114:13 signals 200:19 signed 320:4 significant 80:1 138:24 181:9 192:17 210:16 218:6 275:9 279:8 284:18 significantly 207:24 280:8 signing 50:23 259:18 silence 25:13 183:3 silently 142:21 silly 181:24 SimCity 219:5,13 223:20 224:12,14 similar 64:4 117:7,11,14 120:11 151:3 179:8 191:14 210:11 263:22 276:25 290:1 292:17 293:6,10 similarities 117:5,21,22 119:20 146:12 Simon 3:24 8:20 69:7,14 163:24 206:8 211:10 272:9 301:25 simple 148:16,17,19 248:1 250:7 269:5 298:20,25 simplest 200:22 simply 27:5 45:6 48:24 52:6 53:13 60:4 179:14,17 183:5 192:14	198:15 222:18,20 236:21,25 243:4 245:5 248:21 250:12 252:20 267:24 272:21,24 Simpsons 77:1 simulated 200:18 simulation 294:20 single 15:6 97:12 158:24 185:24 186:11 191:5 218:3 225:13 279:7 315:20 317:22 single-person 184:14 single-player 184:17,18 185:23 186:1,3 190:12,22 191:12,21 192:11,18 193:4,8,10 216:3 223:6,11,13 224:1,6 225:8 234:15 240:7,15 253:8 290:12 291:7 single-prayer 191:25 sit 147:14 173:10 187:13 188:7 252:1 site 177:20 sits 100:2 288:14 sitting 109:5 150:24 174:7 250:15 251:7,25 situation 34:16 297:22 309:5 situations 40:15 41:2 42:17 51:15 98:7 218:22	220:25 317:20 six 76:9 78:13 99:5 194:4 277:25 278:5 295:17 six-hour 107:21 Sixth 1:4 160:23 size 127:8,10 132:21 265:13 sizes 17:23 skin 25:22 skip 22:24 25:24 Skyrim 295:7,12 301:18,19 312:21 slag 279:24 slap 196:23 slides 10:8,9 161:24 slight 325:2 slightly 288:23 294:23 316:4 slipped 24:10 slippery 239:22 sliver 302:16 Slocombe 33:18 slower 279:2 slowly 181:23 SlySoft 95:21 96:6 small 12:14 84:5 91:22 102:6 158:7 171:13 189:1 223:25 224:20 225:21 233:7 248:8 265:14 275:5 302:16 305:6 321:19 smaller 12:17 262:5,13 smart 115:14,24 118:5,21,24 119:7 121:10,23	122:22 124:6,25 126:11 132:7,19 133:13 134:16 137:22 146:3 147:3,8 148:22 150:2,12 152:14 154:13 210:8,13 212:18 214:17 297:22,23,24 298:1,6 300:20 301:2,4 smarter 137:15 smartphone 117:8,22 118:2 127:13 143:7 smelter 280:10 Smith 2:11 4:19 17:8,13 18:16 19:17 39:21 54:15 66:5,9 67:1,9 70:10 71:8 84:14 86:23 95:7 96:9 97:3,18 112:7,19 235:18 Smithsonian 166:11 168:15 169:1,4 249:19,20,22 smoothly 100:22 sniffers 209:7 so-called 303:8 304:22 social 30:14 49:5 socially 176:2 society 76:10 318:24 SOCOM 192:22 software 3:17 12:2 16:3 17:4 19:21 21:25 22:9 70:15 93:4 96:18 97:4,10 116:10,11 117:12,17,20
--	--	--	--

118:10,17,23 119:1,3,25 120:8,21,23 121:5,6,16 122:5 123:14,16 124:14,20 125:1,5,18,21,24 126:1,5,22 128:9 129:11 130:5 133:15,23,24 134:1,6,20,21 135:5,15 137:1,11 138:17,18 141:8 143:23 150:1 152:16 157:10,21 159:10,24 161:3 163:25 164:2 179:20,21,23 193:22 194:1 228:16 242:3 272:10,12,25 281:5 285:5,10 286:19 287:15 288:8 289:15 299:14 301:13 308:23 310:3 321:15 327:10 sold 80:20 82:21 172:15 182:1 275:6 278:23,25 286:1 315:3,6 327:21 solder 276:5,13 soldier 45:25 46:14 soldiers 46:3,8 solely 35:8 207:1 326:6 solid 284:17 solitaire 191:13 solo 116:16 163:15 271:22 solution 203:19 solutions 172:6	solve 203:14,19 211:4 260:9,14 somebody 23:13 98:25 136:13 156:12 159:25 294:10 320:5 somehow 30:13 47:11 217:20 269:13 298:5 someone 35:22 43:22 64:5 107:24 108:21 111:3 112:7 124:13 133:7 138:22 147:20 149:15 150:22 177:19 191:24 197:10 227:5 241:16,17 251:25 252:14 254:16 259:14 261:3 274:2 278:14 282:21 286:15 292:1,3 310:7 316:21 Sometime 35:12 somewhat 174:18 246:11 somewhere 37:3,15 66:16 142:7 158:18 202:16 256:9 song 31:21 Sony 31:10 166:4 167:2,3 169:2,8,14,19,25 170:1,4,6 215:16 235:11,12 249:11,14,15 250:11 274:12 275:1,3 285:13 296:12,13,21,22 297:2,5 304:24 305:5 306:7 322:9 Sony's 170:1	275:2 sophisticated 123:3 245:17 250:4,6 sorry 22:18,19 27:6 31:1 57:21 99:7 100:12 111:21 119:13 128:24 143:22 169:8 226:21 246:23 250:21 251:5 258:23 260:25 268:10 304:16 sort 5:15 14:8 21:13 28:17 29:6 30:23 41:24 44:8 54:16 57:4 59:12 70:10,12 79:21 82:8 87:2 90:23 98:11 112:19 123:1,11 124:9,10 126:17,20,25 127:3,4,6,10,19, 24 128:2,19 129:15 130:8 131:2 134:19 135:18 136:18 137:14 138:16,19 139:12 142:2 143:11 144:1 149:23,24 151:6 154:24 156:16 157:2 158:7 162:22 165:9 169:23 171:18 175:4,10 176:15,18 177:7,18,19 178:2,12,22,25 185:4 186:22 194:25 198:12,16,19 199:8,12,15,18 201:17,24,25 202:3,15 208:14 209:10 211:15	212:14 215:25 221:12 222:15,16 224:25 231:25 234:11,19 236:1 241:10 246:2,8,9,18 257:8,16 259:2,13,22 261:7 262:21 271:11 276:25 290:8 298:14 303:10 317:12 318:12 319:5 323:21 325:12 sorts 12:7 127:20 136:15,23 139:16 290:18 sought 34:8 86:24 175:18 236:12 259:9 soulless 186:13 sounding 314:1 sounds 110:11 160:11 178:5 206:13 227:20 249:24 283:12 288:4 292:1 source 13:17 18:2,4 19:5,8,10 20:11 37:20 66:16 71:5 72:10,24 81:3 94:6 112:12,14 119:1 125:17 128:9 133:23 134:2 143:21 273:22 281:17 317:21 326:1 sources 36:16 65:11 68:6 72:12 85:14 space 62:10 71:22 75:5 165:9 182:5 186:10 spawned 253:5
--	---	--	---

speak 6:17 21:24 75:20 77:11,18 104:1 105:19 115:20 116:23 132:10 147:21 150:6 152:8 175:14 190:5 197:3 201:11 233:24 243:23 261:11 328:9 speaking 103:1 162:5 247:11 256:4 287:24 297:18 speaks 232:8 spec 99:21 special 157:20 158:4 274:10 specialized 52:8 special-purpose 126:19 specialty 289:15 species 245:22 specific 14:9 35:20 37:12 40:1 47:3,4 49:25 51:20 56:8 71:5 77:11 86:25 95:11 124:8 126:12 134:18 151:5 154:24 157:10 167:4,15 171:17 185:21 195:21 232:1 233:6,24 272:6 304:7 305:16,20 307:1,24 310:17 312:1 317:9 318:14 322:21,25 specifically 9:9 16:18 40:17 49:17 75:11 132:14 135:3 151:14 154:3 156:23 170:22	176:6 215:4 230:5 232:8 236:18 261:11 281:22,23 306:4 specifications 52:19 100:9 specifics 48:12 130:24 235:23 specs 14:16 spectrum 216:1,2 220:19 234:12 speeches 242:21 Spelunke 290:10 spend 319:1 spending 258:13 319:2,3 spent 78:18 173:5 275:16 284:9 spikey 318:17 Splicer 17:5 split 63:14 spoiled 251:4 spoke 83:8 spoken 231:24 sporting 244:25 spot 64:11 spots 44:23 spouse's 143:1 spread 136:14 squad 185:2,9,13 squads 185:1 square 11:13 99:18 squeaked 99:13 Stacy 2:13 4:21 stage 34:18,23 35:11 41:3 48:16 stake 302:21 stand 11:19 183:10	standard 9:21 10:12 11:14 12:13 16:4,5 17:22,23 19:22 26:9 43:13 44:1 69:12 72:17 73:5 74:1 84:9 87:6,7 90:13 92:12 99:6,18 114:13 263:2 313:13 standards 25:4 51:6 94:3 105:3 standing 266:24 standpoint 113:18 stands 182:13 star 31:21 65:14 68:13 172:11 261:14 Stars 261:14 start 7:5 9:11 61:11 91:18 115:8 160:16 162:25 163:1 166:11 176:22 185:11,18 250:23 271:19 started 84:7 128:2 135:25 142:4 177:1 275:21 287:24 starting 161:19 state 7:3 139:18,19 150:21 243:6 319:24 320:1,12,14 321:15 329:3 stated 78:8 117:24 170:10 statement 5:12 15:21 42:6 44:24 48:4 56:12 76:5 115:21 161:24 162:13 164:5 200:13 271:15,16	272:15 290:23 statements 47:23 50:14 162:12 163:1 293:10 states 77:22 86:7 250:1 284:8 statistics 81:17 278:7 status 258:6 statute 145:1 265:3,15 304:5 statutes 144:24 166:22 stay 62:14 145:5 193:18 stays 75:4 steadies 112:5 steal 123:6 step 90:9 255:9,10 278:19 324:10 stepped 172:3 stepping 98:17 steps 53:5 215:14 276:23 Steve 2:9 4:15 109:15 stick 28:2 sticking 246:3 STK 134:16 stock 131:25 281:14 283:20 Stoltz 163:17 180:3,4,10,16 189:10,11 190:16 191:2 192:2,8 194:17 195:13,21 196:21 198:24 199:6,20,24 200:11 201:9 204:11,25 205:6,24 223:18,22
--	---	--	---

224:12 227:13,21 228:8 229:5 230:10 240:16,17,18 241:19 243:4 244:22 245:15 246:15 253:21,22 255:25 258:2 264:19 265:18,19 269:16 stop 119:4 130:19 131:15 254:14,16 stopped 264:7 275:19 278:16 stops 276:16 storage 152:15 158:6,7,17 210:17 222:14 293:5 295:21 store 158:11 210:9,22 272:3 295:18 296:3 300:13 stored 216:20 217:6 225:22 227:16 293:4 stories 27:23 33:11,16 40:20 181:2 182:8 story 31:25 34:19 38:8,9,13,15 39:1 44:7,12 45:23 46:13,14,15 114:6 135:25 strategies 203:4 242:8 strategy 262:21 stream 121:14 125:2 148:3 159:2 streamed 74:7	streaming 10:5 74:22,25 88:3 100:14 121:11 122:9 123:25 124:4 152:23 157:19 158:5,22 210:11,21 streamline 227:25 streams 122:13 123:16 street 113:4 264:1,4 strength 183:2 stress 20:3 stretch 73:5 stretched 108:6 stretching 99:19 strictly 15:25 30:19 strike 246:7 stringent 14:16 strong 196:4 197:8 241:20 255:15 318:20 strongly 80:11 203:7 232:1 structure 144:2 struggles 65:14 struggling 58:4 251:14,15 257:2 student 8:1,7 163:11 students 85:2 164:19 290:7 315:17,20 studied 5:17 71:5 132:14 184:1 studies 71:2,4 studio 73:7 87:17 152:8 180:19 studios 26:7 69:8 113:4 152:2	studio's 86:17 stuff 140:7 164:16 202:15 229:19 251:16 277:10 296:4 stupid 123:2 subclasses 213:23 subject 114:22 subjects 33:3 submission 286:16,17 submissions 39:23 303:9 submit 13:21 256:1,12 submitted 5:14 12:10 15:23 16:11 17:9 26:5,10 28:3 88:19 288:1 subscribe 222:17 subscribed 329:14 subscriber 222:21 subscription 86:16 88:2 178:15,23 207:19 210:21 221:25 222:11 subset 102:6 171:13 317:15 substance 155:11 substantial 56:23 78:5 79:24 156:9 221:9 236:21 240:12 265:2,20 276:17 303:15,25 313:13 substantially 83:15 84:17 192:8 substitute 10:25 19:18 198:9	261:10,25 262:19 263:2 subtitles 132:22 succeeding 312:21 success 166:17 207:17 successful 149:20 173:12 successfully 249:10 290:4 succinctly 63:5 suck 62:18 sucks 274:25 sudden 100:5 sue 296:12,13 sues 297:4 suffer 106:11 suffering 304:21 suffice 157:12 sufficient 236:23 265:15 311:16,22 sufficiently 104:4 suggest 22:10 45:13 suggested 103:24 136:10 177:24 238:3 suggesting 103:7 159:5 225:19,23 238:21 241:13 246:5 suggestion 59:24 217:19 suggests 216:15 219:23 suited 160:5 Sullivan 31:16 sum 153:15 summarize 200:11
---	--	--	---

summation 236:20	119:21 150:4	switches	table 32:14 88:9
summer 54:22	151:9 152:16	294:21,24	106:9 199:5
sun 49:15	157:23 161:5	switching 267:25	220:10 279:11
sunk 259:25	171:10 180:6	326:18	301:22
super 120:14	198:24 204:1	Switzerland 113:5	tablet 101:7
172:18 176:5	209:14,24	Sy 2:7 4:17	tablets 82:21
239:3 261:23	212:20 213:12	symptom 274:16	127:12,24
277:9	246:15 257:22	synchronization	316:19
superimposing	264:10 279:4	308:4,20	tailor 58:6,11
13:7	286:23 288:13	309:9,13 318:12	tailored 144:24
supplied 130:24	297:13 304:5	319:17	taketh 195:15
supplies 280:15,16	307:5 309:4	synchronize	taking 35:17 52:9
supply 129:17	surely 194:11	306:10	71:9 99:17 177:1
134:21	326:22	synchronized	291:23
supplying 121:25	surface 167:24	292:22	306:15,17
224:9	surprised 88:24	synchronizing	talk 6:14 11:24
support 50:19	233:25	307:4	45:4 69:7 76:1
80:11 120:3	surprising 166:23	synergies 245:23	90:11 91:16 94:3
131:6 161:12	surprisingly 218:1	synergy 240:19	95:10 96:9
163:8 166:12	survey 315:17	241:21 254:11	104:10 106:2
188:18 194:12	survive 325:25	synthesize 272:17	107:9 110:5
222:24 224:19	susceptible 80:4	system 9:1 12:8	136:1 146:24
225:9 233:21	130:10	17:19 81:24	151:14
254:7	suspect 156:6	89:12 90:12 99:2	170:19,24 173:1
supported 195:10	sustain 262:15	120:21 121:6	174:4 176:10
235:2 236:19	sustainable	122:6,21 128:4,5	198:18 199:17
supporting 7:17	258:16 260:4	130:5 135:5	201:13 215:23
8:5,17 131:9	SVOD	143:22,23	241:7 259:1
supportive 242:18	86:14,15,21	150:1,18 151:20	261:7 262:1
supports 313:7	swap 100:25	156:24 247:25	278:20 298:18
supposed 145:16	swapping 267:18	248:25 250:12	327:4
146:10 320:5	Swart 3:24 8:20	294:16	talked 32:11 43:3
327:12	76:15,16 79:8,23	295:12,13,21	52:11 55:16
Supreme	81:10 82:12	299:10 301:19	57:12 58:17,24
102:13,16	84:16,20 87:5	309:6 320:9	127:6,13 137:5
103:17	88:10 92:19	systems 118:12,23	151:2 175:15
sure 8:12 16:9	111:16,21,24	122:24 123:4	187:20 238:1
18:20 21:11	112:11,22	125:18 128:1,8	259:7 303:21
29:11 30:2 37:24	113:9,15	129:10 143:8,25	309:8 314:15
40:6 43:19 51:22	swath 187:2	154:16 186:22	322:7
64:14 66:23 70:8	sweat 25:21	229:18,19	talking 6:10
71:18 75:2	sweeping 214:8	247:21 248:7	14:7,10 24:25
78:2,20 82:16	220:2	289:8	25:13,19,25
88:7 89:22			29:21 31:14 54:8
			58:23 59:7,19
			78:23 103:19,20
			105:7,8 113:10
		T	

<p>119:11 140:18 147:20 150:17 152:18 173:14 188:24 204:7,9 223:24 226:23,25 227:1,9 229:25 239:23 245:8 252:19 255:17 259:8,19,24 260:6,11 263:12 266:13 269:2 271:6 278:24 292:1 298:3 310:17 314:20 315:7,13 317:4,6 322:14 323:5 325:15,24 tappe 292:22,24 targeted 132:12 133:18 targeting 130:13 targets 159:12 tariff 316:3 tariffs 313:19 316:5 task 124:5 171:10 taught 104:19 164:10 213:4 tax 316:7 taxes 313:21 Taylor 3:22 9:3 15:10,12,13 16:12,17 17:10,16,21,25 18:9,13,22 19:9,12,20 20:24 21:11,19 22:6 48:5 97:21 Taylor's 232:7 teach 165:13,18 teaches 248:23 teaching 164:14 team 79:10 288:25</p>	<p>teams 322:19 teamwork 192:23 tears 315:22 technical 8:11 18:23 52:18 71:2 92:11,15 93:12 94:11 114:14,23 120:4 122:25 149:25 164:16 200:9,15 306:8 307:6,18 326:16 technically 100:8 113:7 technician 52:7 Technika 174:9,12,17,21,2 5 200:14 technique 129:14 techniques 113:16 technological 60:3 67:25 72:14 75:16 87:1 technologically 123:3 142:4 technologies 22:4 89:9 technology 3:6 7:21 8:2,8 9:18 10:4 16:1,18 21:17 24:6,8 26:4 70:20 71:12 75:10 82:3 87:4 89:11,19 90:2 92:19 93:6 94:15,16 95:3,25 96:21 107:19 116:16 119:22 139:20 140:15 144:20 145:14 150:6 196:12 218:6 219:7 281:4 290:1 299:8 300:21 tedious 15:1 teenagers 109:19</p>	<p>Telecommunicati ons 2:14 telephone 118:18 television 7:16 14:11,12 26:18 33:22 34:13 76:21 91:17 108:18 119:18 122:23 124:16,20 128:15 129:16,18,23 130:6,11 131:16 132:8 133:19,21,24 134:1,25 135:18 137:12 138:23 140:5 142:12,22 144:4 146:5 147:15,24 148:4 150:1 151:4 152:2 156:5 157:14 158:16 159:6,20 160:6 206:24 televisions 125:17,23 127:22 128:16 131:3,5,10 132:15,18,19,21 137:24 138:2 142:3 146:18 153:3 154:13 157:5 158:2 160:2 television's 156:6 Televisions 131:4 temporarily 295:8,9 319:19 320:9 temporary 315:25 ten 195:2 232:21 233:9 287:10 327:20 tend 124:6 tends 86:16</p>	<p>tens 78:11 term 50:2,3,4 53:24 61:18,19 74:19 89:23 104:4 108:5 161:14 265:7 266:9,11,12 terminology 27:11 266:17 terms 7:1 21:13 22:18,22 29:17 44:3 52:23 54:11 78:19 79:6 86:8,23 100:18 125:13 152:3,4,5 153:13 168:13 185:12 214:1 216:2 220:14,25 229:24 231:1 233:17,20 234:1 235:13 250:8 252:2 257:23 305:8,9 311:9 318:1 325:22 test 57:9,10 58:11 102:13,14 tested 134:12 testified 9:16 testify 322:1 testimony 59:5 69:14 77:12 92:14 174:20 232:7 265:23 testing 200:17 text 127:7,10 thank 5:2 9:6 14:6 15:9 22:12,13 26:11,12,14 42:1 48:1,5 60:5,12 76:13,14 88:14 116:22 135:21 144:13 145:21,23 155:13 160:7 162:2 168:8,9 170:12 179:5,7</p>
--	--	---	---

<p>180:2 184:5,6 189:11 206:5 212:11 213:3 231:16 239:14 258:20 263:15 265:17 267:8,9 268:11 269:23 272:13 273:10 288:17 293:20 301:24 302:5 324:13 326:24 328:13,14</p> <p>thanks 166:12 168:10 205:5 324:13</p> <p>thatgamecompan y 165:23 169:1,3,13 247:24</p> <p>that's 10:22 14:23 44:19 56:12 57:6 62:6 63:7 82:1 93:22 113:3,18 153:22 159:1 176:9,24 190:22 192:6 196:17 213:9 234:21 237:8 261:5 269:20 279:23 285:9 288:16 289:15 302:3</p> <p>theater 81:1 264:2</p> <p>theaters 9:24 14:15,16,23 149:4,5 263:23</p> <p>theatrical 12:23</p> <p>theirs 226:18</p> <p>theme 194:6</p> <p>themes 144:18</p> <p>themselves 85:18 165:20 167:6 188:17 201:4</p> <p>theoretically 123:4</p> <p>theory 91:20</p>	<p>149:7 196:8</p> <p>thereafter 329:8</p> <p>therefore 144:7</p> <p>therein 329:6</p> <p>thermostats 164:25</p> <p>they're 15:17 27:20 30:14 34:24 38:16 40:24 41:3,14,22 42:14 52:12 54:12 80:4 93:7,23 103:3 124:7,8 131:7 144:23,24 153:6 181:18 195:24 196:9 205:2 209:14 212:17,21 221:5 225:23 226:7,16 230:3,4 239:1 242:18 245:20,21 255:17,18,19 264:12 265:1 267:2 274:7 279:22 280:10 284:12 295:20 308:25 320:24 325:17</p> <p>thin 91:11</p> <p>third 33:23 171:20 226:7 268:7</p> <p>third-party 121:25 130:10 237:13,17,22 299:11</p> <p>thirteen 17:1</p> <p>thoughts 115:4 125:13 139:1 141:17 162:4 188:1 196:20 243:17 324:11</p> <p>thousand 83:19 84:16 86:13 260:2 279:6</p>	<p>thousands 181:21 183:23 260:1</p> <p>thread 193:14</p> <p>threat 149:9 153:12 197:12 206:16 210:18 303:15</p> <p>threatening 104:14</p> <p>threats 104:16</p> <p>three-way 90:15</p> <p>three-year 258:17</p> <p>three-year-old 326:5</p> <p>threw 98:15</p> <p>thrilled 72:21</p> <p>thrive 118:11</p> <p>thriving 256:22</p> <p>throughout 35:11 41:11 99:25 144:19</p> <p>throw 64:13,23 175:4 282:15</p> <p>throwing 282:25</p> <p>thrown 91:7</p> <p>tie 243:7 300:2</p> <p>tied 44:1</p> <p>Tietell 83:8</p> <p>time-limited 207:20</p> <p>timeline 18:25</p> <p>timing-wise 155:19</p> <p>tiny 93:14</p> <p>tip 162:7</p> <p>titanfall 219:9</p> <p>Titanfall 219:5 223:21</p> <p>title 83:25 95:23 96:1,2,5,7,8</p>	<p>112:1 230:14</p> <p>titled 161:2</p> <p>titles 73:7 83:19 84:17,19,20,22,2 4 85:4 86:1,2,3,9,10,13 102:8 181:1 238:25 239:3 253:12</p> <p>TL 232:7</p> <p>today 4:12,24 5:8,11 6:24 15:17 28:21 59:5 60:13 65:10 68:9 76:12 77:9,19 82:10 87:21 113:10 114:25 115:19 116:2,23 156:1 160:12 163:3 180:24 182:13 187:13 194:1,13 195:6 207:5 212:2 213:16 214:15 215:23 219:4 225:18 239:23 272:17 302:8,12 305:16,19 311:2 313:8 314:10 317:1 326:5</p> <p>today's 206:19</p> <p>Tomb 76:23</p> <p>tomorrow 327:4 328:10,13</p> <p>tomorrow's 168:6</p> <p>tons 232:18</p> <p>Tonsager 164:1 211:15 213:13 223:8,20,23 236:14 239:16 244:5 262:24 267:22 268:3 272:11 316:23</p> <p>tool 95:17 140:23 183:2</p> <p>tools 94:18,23,24</p>
---	--	---	--

95:6,8,11,12,14 98:12 109:2 140:19,22 212:8 299:7 top 197:13 topic 75:25 264:16 torches 294:21 torrent 148:15,20 158:11,24 159:3 torrents 148:3 total 112:1 totality 38:16 totally 129:5 174:5 247:21 251:10 touch 26:24 61:4,23 72:2 76:1 182:15 203:13 touched 56:10 212:1 302:18 touchstone 183:19 tough 38:3 toward 46:8 94:17 towel 276:11,14 town 32:20,22,24 toxic 284:19,23 TPM 93:6 109:13 124:14,19,21 136:25 137:2,8,9,10 141:10 149:23,24,25 150:2 179:23 204:5,6,8,14,18 273:4,5 306:1,5,13 307:22 309:3,22,23 314:19 318:10,18 325:12 326:6 TPMs 118:21 119:5,10,16,17,2	2 120:5,7,25 122:5,21 129:8,9 137:7 142:20 143:20 147:2,8,16 148:18 149:7,19 150:12,16 153:16,21 TPM's 161:8 179:24 305:21 307:8 309:12,13 326:17 trace 259:15 traceable 208:13 track 80:6 112:11,12 260:3 267:3 292:18,21,22 trade 10:5 trademark 89:23 trading 234:23 traditional 54:14 118:9 210:5 265:6 traditionally 57:20,22 207:1 246:10 traffic 173:9 176:23 228:16 trained 101:15 transaction 194:19 246:20 transactional 26:20 transactions 87:21 transcribed 329:9 transcript 69:18 transformative 30:20 40:19 42:24 46:11 289:3,14 291:16 transiently 293:13 translation 247:8	transmit 244:25 transmitted 74:24 75:6 110:21 transmitting 142:6 travel 200:17 treat 87:2 300:12 Treating 182:20 trees 294:22 tremendous 242:2 286:24 trick 130:8 251:8 tricking 231:6 tried 32:1 70:7 triennial 1:4 4:9 160:23 193:16 tries 153:18 trivial 127:7 159:16 298:25 trouble 265:8 326:25 truck 279:25 true 27:5 29:20 38:9,12 39:1 93:18 130:21,22 134:14 147:1 150:20 178:7 191:16 215:15 253:10 truly 58:7 242:4 251:15 truncated 191:22 truth 30:3 33:2 64:25 try 6:20,22,23 22:24 43:18,19 53:6 56:5 59:14 66:24 67:1 77:4 106:13 115:19 155:4 162:4,8 164:6 175:24 206:7 208:7 213:3,11,13	221:15 235:22 253:18 268:9 283:4 302:2,5 305:5 trying 12:6 23:19 27:16 28:24 39:18 52:20,23 58:12 69:21 80:23 98:11 105:19 113:23 155:4 196:4 208:9 210:3 224:17 231:20 232:20 251:14 257:6 269:13 274:3 291:21 319:21 327:13 tune 31:17 tuning 155:12 tunnel 246:24 turn 142:20 248:11 274:16,23 291:7 313:20 Turnbull 3:20 8:25 80:10 88:6,13,14,15 89:21 90:2,14,17 92:3 94:1,10 95:1,12 96:12 97:6,20 111:4,6 turns 115:20 142:14 214:7 TV 35:21 76:25 86:1,11,13,15 109:10 114:17 118:5 119:7 121:24 122:22 123:5 124:25 125:22,25 126:2,23 127:5,19 128:3,6,20 129:3 130:9 133:4,6 134:5,6,8,13,16 135:2,9 136:21 137:4,20 139:25
--	---	--	---

142:8 143:21 144:9 146:3 147:3,6 148:5 149:1,3,9,16,17 150:2,12,18 151:15,17 152:20 153:8,9,13,14 155:23 156:17,18 157:22 158:19 195:24 210:13 272:23 TVs 115:14,24 118:21,24 121:10 124:6 125:15 126:6,11,17 131:11,22 133:13 134:12 135:14 137:15,22 138:8 141:19,24 143:17 147:8 148:22 149:12 151:7,24 152:14 154:13 155:25 156:23 157:18,25 159:23 TV's 135:6 154:15 210:8 TV-shaped 136:5 twelve-month 286:4 Twentieth 3:25 twist 146:9 Twitter 300:1,3,5,6,8 type 27:14 29:4 59:21 65:19,20 67:24 75:24 87:3 136:6 145:14 148:22 149:20 153:4 211:2 257:24 290:1 292:8 313:23	314:7 types 28:6 29:3 35:15 47:9 53:13,22 81:25 82:8 150:12 156:14 171:3 175:6 212:5,20 214:11 289:4 typical 11:14 91:5 typically 43:18 56:10,16,21 58:19,20 61:9 62:18 96:17 103:8 121:10 124:9 133:16 <hr/> U <hr/> U.S 4:7 45:25 52:4 76:18 78:12 80:17 167:18,21 185:5 284:20 U.S.'s 168:2 UC 7:20 153:3 UCI 3:5 8:2,7 107:18 UCLA 5:2 91:1 315:16 UHD 89:16 UK 148:8 ultimate 209:3 ultimately 41:22 127:21 173:12 212:22 247:9 248:10,16 273:2 ultra 10:6 11:16,19,22 50:13 89:2,8,23 90:6,10 UltraViolet 83:9,20 84:2,4 unable 175:20 208:1,6 300:22 unacceptable 36:25	unaltered 67:22 unauthorized 129:10 297:25 unceremoniously 180:25 uncertainty 219:25 unclear 5:20 154:20 234:14 322:24 unconstrained 246:13 uncontradicted 258:16 underlying 17:20 undermine 72:14 117:20 207:23 undermining 58:8 82:2 underpowered 124:7 underscore 94:13 underscores 252:17 understand 13:4 16:9 28:9 34:23 39:21 67:21 69:24 73:15 76:2 77:9 78:20 87:17 90:6,14 93:3 94:1,21 116:25 119:8,19,22 129:23 151:16 159:13 182:18 188:1 210:10 215:10 222:23 227:11 232:4 234:6,25 245:16 249:16 251:16 257:16,22 269:6 271:11 322:25 324:1,2,17 understanding 62:25 75:9 89:4,6,21,23	102:6 111:9 152:7,18 158:20 159:1 167:24 183:13 188:2 190:24 194:11 202:17,23 205:7 209:16 211:19 236:14 258:12 267:22 297:12,14 311:8,25 313:9 understood 129:6 136:7 211:23 228:4,5 269:20 288:14 304:6 316:14 undertaken 242:6 unencrypted 67:2 268:21 unforgiving 15:1 unfortunate 89:15 186:24 unfortunately 150:5 250:17 260:9 295:8 325:1 unidentified 256:10 uniformly 93:13 unintended 193:9 unintentionally 193:13 unique 184:20 317:20 uniquely 118:21 unit 79:24 285:8,11 United 32:1 77:21 86:7 284:8 units 278:24,25 315:5,11,14 universe 224:21 University 180:21
--	--	---	---

290:7 unlawful 197:11 unleash 325:9 unless 50:17 137:21 151:17 152:21 171:14 225:19 unlicensed 78:24 unlike 303:7,13 unlikely 102:21 124:12 unlocked 80:7 112:18 122:14 unlocking 117:1 130:17 unlocks 192:13 unlooked 112:17 unnecessarily 127:16 unpaid 240:25 unplayable 189:16 192:24 unprotected 36:12 unquestionably 133:6 unrelated 103:16 122:24 unsettled 70:13 unusable 36:25 unusual 47:2 up-conversion 101:14,25 up-convert 94:9 up-converting 94:4 98:22 99:15 update 120:10 143:25 updated 131:22 updates 130:3,20 131:7,11,15 upgrade 96:20	98:8 129:18 upgraded 73:3 upgrades 131:6 upon 13:7 31:21 68:13 188:16 upper 11:11 up-processing 52:16 55:12 upresing 111:17 up-resing 55:12 up-resolution 51:17 52:9 usable 326:8 usage 67:22 usages 68:10,14 USC's 164:11 useful 127:10 158:1 326:5 useless 258:9 user 97:4 117:11 120:14 127:14 129:7 130:7 131:14,17,20,21 132:21 133:20 138:10,15 158:21 189:1 216:4 225:8 292:5 300:7,11 users 96:22 117:19 125:19 127:18 128:16 129:4 131:11 134:11,17,20,24 218:8 221:10 226:15 user's 129:12 user-supplied 123:16 usually 47:3 69:11 87:11 122:10 157:1 224:6 243:13 255:11 utility 279:5	287:19,20,21 utilized 299:9 <hr/> V <hr/> vacation 32:22 vacuum 220:5 vague 104:4 valid 76:7 294:2 valuable 147:17 181:9 326:1 value 28:16 30:14 42:10,12 47:12 168:11 188:15,16 191:23 229:14 230:8 252:24 254:10 303:2 values 96:15,16 173:11 201:24 Van 40:8 vantage 191:1 varies 87:16,17 134:18,22 variety 48:17 52:9 83:5 264:11 267:10 various 26:6 40:14 86:25 94:20 157:3 248:8 295:10 310:9 vary 139:18 varying 30:3 vast 87:21 112:3 240:12 vendor 156:24 vendor-approved 118:10 vendors 118:24 134:18 venue 54:12 venues 48:20 verge 315:19	verify 87:9 120:10 320:16 verite 67:20 versa 207:3 281:21 version 17:9,11,13 19:18 80:24 112:16,25 113:1 191:22 209:17 210:1 244:14 253:15 264:6 268:21 311:5 312:1,13,14 320:17 versions 84:9 157:6 259:10 263:25 294:4 314:23 317:2,4,5 versus 27:9 30:21 31:10,13,18,20 38:21 57:5 61:5 65:15 68:7 78:25 105:7 119:24 150:18 199:9,16 228:4 261:14 vested 256:22 VHS 263:24 via 250:11 viable 282:10 325:5 vibrant 79:9 vice 207:2 281:21 victories 181:2 video 15:5,20,25 16:3 18:25 19:21 21:24,25 22:8 50:9 63:18,22 64:7 65:11,17 71:20 72:10 74:19,25 83:2 85:23 86:12,16 108:11,12,14,17, 21,23,25 109:6,7,8,13,17, 18,25 110:5,6,21
--	---	---	---

111:1 114:6,15,21 157:17,19 158:1 160:15 161:3,8,15 164:12,14,18,20, 24 165:23 166:12 168:12 189:12,25 190:2 195:6 197:8 198:7 206:18,20,24 207:25 210:21 213:19 217:5,18 218:7 219:2,4 224:5,21 232:3 233:18 238:17,23,25 239:3,10 242:20 247:10,15 255:6,21 256:11 257:14 258:10 259:9 260:18 261:3,16 271:5 272:19 277:8,12 287:4,18 289:5 291:6 295:4 297:22 298:3 300:23 301:11 302:15,22,23,25 303:16 310:10 314:6 318:24 319:2 videos 54:9 63:23 230:21 Vietnam 46:1 view 21:12,18,19 22:4 28:12 30:9 63:21 66:1 87:1 117:13 119:18 132:8 150:7 196:4 208:24 209:12 210:14 220:23 244:24 300:4 viewed 246:11 viewer 109:23	viewers 25:19 viewing 210:22 276:1 views 80:18 112:12 229:10 277:13 Vincent 163:4 violate 139:8 141:10 violating 57:21 violation 33:14 71:10 violence 110:6 virtual 239:6 269:12 virtually 7:11 viruses 136:14 vis-a-vis 31:18 visible 132:24 vision 246:24 261:17 visit 244:2 visual 99:22 100:1 VOD 84:22,24 voice 32:5 135:24 142:3,7,16 voiced 166:1 voices 164:21 volunteer 240:19,24 256:6 volunteers 258:18 Vudu 73:23 84:2 100:12,13,25 149:8 Vudu's 73:8 vulnerabilities 118:17 143:9 vulnerability 144:10,11	wade 69:4 257:6 wait 162:1 waiting 206:3 wake 127:15 195:1 walk 248:3 walked 174:15 251:14 walking 142:11 wall-to-wall 107:22 Walmart 73:22 84:7 war 185:17 Warcraft 216:19 warning 177:9 195:11 286:8 warnings 196:25 warranted 21:1,5 warranties 275:12 304:10 warrants 217:20 warranty 275:8 286:4 304:14,17 305:1,4 310:23 Wars 172:11 261:14 Washington 264:5 wasn't 21:5 30:16 52:13 129:4 140:11 187:1 296:10 298:8 waste 284:17,19,23 325:20 watch 101:7 112:24,25 147:15 210:12 213:8 watched 137:21 watches 100:2 watching 30:25	31:17 109:6 137:25 148:15 200:16 213:7 water 69:5 72:23 waters 61:12 62:7 67:15 Waterson 20:9 wave 11:20 ways 49:3 60:18 95:13 140:22 146:14 153:11 183:21 201:14 214:14 264:11 323:18 weaken 124:20,21 weakness 183:2 web 181:6 218:14 website 148:12 233:17,21 274:1 websites 149:2 Wednesday 4:2 233:8 271:2 week 107:20 117:2 118:8 255:8 weeks 111:24 112:3,20 weight 131:13 Weinstein 31:18 65:15 welcome 115:16 160:23 168:10 271:9,10 well-defined 228:1 well-established 144:2 we're 5:18,22 6:16 7:1,22 9:11 16:19 17:13 19:20 22:15 24:25 25:8,25 26:17 28:19,24 29:2,6 35:10,14 41:10,12,25
<hr/> W <hr/>			

46:10 51:25 58:2,3,23 60:6,21 62:4,6 64:7 72:11 78:23 80:10 85:3 86:3 87:23 93:24 97:14 98:11 103:19 104:2 105:15 107:1,11 113:10 115:7,20 137:22 140:18 154:11 160:16 163:18 180:12,15 211:1 213:19 224:17 227:9 235:15 236:12 239:21,23 245:8 246:6 252:4 260:11 263:12 267:11,12 269:22,24 271:4,6 275:25 280:9,16 283:7 284:25 285:3 301:13 307:17 313:24 316:4 317:3,4,5,14 319:21 323:5 325:15,24 327:1 WESTWOOD 4:2 271:2 whatever 50:2 80:8 106:24 123:17 135:10 145:7,9 195:11 198:5 202:22 209:8 241:12 303:20 326:8 whatsoever 122:21 whenever 155:20 whereas 144:25 whereby 83:9 WHEREOF 329:13 whether 20:19	30:18 34:21 39:19 43:23 44:4,5 46:22,23 56:11,13,16 58:4 63:22,24 67:16 70:13 74:17,21 78:24 79:5 92:9 134:17,19 138:12 141:19,20 157:7 169:19 170:6,10 176:16 198:4,19,20 209:19,25 210:8 211:7,15 212:22 227:7 236:1 241:15 243:9 256:14 260:12 263:3 265:19 294:6,8 297:2 326:17 white 25:19 137:19 whole 69:22 107:12 186:12 192:6 220:19 242:23 291:13 292:2 325:9 whom 165:7 246:20 whose 51:8 126:5 217:5 wide 206:17 215:14 267:10 widely 75:10,14 widescreen 99:19 widespread 123:25 256:24 Wiens 271:24 273:11,12 276:2 277:17,20 278:8 282:5 283:16,19 284:1 285:15,23 286:3,23 288:9,15 304:7,14,21 305:10,11,17,23	306:3,8,22 307:13,16,24 308:4,18 309:12,18 310:17 314:23 316:17 317:13,19 319:9,11 320:19 321:24 322:4,7,18 323:4 324:5 325:4 Wiens's 326:17 Wii 309:8 Wikipedia 64:17 275:7 William 31:11 Williams 3:16 8:18 60:11,12 61:16,23 62:24 65:7 66:1,7,12 67:3,12 69:24 70:5,16,25 71:11,18 73:4,16 74:9 75:13 110:16 116:18 145:22,23,25 146:1,23 150:4 151:9 152:7 154:20 155:13 156:2 157:18 158:3,13 163:22 206:5 208:17 209:14,24 211:5,18 212:16 233:14 263:16,17 264:22 272:7 301:23,24 313:3,5 316:14 Williamson 115:16 116:4,9,20,22 119:9,13 120:2 122:2 123:10 124:23 125:3,7,12,14 126:15 128:24 129:6 132:1,10	133:15 135:11,24 137:4 139:1 141:17,23 145:4,25 149:23 155:22,24 156:20 159:1,9 160:10 willing 69:18 283:6 win 296:22 wind 183:4 window 111:22,23 wing 167:22 winning 76:24 wipe 183:3 wiped 193:11 wire 24:11 Wiretap 139:19 wish 31:21 68:13 228:3 243:21 wishes 129:12 withdrawn 114:2 WITNESS 329:13 witnesses 70:6 WM 16:19 17:17 18:4 19:11 21:20 woman's 13:11 women 25:14 40:22 68:23,25 won 296:21 wonder 128:11 wonderful 287:5,11 316:13 317:24 wondering 138:25 235:18 Woody 31:12 work 6:24 9:19 13:14 15:8 23:2,12,18 26:15,22 30:21
---	--	---	--

34:15 35:11 45:9 48:12,13 50:7,24 52:24 54:3,5 55:21 58:25 62:17 68:15 69:13 73:18 81:14 92:5 95:12,20 101:20 103:18 114:11 122:11 125:1 133:7 141:7,11 142:6 152:2 156:9 179:13,14,18 183:11 186:1 187:7,24 193:9,17 196:24 199:3 200:20 201:25 205:9 211:23 225:16,25 229:2 231:25 237:12,14 240:22 242:2 243:15 244:14 246:12 256:20 260:9 264:14 267:20,21 269:3,4,12 272:6,21,22,24 279:15 284:12 288:25 289:1 290:6,8,21,25 291:4,8,11,16,24 292:8,12,13,25 296:17,18 306:12,23 310:5 321:22 workable 213:21 216:14 245:5 work-around 11:3 worked 21:20 48:17 172:9 278:16 290:14 workers 32:1,2,4 working 26:17 27:10 32:4,7 34:22 35:10	48:15 51:3 52:24,25 56:5 143:11,16 180:10 189:23 207:12 264:13 276:16 278:16 works 9:9 24:25 61:3 71:16 77:11 80:3,13 91:2 95:21 101:17 112:2 150:6 158:9 160:17 179:16 182:23 183:21 187:22 198:8 207:6 211:16 237:3 239:11 254:5,18 255:24 259:19 263:8,12,18 266:8,13,15 276:13 277:25 281:20 303:2 world 10:4 81:2 82:15 105:1 114:18 145:8 164:13,19,23 167:22 168:6 178:6 181:17 182:5 213:19 216:18 218:10 219:19 222:3 238:23 240:23 259:6 284:8 295:4 worlds 216:9 257:25 world's 280:6 worldwide 52:4 80:19 182:1 worried 141:1 worry 136:13,23 137:19 worst 182:24 worth 55:1 248:14 282:13,19 worthwhile	282:20 323:25 wound 37:5,7 wow 142:10 wrap 88:5,10 264:19 wrapp 276:11,14 302:2 wrapped 30:23 45:19 Wreck-It 175:5 write 33:21 35:1 242:25 268:21 291:6 write-down 275:11 writing 44:6 200:20 208:3 209:9 295:21 writings 15:18 written 5:14 16:11 33:18 39:23 102:4 162:18,21 273:23 303:9 wrong 12:16 wrote 187:23 275:23 <hr/> X <hr/> Xbox 178:15 215:12 222:9 268:17,18,24 273:23 274:9,14,16,23 275:8,9,20,24 276:3,10,12,14,1 9,24 277:12,23 278:15,18,23 279:8,13,20 281:12,20,23 284:21,22 285:18,19,21,24, 25 286:1 306:6,9,17,18,24 314:25 315:8,18 317:3,4 318:13	323:10 Xboxes 275:13 280:1,23 287:2 304:20 315:1 X-clamp 276:18 X-clamp-reflow 280:25 X-Men 80:16 <hr/> Y <hr/> yards 284:9 yellow 275:2,4 315:19 yellow-light-of-death 278:3 yesterday 69:17 72:16 92:21 136:1 137:6 yet 89:22 136:4 143:17 166:24 169:6,21 325:8 York 284:10 young 40:25 yourself 20:18 116:1,6 120:14 163:2 182:4 202:10 271:14,20 yourselves 5:24 Youth 33:23 34:2 35:21 37:13 YouTube 48:20 54:16 85:22 277:8 YouTubers 54:4 YTS 149:1
---	---	--	---