

LIBRARY OF CONGRESS

UNITED STATES COPYRIGHT ROYALTY JUDGES

The Library of Congress

-----X

IN THE MATTER OF:)

)

DETERMINATION OF ROYALTY) Docket No.

RATES AND TERMS FOR) 16-CRB-0001-SR/PSSR

TRANSMISSION OF SOUND) (2018-2022)

RECORDINGS BY SATELLITE)

RADIO AND "PREEXISTING")

SUBSCRIPTION SERVICES)

(SDARS III))

-----X

OPEN SESSIONS

Pages: 263 through 530 (with excerpts)

Place: Washington, D.C.

Date: April 20, 2017

HERITAGE REPORTING CORPORATION

Official Reporters

1220 L Street, N.W., Suite 206

Washington, D.C. 20005

(202) 628-4888

contracts@hrccourtreporters.com

1 UNITED STATES COPYRIGHT ROYALTY JUDGES

2 The Library of Congress

3 -----X

4 IN THE MATTER OF:)

5)

6 DETERMINATION OF ROYALTY) Docket No.

7 RATES AND TERMS FOR) 16-CRB-0001-SR/PSSR

8 TRANSMISSION OF SOUND) (2018-2022)

9 RECORDINGS BY SATELLITE)

10 RADIO AND "PREEXISTING")

11 SUBSCRIPTION SERVICES)

12 (SDARS III))

13 -----X

14 BEFORE: THE HONORABLE SUZANNE BARNETT

15 THE HONORABLE JESSE M. FEDER

16 THE HONORABLE DAVID R. STRICKLER

17

18 Library of Congress

19 Madison Building

20 101 Independence Avenue, S.E.

21 Washington, D.C.

22 April 20, 2017

23 9:08 a.m.

24 VOLUME II

25 Reported by: Karen Brynteson, RMR, CRR, FAPR

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

2 On behalf of SoundExchange, The American Federation
3 of Musicians of the United States and Canada, Screen
4 Actors Guild and American Federation of Television
5 and Radio Artists, American Association of
6 Independent Music, Universal Music Group, Warner
7 Music Group, RIAA:

8 DAVID A. HANDZO, ESQ.

9 STEVEN R. ENGLUND, ESQ.

10 JARED O. FREEDMAN, ESQ.

11 ALEX TREPP, ESQ.

12 KENDALL TURNER, ESQ.

13 DEVI RAO, ESQ.

14 SAM BIRNBAUM, ESQ.

15 PREVIN WARREN, ESQ.

16 Jenner & Block, LLP

17 1099 New York Avenue, N.W., Suite 900

18 Washington, D.C. 20001

19 202-639-6000

20 On behalf of Sony Music Entertainment:

21 ROLLIN A. RANSOM, ESQ.

22 PETER I. OSTROFF, ESQ.

23 Sidley Austin LLP

24 555 W. Fifth Street, Suite 4000

25 Los Angeles, CA 90013

1 APPEARANCES (Continued):
2 On behalf of Sirius XM Radio, Inc.:
3 R. BRUCE RICH, ESQ.
4 RANDI W. SINGER, ESQ.
5 TODD D. LARSON, ESQ.
6 JACOB EBIN, ESQ.
7 Weil, Gotshal & Manges LLP
8 767 Fifth Avenue
9 New York, New York 10153
10 212-310-8007
11
12 On behalf of Music Choice:
13 PAUL FAKLER, ESQ.
14 JOHN SULLIVAN, ESQ.
15 MARGARET WHEELER-FROTHINGHAM, ESQ.
16 Arent Fox LLP
17 1675 Broadway
18 New York, New York 10019-5874
19 212-484-3990
20
21 JACKSON TOOF, ESQ.
22 Arent Fox LLP
23 1717 K Street, N.W.
24 Washington, D.C. 20006
25 202-857-6395

1 APPEARANCES (Continued):
2 On behalf of GEO Music Group:
3 GEORGE JOHNSON
4 23 Music Square East
5 Suite 204
6 Nashville, TN 37203
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 (9:08 a.m.)

3 JUDGE BARNETT: Good morning. Please be
4 seated.

5 MR. RICH: May we resume with Professor
6 Shapiro or do you have preliminaries?

7 JUDGE BARNETT: You may after I apologize
8 for breaking my own rule and bringing coffee in this
9 morning. Before we begin, I'm going to defer to
10 Judge Feder for an announcement.

11 JUDGE FEDER: Just one bit of general
12 housekeeping which involves all filings with the
13 CRB. We have published this morning new regulations
14 at 82 Federal Register 18563, a set of rules that
15 will govern filing through our new electronic filing
16 system when that comes on-line in a couple of
17 months.

18 The regulations govern that -- the filing
19 through the electronic filing system. They also
20 govern other things related to the filing of
21 documents with the CRB, format, contents, file
22 formats for documents in electronic form. You're
23 all familiar with the fact that we have guidelines
24 for electronic documents. Those guidelines are now
25 regulations. So we've -- they're required. They're

1 not just suggested.

2 So I suggest you all download those
3 regulations from the Federal Register because, from
4 here on out, they will have to be complied with.

5 MR. RICH: Your Honors, for a brief
6 segment, we're going to go on a restricted record,
7 although the subject matter is subject matter that
8 involves data from Sirius XM, so there would be no
9 need for our client representatives to leave. There
10 will be a brief segment.

11 JUDGE BARNETT: Okay. Anyone who is in
12 the hearing room at this time who is not either
13 affiliated with Sirius XM or otherwise entitled to
14 hear confidential or restricted information, if you
15 would please wait outside. Thank you.

16 (Whereupon, the trial proceeded in
17 confidential session.)

18

19

20

21

22

23

24

25

1 O P E N S E S S I O N

2 BY MR. RICH:

3 Q. You mentioned, of course, the critical
4 issue of -- of, from slide 10 again, of how
5 informative these licenses are of the prospect of
6 steering, being driven by the prospect of steering.

7 Have you discussed Sirius XM's ability to
8 steer with one or more executives of the company?

9 A. Yes. I've spoken with Mr. White and
10 Mr. Blatter, and I'm also familiar with their
11 testimony in this matter.

12 Q. And what did you learn from those
13 discussions?

14 MR. RICH: And, for a point of reference
15 to the Court, that's recounted in Professor
16 Shapiro's written direct testimony at pages 40
17 through 41.

18 THE WITNESS: Right. So what I think is
19 perhaps most relevant on this is that Mr. White
20 describes that in his job about signing labels up to
21 direct licenses, that he -- his regular pitch
22 includes the benefit to a label of having improved
23 access, greater access to Sirius XM's programmers,
24 and this is a way that their -- to get their music
25 more familiar and played more on Sirius XM. And he

1 describes that in some -- in some detail in his
2 direct testimony.

3 And this fits with the point we made
4 earlier, which is labels of all types are routinely
5 contacting the programmers and trying to get their
6 music played more. And so this is part of the
7 normal way business goes on. And he's offering some
8 advantage to the labels to sign direct licenses on
9 this dimension.

10 BY MR. RICH:

11 Q. What did you learn from your discussions
12 with Mr. Blatter? Mr. Blatter is head of music
13 programming for the company, yes?

14 A. Right. So he's the one who then -- who
15 -- the programmers report to him. And so they're
16 the ones that have to actually implement this.

17 And -- and he -- he really -- I guess it
18 was probably more Mr. Blatter who talked about how
19 the programmers are inundated by the labels who want
20 their music played more.

21 And -- and so it really matters if -- if
22 a label is given some advantage in that respect over
23 another, that that's a real benefit. He was
24 describing the on-the-ground reality of the
25 interactions between programmers, Sirius XM

1 programmers, and the label representatives.

2 Q. In your binder t -- under the tab Trial
3 Exhibit 47, which I understand is in evidence, is
4 reproduced the written rebuttal testimony of
5 Glen Barros submitted on behalf of SoundExchange.
6 Do you have that in your binder?

7 A. Yes. Yes, I've got that now.

8 Q. Have you had occasion to review that
9 testimony?

10 A. Yes, I have. It's my understanding that
11 Mr. Barros is the only witness in this proceeding --

12 MR. HANDZO: I'm sorry. I actually think
13 Mr. Barros' testimony may be restricted.

14 MR. RICH: The portion we're going to
15 discuss -- would you like me to do a sidebar with
16 the Judges? The only portion we were going to call
17 out -- actually, we were going to put up sections on
18 a restricted-only record --

19 MR. HANDZO: Okay.

20 MR. RICH: -- of that piece of it. And
21 what we're going to testify about is not restricted.

22 MR. HANDZO: That's fine.

23 MR. RICH: Thank you. Thank you very
24 much for that.

25 MR. HANDZO: I just wanted to make sure

1 you're aware of that.

2 THE CLERK: 47 has not yet been admitted.

3 MR. RICH: Not yet been admitted?

4 JUDGE BARNETT: Right.

5 MR. RICH: Well, we'll offer it.

6 MR. HANDZO: I'll accept that offer.

7 JUDGE BARNETT: Exhibit 47 is now
8 admitted.

9 (Joint Exhibit Number 47 was marked and
10 received into evidence.)

11 MR. RICH: Thank you.

12 BY MR. RICH:

13 Q. You were saying.

14 A. Okay. So just so everybody, we know what
15 we're talking about here, Mr. Barros is the
16 president and CEO of Concord Music Group. Concord
17 is an independent label.

18 He describes it as one of the world's
19 leading independent music companies. They have
20 signed a direct license with Sirius XM. And part of
21 his testimony starting --

22 Q. Let me -- so this is not a narrative.
23 Let me put a question to you. My question was have
24 you reviewed it? And the answer was yes.

25 A. Oh, I apologize.

1 Q. And the predicate question, which I think
2 you were anticipating, was did you find anything of
3 relevance in that testimony to the subject of
4 incentive to sign a direct license to induce
5 steering?

6 A. Yes, I did. It's especially in paragraph
7 8, he addresses that.

8 Q. All right. So let's start, if we can
9 call up a non-restricted paragraph, which is 7, from
10 this document, please, and ask you to take a look at
11 7, which I think is the predicate to the paragraph
12 you have in mind.

13 A. Correct.

14 Q. It says there that -- he recounts that
15 Mr. White states that Concord's decision to sign a
16 direct -- that is Mr. White of Sirius XM, that is,
17 states that Concord's decision -- that is
18 Mr. Barros' company -- to sign a direct license
19 reflected our "belief that greater access to and
20 attention from Sirius XM's programming staff would
21 ultimately lead to increases in plays and therefore
22 royalties."

23 Do you see that?

24 A. Yes.

25 Q. Is that in your mind the essence of

1 steering?

2 A. Exactly.

3 Q. Okay. Now, you were about to testify,
4 let's put up on a restrictive record, please, not on
5 the public side, paragraph 8. All right.

6 And what is it about paragraph 8 -- and
7 there's the restricted part of paragraph 8. If you
8 need to read it, please don't read it into the
9 record, but if it's not, what about paragraph 8 do
10 you find of relevance?

11 A. So I guess I would point first to the
12 second sentence where he acknowledges that -- I'll
13 just read that part -- we took the potential
14 benefits of a direct license outlined by Mr. White
15 into consideration. And then he goes on to say,
16 there are some other considerations that were more
17 important, in his view. And I'm not going to talk
18 about those because that looks like it's restricted.
19 But this part that I did read is directly relevant
20 to the type of inquiry that I think is critical
21 here.

22 And let me say, just to be clear, because
23 of the other benefits he's talking about, I
24 acknowledge -- completely accept and understand
25 there are other benefits. In my view, the -- the

1 question I'm asking, and I think it's the right
2 question, is was the prospect of additional plays a
3 significant benefit to the label?

4 And that, of course, can be true, even if
5 there were other benefits from the direct license.
6 And he points to other benefits. And I'm not
7 disputing that, what he's saying. I'm not taking
8 issue with him on that.

9 Q. Now, Mr. Orszag -- we're done with that
10 document. Thank you.

11 Mr. Orszag expresses great skepticism
12 that steering was an important element to labels
13 signing direct licenses because Sirius XM hasn't put
14 forward quantitative evidence that it has actually
15 engaged in steering. That's in his written direct
16 testimony, paragraph 35.

17 Are you familiar with that assertion?

18 A. I am.

19 Q. How do you respond to that criticism?

20 A. Well, Mr. Barros' testimony speaks for
21 itself here to me. I mean, he is, as I was saying
22 before, I believe, the -- the only label signing a
23 direct license who's testifying here. And he's
24 acknowledging that steering was a benefit.

25 So I think that's -- I put weight on

1 that. And I think Mr. Orszag seems to be dismissing
2 it.

3 Q. Have you done any quantitative analysis
4 to see what it would take for Sirius XM to steer
5 towards a major label?

6 A. Yes, I have.

7 Q. Let's -- let's take a look at Table 2 of
8 your written direct testimony at page 40. Can you
9 tell us if that reflects the work you did?

10 A. Let me just get there. Right. I think
11 they're pulling that up now. This is -- yes, this
12 is what I -- I did this.

13 Q. Could you describe -- could you describe
14 what that depicts?

15 A. Okay. So this is looking, as the title
16 of the table indicates, daily plays on the Hits 1
17 channel with and without steering to Warner.

18 So what we did is we took a particular
19 channel, Hits 1, a popular channel on Sirius XM, and
20 just looked at their actual plays per day on that
21 channel, what they're actually spinning. And that's
22 the first column, plays per day, no steering.

23 Broken out by label. So if you look at
24 that first column at the bottom, you can see they
25 played 389 songs, performances per day. And that's

1 broken out into the different -- different labels in
2 kind of what you would expect. Universal is the
3 most, and then Sony, among the Majors, then Warner,
4 and independents are there as well.

5 So all we did was ask how would that
6 lineup over the course of a day change if Sirius XM
7 were to steer 15 percent toward Warner? Well, if
8 you take Warner, starting at 55 plays a day,
9 15 percent of that is about 8 more plays. That's
10 the right-hand column, the 8.

11 And you take the 55, you add 8, you get
12 63. So they've got -- if they were to do that, they
13 would have to increase the Warner plays from 55 a
14 day to 63. And then I just assumed that the other
15 labels' plays were reduced proportionate to -- to
16 their spins. And those are the minus 3, minus 3,
17 minus 2 in the right-hand column.

18 So the result of that is the middle
19 column. That is the -- or maybe the right-hand
20 column, whichever one you find more helpful. How
21 should it put it? The -- this is the change in the
22 music mix that would occur, okay? And I'm -- I'm
23 just illustrating that on this one channel.

24 It's not dramatic, I would think -- I
25 would say, in terms of the -- what this channel is

1 actually playing or how listeners would perceive it,
2 but that's perhaps in the eye of the beholder. Here
3 are the numbers of what would be involved.

4 JUDGE STRICKLER: Just -- just so I am
5 clear, this is -- this is an explanation of how much
6 would have to be changed in order to accommodate the
7 15 percent steering towards Warner, but this was not
8 actually done by -- by Sirius XM on -- on its Hits 1
9 station?

10 THE WITNESS: That's correct. This is an
11 illustration of what they would have to do. Another
12 way to put it, once every three hours, they'd have
13 to play one more Warner song.

14 JUDGE STRICKLER: If it had actually been
15 done and you measured the impact, lack of impact on
16 listening, then it would have been analogous in some
17 way to the Pandora experiments from Web IV?

18 THE WITNESS: That's exactly right. And
19 I -- that's probably why I picked 15 percent here,
20 because that's what we did in Pandora. But, no, we
21 -- we did not run the experiment. This is an
22 illustration of what would be required --

23 BY MR. RICH:

24 Q. What information --

25 THE WITNESS: -- to introduce steering.

1 BY MR. RICH:

2 Q. Pardon me. What information of relevance
3 to the Judges do you believe this conveys?

4 A. I think what I said a few minutes ago is
5 really the bottom line. If you think about
6 15 percent steering, say, it would mean on this
7 channel playing one more Warner song every three
8 hours and displacing other music. That's the extent
9 of it. That's what we're talking about in
10 quantities.

11 Q. Now, you earlier said that one of the
12 crux issues in evaluating the probative value of the
13 direct license benchmark is the so-called shadow of
14 the statutory license or the statutory overhang. It
15 has been denominated in various ways in various
16 proceedings.

17 Am I correct?

18 A. Yes, the shadow is shadowing us.

19 Q. Yes. And Professor Lys criticizes your
20 direct license benchmark on the basis that the very
21 presence of the statutory license deprives the rates
22 negotiated between Sirius XM and record labels of
23 any validity as indicia of competitive market
24 pricing.

25 Are you familiar with that criticism?

1 A. Yes. And if I could have the folks put
2 up slide 10 for the demonstratives again, while I'm
3 answering, yeah, I am familiar with that criticism.
4 This is addressed at the third main bullet point
5 here.

6 Q. And what -- what do you understand the
7 essence of Professor Lys's criticism or the basis of
8 it to be?

9 A. He -- as I understand him, he is saying
10 that we observe over time that as the statutory rate
11 went up, the direct license rates went up pretty
12 much in parallel over time. And he, again, as I
13 understand it, is saying that tells us that the
14 shadow is such a powerful force that this is --
15 these licenses are uninformative for the purpose of
16 rate setting.

17 Q. I gather you disagree?

18 A. I do.

19 Q. Please explain why.

20 A. So, first, there's no dispute as a
21 factual matter that the direct license rates have
22 tracked the statutory rate as it has gone up over
23 time, you know, from 9 to 11 percent over the past
24 four or five years. That's true.

25 The question is what to make of that.

1 Okay? And my argument, my point, is that suppose,
2 just assume for a moment, that what's going on in --
3 in the direct licenses is steering, that each of the
4 independent labels says, all right, I'm willing to
5 set a lower rate than the statutory rate in order to
6 get more plays.

7 And they're bargaining with Sirius XM
8 over that or at least accepting Sirius XM's terms.
9 The rate they're willing to offer will be higher --
10 the rate the label is willing to offer in a direct
11 license will be higher if the statutory rate is
12 higher because from the label's point of view --
13 I'll be the label. I say: Look, statutory rate is
14 11 percent, I'll take 9 and a half, I will take one
15 and a half less than that to get me a certain number
16 of extra plays.

17 Well, it was pretty much the same
18 analysis when the statutory was 9. I'd say fine,
19 I'll take one and a half less than that to get more
20 plays. So we would expect that gap between the two
21 to stay pretty constant, and so the direct license
22 rate would track up with the statutory rate, if
23 steering was driving things.

24 Now, it's also true if steering had
25 nothing to do with it and this was just -- the label

1 was simply saying, look, I'm going to avoid the
2 SoundExchange administrative fee, so I'll sign a
3 direct license, again the direct license rate would
4 track the statutory rate over time.

5 So the fact that they track each other
6 does not help us answer the question is steering
7 important. And that's, I think, where Professor Lys
8 and I part company on this. He seems to be saying:
9 The tracking means we should throw out these direct
10 licenses. They're not informative. And I'm saying:
11 No, the tracking is neither here nor there. We have
12 to actually look and see whether steering was
13 important. And that's what I do.

14 Q. And you tested -- you tested that and you
15 examined that in Appendix E to your written direct
16 testimony; is that correct?

17 A. That's correct. So everything I just
18 said is worked out in equation -- we've heard this
19 before -- in Appendix E to my direct -- this is the
20 direct, yeah -- to the direct testimony which is
21 called the magnet effect of the statutory license.

22 Q. And by "magnet effect," you mean?

23 A. I mean as the statutory license goes up,
24 it's going to pull up the direct license rate that
25 results from steering.

1 Q. But that's not the ultimate point of
2 Appendix E, is it? What is the proposition Appendix
3 E proves?

4 A. Well, it also shows that the discount
5 between the statutory rate and the direct license
6 rate is going to depend on the amount of steering
7 that goes on, that is going to go on as between --
8 that the -- excuse me, that the direct licensing
9 label will get as a result of signing the direct
10 license.

11 Q. So just to unpack this a bit, is the
12 essence of your conclusion that, in fact, you can
13 still have rates that although they -- direct
14 license rates, that although they track the
15 statutory license, can be informative of steering if
16 those rates at levels below the statutory license
17 are the product of steering?

18 A. Yes. Let me put it --

19 Q. Put it in more elegant terms, please.

20 A. Okay. So the direct license rates track
21 the statutory rate with a gap of about a percentage,
22 percentage and a half. That is what we would expect
23 if they were the result of steering. And we have
24 evidence that steering is a significant factor for a
25 good number of the -- well, we have some inferences

1 and we have Mr. Barros' testimony.

2 Putting all that together, the direct
3 licenses are informative regarding competitive
4 rates, and the fact that they track the statutory
5 license does not undermine that conclusion.

6 Q. At page 48 of your written direct
7 testimony, you've put together the threads of your
8 direct license analysis in formulating the benchmark
9 rate that you recommend to the Judges.

10 Can you describe how you got to the
11 number and what that ultimate number is?

12 A. Okay. So -- well, Demonstrative 10 goes
13 -- explains that the -- the statutory rate that is
14 applied by these direct licenses is 9.87 percent.
15 And that's one of the things we mentioned right at
16 the outset of my testimony. So page 48 of my
17 direct -- written direct testimony explains how that
18 number is derived.

19 And, basically, I take the 9.42 percent
20 figure for the weighted average of the direct
21 license rates in 2016 --

22 Q. And that's the number that appears on
23 slide 11?

24 A. That's the number that appears on slide
25 11 and also on Table 1 of page 37 of the direct

1 testimony.

2 Q. Thank you.

3 JUDGE STRICKLER: That's also the one
4 that you said you would need to talk with your
5 colleague about during the break?

6 THE WITNESS: Exactly, yes, that's right.
7 And -- and it then recognizes that a non-statutory
8 benefit of the direct license is that the Sirius XM
9 does not take an administrative fee, but
10 SoundExchange does take an administrative fee of
11 4.6 percent.

12 And when that adjustment is made --
13 that's in footnote 72 on page 48. The -- so
14 accounting for that, the corresponding statutory
15 rate would not be 9.42 percent; it's 9.87 percent.
16 That's the calculation.

17 BY MR. RICH:

18 Q. Am I correct that as far as that analysis
19 goes, that would be the product of assuming that the
20 rates are the product of a willing buyer/willing
21 seller relationship in an effectively competitive
22 market? In other words, not yet applying any 801(b)
23 factors to that point? Or is that -- is that not
24 how you think about it?

25 A. No, I think the -- I would think about

1 this as would tend to include the 801(b) factors to
2 the extent that the statutory rate of 11 percent or
3 this year does so.

4 Q. Thank you. We're now going to move to
5 the third and final methodology you employed for
6 recommending rates, which is based on the rate
7 determined in Web IV to be applicable to statutory
8 transmissions by subscription non-interactive
9 services. We can turn to slide 12, which is a
10 summary of the key points you'll be developing.

11 MR. RICH: For Your Honors' information,
12 this material is covered in Professor Shapiro's
13 written direct testimony at pages 49 through 57.

14 BY MR. RICH:

15 Q. Let me begin by asking you, sir, what
16 commends that rate, meaning the Web IV rate of .22
17 cents per subscriber, to benchmarking for the
18 satellite radio rate to be set here?

19 A. So the Web IV rate is itself the product
20 of various market agreements for -- well, involves
21 in part the Pandora/Merlin agreement that underlay
22 that rate; of course, the rate for subscription
23 webcasting and then some other market agreements,
24 interactive services, that Professor Rubinfeld used,
25 and the Judges then put all that together and came

1 up with the Web IV rate. And we're now talking
2 about the Web IV rate for subscription webcasters.

3 JUDGE STRICKLER: Professor Shapiro, a
4 couple of times you've made mention of Web IV and
5 the Pandora/Merlin agreement and Professor
6 Rubinfeld's approach with adjustments.

7 There was also evidence in that case
8 about the agreement -- of the agreement between
9 iHeart and Warner. Were you informed by that at all
10 in your analysis in this proceeding?

11 THE WITNESS: I've -- in my mind, Judge
12 Strickler, at least, that was more relevant for the
13 ad-supported rate, not the subscription rate. I
14 would -- I can double-check, but that's what I
15 think, sitting here.

16 JUDGE STRICKLER: Thank you.

17 BY MR. RICH:

18 Q. As a preliminary matter, we often tick
19 through the list of similarity of buyers, sellers,
20 rights, et cetera. How do those align in your
21 estimation in this benchmark exercise?

22 A. Okay. So I guess I skipped over that.
23 So thank you.

24 So I would say -- so the -- if we compare
25 the buyers and sellers, we have the same sellers,

1 the record companies; a different buyer here, we
2 have satellite radio rather than web casters. We're
3 talking subscription services either way.

4 And then the bundle of rights is -- is
5 very similar; these -- these statutory rights for
6 non-interactive performances. So we've got a good
7 alignment with the only real difference there being
8 the buyer being a bit different or different to some
9 degree.

10 Q. And as we'll get to and as you get to in
11 your written testimony, you measure across relevant
12 dimensions potentially significant differences,
13 correct, between those buyers? That is, between --
14 let me say between a non-interactive subscription
15 service and -- and Sirius XM?

16 A. Well, we do look at differences as we go
17 through this.

18 Q. Yes.

19 A. Yeah.

20 Q. Yes, okay. So now let's move right to --
21 with reference to slide 13.

22 A. Okay.

23 Q. Let's move to how you physically went
24 about calculating the appropriate rate for Sirius XM
25 from this benchmark. And that's covered in your

1 written direct testimony beginning at page 51
2 through 55, although not all of that is devoted
3 simply to this calculation.

4 A. Okay. So this is just to explain what I
5 actually did to get the number.

6 Q. Right.

7 A. So we took the -- I took the Web IV rate
8 for subscription services, which is .22 cents per
9 play, and then I took that and I needed to calculate
10 how many performances per month Sirius XM makes, per
11 subscriber per month, excuse me, in order to convert
12 that into a per-subscriber figure.

13 So I did some work to determine that
14 there were 469 performances per sub per month on
15 Sirius XM. I then multiplied the .22 cents per
16 performance times 469 performances per sub per
17 month, and that gives \$1.03 per sub per month,
18 meaning if Sirius XM pays the same amount for
19 performance that subscription webcasters pay, that
20 would amount to \$1.03 per subscriber per month. And
21 that's really the -- that's all there is to this,
22 this calculation.

23 The other step is to convert that into a
24 percentage of revenue because that's the rate
25 structure that I'm looking at here. And that then

1 depends on the ARPU. At an ARPU of \$10.72, the
2 \$1.03, simply divided it into 10.72, is 9.6 percent
3 of revenue. And I just note here that if you had a
4 higher ARPU, the corresponding percentage of revenue
5 would be smaller, as I think we talked about
6 yesterday.

7 What I'm telling the Judges is if you
8 accept the \$1.03 per sub per month number when you
9 ultimately determine the revenue base, then you will
10 immediately get a percentage-of-revenue rate
11 corresponding to the \$1.03.

12 Q. And I think as you testified yesterday,
13 when you prepared your written direct testimony, you
14 used a somewhat higher 12 dollars and change ARPU
15 number based on information available, which is what
16 led you to propose a rate in the range of 8 percent.
17 Is that correct?

18 A. That's right. If you take the \$1.03 and
19 divide it by a larger ARPU number that I had from
20 some Sirius XM financials, which was \$12.80, you'd
21 get a lower percentage. But, again, that's not the
22 key here. The key is \$1.03, and then you convert it
23 into a percentage once the revenue base has been
24 determined.

25 Q. So how do the 801(b) factors come into

1 play with this benchmark?

2 JUDGE STRICKLER: Before you get to that,
3 can we stay on this?

4 MR. RICH: Sure.

5 JUDGE STRICKLER: Excuse me, counsel.
6 Professor Shapiro, so you've taken a Web IV rate,
7 which is the .022 performance, and that's a
8 non-interactive services rate, which is, among other
9 things, a portable service, people can take it with
10 them and so they can listen and have as many
11 performances as they -- they can when they go
12 throughout the day.

13 Whereas the performances on Sirius XM,
14 and correct me if you disagree with this assumption
15 or the previous one, are mainly in the car.

16 THE WITNESS: The lion's share, yes, are
17 in the car.

18 JUDGE STRICKLER: That I understand is a
19 criticism of this type of calculation. And that is
20 then when you're multiplying .022 by 469, there's
21 sort of an apples to oranges problem here that the
22 rate is based on -- on a service that's going to
23 have a lot of performances, if you will, per month;
24 whereas there's a limiting factor on the number of
25 performances in Sirius XM because it's listened to

1 mainly in the car.

2 So the 4.69 multiplied by the .0022 is
3 somehow not appropriate. Are you aware of that
4 criticism?

5 THE WITNESS: Yes, I am.

6 JUDGE STRICKLER: How do you respond?

7 THE WITNESS: Well, my first response is
8 that -- let me see. There's a lot -- there's many
9 things coming into my mind. So I want to get this
10 in the right order.

11 First, we can ask ourselves why should a
12 Service that has many fewer performances per month
13 pay the same amount per month to record companies as
14 a Service that has more? Because built into that
15 logic was the intensity of use should not matter.
16 The record companies, I guess by this argument,
17 should get the same amount of money regardless of
18 how much their music is played. So I don't really
19 see why that is convincing to start with.

20 The second thing I'll say -- and we're
21 going to come back to this, I think, at different
22 times, and I'm happy to take as long as you want
23 right now, Your Honor. But the second thing is I
24 think about cost and -- opportunity cost, we -- all
25 the experts agree that's the key driver of rates or

1 a key driver. And so as I was -- as I emphasized
2 yesterday, the quantity and the units to be measured
3 are number of songs. Okay? That's what the record
4 companies are selling. They're selling music,
5 licensing, and being compensated, actually, based on
6 how much their music is played. That's the
7 quantity.

8 The marginal cost, the opportunity cost,
9 is associated with extra plays. And so I'm doing
10 everything based on plays because that's how the
11 underlying economics works. The units are
12 performances. And everybody is -- everybody is
13 compensated in this industry based on how much their
14 music is played. That's not in dispute. Every
15 record company is compensated based on how much
16 their music is played.

17 So to me it -- it follows the underlying
18 economics is about that the quantities and the units
19 in the market we're talking about, mainly the
20 licensing of music to these Services, are number of
21 performances.

22 JUDGE BARNETT: I think earlier in your
23 testimony, you said the thing to be measured is
24 number of songs. Did you mean to say number of
25 plays or usage of those songs? Because, I mean, if

1 we're basing it solely on the size of the catalogue
2 of each of the --

3 THE WITNESS: Oh, okay. I was using the
4 term -- I meant to say number of performances.

5 JUDGE BARNETT: Performances. Okay.

6 THE WITNESS: When I said song, I meant
7 it in that sense, not the number of items in the
8 repertoire.

9 JUDGE BARNETT: Thank you.

10 THE WITNESS: So that's what I meant.

11 JUDGE STRICKLER: And making the
12 nomenclature more difficult at least in my own mind,
13 from songs to performances, are you talking about
14 number of performances or number of plays?

15 THE WITNESS: I'm using the term
16 "performances" and "plays" synonymously. Is that a
17 mistake?

18 JUDGE STRICKLER: Well, I guess if we --
19 in another context, it might be when you're
20 distinguishing between the direct licenses and the
21 plays on -- or the spins on Sirius XM.

22 THE WITNESS: Oh, okay, good. So I -- I
23 mean the -- thank you very much.

24 I mean the number of -- by a performance,
25 one play of one song listened to by one person.

1 Okay? Those are the quantities. These are the same
2 quantities Professor Willig, for example, uses in
3 his regressions to talk about substitution between
4 different Services.

5 These are -- this is the number that
6 ultimately is going to determine the compensation to
7 the record companies, because record companies get a
8 pro rata payment. So that's going to depend on how
9 many times their music is played compared to others,
10 and it's going to depend on how many people are
11 listening, the number of subscribers.

12 So -- so I'm always meaning, by a
13 performance one -- the play of one song once to one
14 listener.

15 JUDGE STRICKLER: Thank you.

16 BY MR. RICH:

17 Q. The question I was about to pose to you
18 was how application of the 801(b) factors works in
19 relation to this benchmarking approach?

20 A. Okay. So this benchmarking approach
21 would derive for us a willing buyer/willing seller
22 rate for Sirius XM. And then we need to consider
23 whether modifications of that rate are called for,
24 to the extent that the 801(b) factors differed from
25 a willing buyer/willing seller rate. So that would

1 need to be done in addition to whatever I do here
2 through this benchmarking exercise.

3 Q. And have you undertaken that analysis?

4 A. Yes, I discuss that in my written direct
5 testimony. In the end, I'm not making adjust --
6 modifications on that basis, but I discuss it in the
7 written testimony.

8 MR. RICH: And for Your Honors'
9 information, that appears at pages 57 through 59 of
10 that testimony.

11 BY MR. RICH:

12 Q. Now, beginning at page 55, sir, of your
13 written direct testimony, you considered two
14 possible adjustments for this benchmark to reflect
15 the different buyers involved. And if we could look
16 at slide 14 in connection with that, please.

17 Am I correct?

18 A. Yes, that's right.

19 Q. Can you describe what adjustments you
20 determined to be appropriate to investigate?

21 A. Yes. So there's a possible steering and
22 then substitution/promotion differences.

23 Q. What's the theory of this? It looks a
24 lot -- if I'm educable, this looks a lot like Lerner
25 equation issues.

1 A. Mr. Rich, you're learning. So, yes, the
2 theory is going back to the Lerner equation, which,
3 again, teaches that the price, the rate for music to
4 a given type of buyer will depend on the record
5 companies' cost, opportunity cost. And that's the
6 second point here, substitution/promotion.

7 And also how sensitive their -- their use
8 of the music is to the price. And that's the
9 steering factor.

10 Q. Okay.

11 A. So we're going back to the underlying
12 economics, the two forces, and seeing whether we
13 need to make an adjustment, whether there's a
14 difference one way or another between subscription
15 webcasters on the one hand, where we've got the .22
16 per play, and Sirius XM, which is our target under
17 the benchmarking exercise.

18 Q. Can you walk the Court through, first,
19 beginning with the first of these, which is any --
20 any cognizable differences in steering ability, what
21 analysis you performed and what you concluded?
22 That's at pages 56 to 57 of your written direct
23 testimony.

24 A. So there I indicate that there are some
25 reasons to believe Sirius XM can steer to a greater

1 degree than -- degree than webcasters and some other
2 reasons to believe the opposite. And I don't think
3 it's clear either direction. And I don't make any
4 adjustment on this basis of steering for that
5 reason.

6 Q. And with respect to substitution and
7 promotion, what analysis did you perform and what
8 conclusions did you reach there?

9 A. Well, this is a more involved -- well,
10 somewhat more involved work on my part. I -- the
11 analysis here, which is on page 55 to 56 of my
12 written direct testimony, I conclude that the
13 opportunity cost to a record company of licensing to
14 Sirius XM is lower than the opportunity cost of
15 licensing to subscription webcasters and, therefore,
16 if one were to make this type of --

17 Q. Pardon me.

18 A. Oh, I'm sorry.

19 Q. Just again, we're using shorthand.
20 Non-interactive, we're talking here, right? When
21 you saw subscription webcasters, you mean like a
22 Pandora operating under a statutory license?

23 A. Yes.

24 Q. Thank you.

25 A. So I'm using the term "webcaster" to mean

1 non-statutory as distinct from interactive services.

2 Q. Thank you.

3 A. Or Internet radio --

4 Q. Thank you.

5 A. Okay. So the -- this
6 substitution/promotion or opportunity cost, if
7 anything here --

8 Q. I stepped on your lines. Could you
9 restate your conclusion, please? Thank you.

10 A. The conclusion is -- it's shown here on
11 slide 14 as well, of the demonstratives today -- the
12 opportunity cost to a record company of licensing to
13 Sirius XM is lower than licensing to a subscription
14 non-interactive service; and, therefore, if one were
15 to adjust from the Web IV rates on this basis for
16 Sirius XM, it would be a downward adjustment. I
17 don't make that adjustment.

18 Q. How did you come to the conclusion that
19 the opportunity cost to a record company licensing
20 Sirius XM is lower than it would be, for example, of
21 having its music played on a statutorily compliant
22 subscription webcaster?

23 A. Okay. So --

24 Q. I suspect there's another appendix.

25 A. So, as indicated on page 55 of my written

1 direct testimony, I worked this out in some detail
2 in Appendix D to my written direct testimony. The
3 demonstrative here is not quite right. It's written
4 direct testimony Appendix D, not C.

5 Q. Thank you, that's a typo.

6 A. Yes. And then I go into this in --
7 well -- and it turns out Professor Willig's written
8 direct testimony, his Table 2, also does the same
9 type of exercise in his way. And that's relative --

10 Q. Let's come back to that. Let's stay with
11 your own analysis first.

12 A. Right. So let me just then comment. So
13 the -- this gets us back into the -- some of the
14 details necessarily of what underlies the
15 opportunity cost. So we had a discussion of that
16 yesterday.

17 This is what Appendix D goes through in
18 detail. So let me just -- I need to summarize that
19 again to explain how it's applied here. So let's
20 just talk about what's the opportunity cost to a
21 record company of having -- of licensing -- of
22 having its music played more on Sirius XM. And then
23 we -- then we compare that to a subscription
24 webcaster.

25 So, again, we're asking if Sirius XM

1 plays more Warner music, to what extent does that
2 take away from Warner's other revenues? That's what
3 we're asking.

4 And the appendix here shows that we
5 always need to be thinking about, there's steering
6 upstream shifting, and then there's possibly
7 downstream consumer moving around, shifting as well.
8 So we have upstream steering and then downstream
9 consumer substitution.

10 Both of those come into this calculation
11 of opportunity cost. The upstream -- so let's first
12 say just if Sirius just pays -- plays more Warner
13 music, and it doesn't have any effect on subscribers
14 moving around, there's zero opportunity cost. That
15 doesn't hurt Warner in any other way. It's pure
16 gravy for Warner.

17 So that, we talked about that yesterday.
18 So the only part of what we need to get into
19 downstream substitution is if the additional plays
20 of Warner music or availability of Warner music on
21 Sirius XM cause Sirius XM to get more subscribers
22 and that pulls away from people who would otherwise,
23 say, use Spotify and, therefore, that hurts Warner.

24 The same -- everything logic I just went
25 through is the same for a subscription webcaster.

1 So most of the action is the upstream steering in
2 terms of opportunity cost and most of the action in
3 terms of Warner getting more plays, in either case
4 is upstream steering. And there's no opportunity
5 cost associated with that.

6 So if we're looking at differences
7 between the two, which is all I need to do here now,
8 I'm looking at differences between those, we can
9 look at the downstream level and see -- look at the
10 consumer substitution patterns there.

11 Q. And does your -- does your table of D-5
12 -- D-5, pardon me -- explore that issue a bit?

13 A. So that's what I do on page D-5, table
14 D.1, in my written direct testimony. And I'm
15 relying here on Joe -- the survey conducted by
16 Joe Lenski for data about those downstream consumer
17 substitution patterns. If they listen more to
18 Sirius XM, what do the consumers listen less to? So
19 it's exactly that type of substitution.

20 And, again, all of -- the focus very much
21 here is on comparing Sirius XM with a subscription
22 webcaster, which is Pandora in this survey, since
23 that's primarily Pandora I.

24 Q. And what does the data that you derive
25 from Mr. Lenski's survey tell you and how does it

1 inform the benchmarking?

2 A. So just to indicate what is reported
3 here, this is straight from his survey, these
4 numbers. So, for example -- and the first row is
5 actually the key row.

6 Q. Highlight that, please, the AM/FM radio
7 row.

8 A. When people listen more to Sirius XM,
9 where is that -- where is that time coming from?
10 Allocation of time from Sirius XM to the -- let me
11 say it differently.

12 If people are listening less to Sirius
13 XM, where would they allocate that time to? So
14 that's the way he's looking at substitution.

15 So if they're allocating time from Sirius
16 XM, that's the right-hand column, you can see that
17 40.8 percent of their time would be allocated to
18 AM/FM radio. While with Pandora it's considerably
19 less. It's 24 percent. Okay.

20 This is consistent with what we talked
21 about earlier, which is since Sirius XM listening is
22 so much in the car, it's substituting closely,
23 particularly closely for terrestrial radio.

24 The second line is also important.
25 SoundExchange and Professor Willig especially

1 emphasize how costly it is for a record company if
2 they lose revenues from interactive streaming such
3 as Spotify because that's so lucrative for them.
4 And so here we see that Sirius XM is substituting
5 less for interactive streaming than Pandora.

6 So Sirius XM is substituting more for
7 something, terrestrial radio, where the record
8 companies don't get any money, and less for
9 interactive streaming, which the record companies
10 make a lot of money. And then you continue that for
11 all the other Services, but the first two rows are
12 what's driving things.

13 And you follow that logic through in a
14 very similar way to what Professor Willig does. And
15 it implies that additional listening on Sirius XM is
16 not as costly for the record companies as additional
17 listening on Pandora I or Plus.

18 Q. Now --

19 A. So that's exactly the opportunity cost
20 comparison that I said I needed to make to see
21 whether we'd need an adjustment from the Web IV
22 rate.

23 Q. So, if anything, the adjustment would be
24 in Sirius XM's favor, but I take it you've testified
25 you did not attempt to make such an adjustment?

1 A. Well, that's right. I did not make such
2 an adjustment.

3 Q. Now, notwithstanding your repeated
4 references to Professor Willig, I take it he
5 criticizes your reliance on Mr. Lenski's survey
6 data, correct?

7 A. He does, and we heard some that of that
8 in Mr. Handzo's opening. They are -- it is
9 different from the Dhar survey on which Professor
10 Willig relies.

11 Q. With respect to this particular analysis,
12 which is the comparative analysis of opportunity
13 costs of a record label licensing Sirius XM versus a
14 subscription webcaster, did you find anything in
15 Professor Willig's testimony of assistance to the
16 Judges?

17 A. Yes, I did.

18 Q. For this purpose, if we could call up on
19 a restricted record, Table 2 of Professor Willig's
20 written direct testimony. Just give it a second.
21 Can you blow that up, please?

22 A. Yeah, it's hard to see right now, so--

23 Q. And if you feel the need to call out any
24 -- I know you're going to run through what's
25 restricted and what isn't on our understanding and

1 counsel for SoundExchange can correct us, but if you
2 feel you need to call out any data, we will
3 appropriately limit the discussion.

4 MR. HANDZO: Sorry to interrupt. Since I
5 don't have it on the screen, I'm just not sure what
6 you're looking at.

7 MR. RICH: Oh, it's Table 2 from
8 Professor Willig's written direct testimony. Do we
9 have a page number on that handy?

10 MR. HANDZO: Great, thank you.

11 MR. RICH: Thank you. Do Your Honors
12 have it on your screen?

13 JUDGE BARNETT: Yes.

14 BY MR. RICH:

15 Q. You can proceed. Can you describe what
16 Table 2 predicts?

17 A. So this is Professor Willig's analysis of
18 the opportunity cost to a record company -- to
19 record companies when there's additional listening
20 of subscribers on -- the first group, either on
21 Sirius XM, on paid interactive, or on not paid
22 non-interactive.

23 So for each type of service, he's
24 calculating the opportunity cost, which he calls
25 creator and compensation cannibalization. And this

1 is all based on the Dhar survey results.

2 Q. Okay. And I take it the -- your analysis
3 of this that follows will accept, for discussion
4 purposes, the validity of the Dhar results.

5 Do you generally accept the validity of
6 those results?

7 A. I don't offer an opinion on the -- the
8 different surveys experts. I have relied on
9 Mr. Lenski for -- for this point we're making right
10 now. And later actually when we talk about my views
11 on Professor Willig's testimony, I'm going to just
12 accept the Dhar survey numbers, but I'm not offering
13 an opinion on the battle among the survey experts.

14 Q. For present purposes, that is, retaining
15 the focus of this segment of the discussion on the
16 comparative opportunity costs determined for a
17 record company licensing Sirius XM versus a
18 subscription webcaster, does any of the data on
19 Table 2 of Mr. Willig's analysis drawing on the Dhar
20 survey inform that conclusion?

21 A. Yes, very much so. Let me add to my
22 previous answer, the implication is what I'm going
23 through here holds up whether the Judges ultimately
24 accept the Lenski or the Dhar survey results.

25 The -- my conclusion here, that is

1 there's no adjustment needed or if one were made it
2 would be downward, holds whichever survey results
3 the Judges decide are more convincing or if they do
4 maybe some combination.

5 So then to answer your question,
6 Professor Willig in this table also compares the
7 opportunity cost to record companies of Sirius XM
8 listening versus paid non-interactive, what I've
9 been calling subscription webcasting. So that is --
10 the numbers that have now been highlighted.

11 Q. Let me pause and just let Mr. Handzo have
12 the benefit, since he has a blank screen.

13 A. Oh, thank you. Good point.

14 Q. Thank you.

15 A. So let me just say if you look at the
16 first highlighted number, the one towards the middle
17 of the screen, that column, what it says is creator
18 compensation weighted, Professor Willig is doing in
19 that column conceptually the same thing I was doing
20 in the table based on the Lenski survey that I
21 showed you earlier, where I talk about AM/FM radio
22 and interactive services. It's the same thing. The
23 rows are different ways of listening, and then we're
24 adding up substitution for lost revenue from losing
25 listening on each of those types.

1 So he's doing conceptually the same
2 thing. And I want to emphasize the total weighted
3 average number there at the bottom, without getting
4 into the components of that. So that's the first
5 highlighted number. So that's his estimate.

6 And you are going to hear a lot about
7 this when he testifies, I guess. But that's his
8 estimate of when there is one more Sirius XM
9 subscriber, that's the cost, he says, to the record
10 industry due to lost revenue from other forms of
11 listening. Okay? So that's opportunity cost, the
12 forgone revenue.

13 Q. That's on the -- that's the estimate on
14 the Sirius XM side of the ledger?

15 A. Yes. So, again, if one more Sirius XM
16 listener, he comes up with that number, the
17 highlighted number, so it's per subscriber per month
18 is how he's doing this.

19 And then in the right-hand -- the far
20 right-hand side, he does exactly the same thing, but
21 now it's paid non-interactive. So that's basically
22 the -- again, what I've been calling subscription
23 webcasters, which is underlying my benchmark rate.
24 And notice that the number on the right is larger,
25 okay? Significantly larger, actually.

1 So that is getting the same result I got,
2 namely, the opportunity cost to the record -- to a
3 record company, he does it for the whole industry,
4 of licensing to Sirius XM is less than licensing to
5 subscription webcasters. So that confirms that
6 finding or has the same direction.

7 And that's why I said whether you --
8 whichever survey result you take or whether you like
9 his table or my table more, either way, when we take
10 the Web IV benchmark, if we made an adjustment for
11 Sirius XM, it would be down, not up. But, again,
12 I'm not making any such adjustment.

13 Q. Thank you. Before we leave this --

14 MR. RICH: And we're just about, Your
15 Honors, concluding the direct testimony portion of
16 this witness. It might be a good time for a break.

17 BY MR. RICH:

18 Q. While we have this table up, though, were
19 you present for the opening arguments yesterday?

20 A. Yes, I was.

21 Q. And do you recall that one of the
22 demonstratives Mr. Handzo put up were some bar
23 graphs demonstrating what the per-subscriber
24 compensation to creators was under certain views of
25 outcomes of prior proceedings?

1 A. I remember talking about -- yes, I
2 remember that generally.

3 Q. And do you recall Judge Feder asking
4 whether that chart included any number relevant to
5 the prevailing SDARS II rate?

6 A. Yes, although I was having a little
7 trouble following because I think it was restricted,
8 and I couldn't see the charts.

9 Q. I see. My question is, is there -- is
10 there -- is there anything on Table 2 that supplies
11 the answer to that question?

12 A. Well, somebody has helpfully highlighted
13 one of the numbers on that table. And Mr. Handzo --
14 perhaps, again, Mr. Rich, you want to show him? So
15 there's a number there which is Professor Willig's
16 number on basically how much the record industry
17 makes every month from each Sirius XM subscriber.
18 And so that figure is there and highlighted.

19 Q. Thank you.

20 MR. RICH: Would this be a convenient
21 time for the mid-morning break?

22 JUDGE BARNETT: It would be a great time.
23 Thank you. We'll be at recess for 15 minutes.

24 (A recess was taken at 10:37 a.m., after which
25 the hearing resumed at 10:59 a.m.)

1 JUDGE BARNETT: Mr. Rich?

2 MR. RICH: Thank you.

3 BY MR. RICH:

4 Q. We were given a bit of homework by Judge
5 Strickler at the break, or you were, Professor
6 Shapiro. Can you turn to Table 1 in your direct
7 testimony on page 37.

8 A. Okay.

9 Q. And have you had a chance to consult with
10 Mr. Reitman about the issues raised, methodological
11 issues raised by Judge Strickler?

12 A. Yes, I have.

13 Q. Are you in a position to respond?

14 A. I am.

15 Q. Please do.

16 A. So the short answer is the overwhelming
17 majority of the -- what was done here in this table
18 is based on plays, that is, how much the music is
19 actually played on Sirius XM satellite service.

20 For some of the older contracts for the
21 smaller Indies, Sirius XM did not have data still or
22 did not have data on those plays from past years.
23 So in that -- in those cases, we used other data
24 that he had to come up with an estimate. In some
25 cases, in a few cases using the market share, that

1 is to say the share of the -- that Indie, of its
2 plays in comparison with some others, because Sirius
3 XM sometimes had information of that sort, and in
4 other cases, just looking at how much royalty money
5 they paid to the different labels.

6 This is all very small in terms of the
7 overall what's going on in this table. It is also
8 -- it has all been described and disclosed in my
9 backup materials that were given to SoundExchange.

10 JUDGE STRICKLER: Thank you.

11 BY MR. RICH:

12 Q. We do have just a few clean-up questions
13 on the Web IV benchmark. I want to ask you to
14 respond to several of the larger criticisms leveled
15 by Mr. Orszag to your reliance on the Web IV
16 benchmark, and then we'll move into your rebuttal
17 testimony.

18 So, Mr. Orszag has testified that "it is
19 a mistake to rely on the Web IV rate" since he
20 claims it was "derived from marketplace data and
21 information that, with the passage of time, has
22 grown increasingly disconnected from current
23 marketplace realities." That's a quote from his
24 written rebuttal testimony at paragraph 42.

25 Have you reviewed that in the past?

1 A. I am -- I have looked closely at that
2 assertion of his.

3 Q. And how do -- how do you respond to that
4 criticism?

5 A. I think it's simply incorrect as a
6 factual matter. So we have -- in terms of the
7 agreements that the Web IV subscription rate is
8 based on, we have, again, the Pandora/Merlin
9 agreement from 2014, and we have a set of
10 interactive service agreements around that time and
11 earlier, the ones that Professor Rubinfeld used. So
12 those are what we're talking about here in terms of
13 are those somehow out of date.

14 Let's first address the Pandora/Merlin
15 agreement. So I think this remains a perfectly good
16 estimate, measure, benchmark for a competitive rate
17 for a subscription webcaster, Pandora I at that
18 time.

19 There are -- put it this way, there are
20 -- there is no new marketplace data to indicate that
21 the rate for that service charged by record
22 companies has changed. So what has changed is
23 Pandora has changed their service, and they've
24 changed what their subscription service -- the
25 features of it. And we can talk about that.

1 But in terms of marketplace data on
2 royalty rates, there's no new rate to cover those
3 statutory rights that we saw a private agreement for
4 in Pandora/Merlin.

5 Q. Can I --

6 A. So that's the one branch of the -- of the
7 Web IV benchmark.

8 Q. Just pausing on that, I take it your
9 benchmarking relied as an important equivalence, as
10 it were, on the comparable rights that are being
11 licensed here to those that are reflected in that
12 earlier Pandora/Merlin agreement, correct?

13 A. Absolutely.

14 Q. Okay.

15 A. Yes.

16 Q. And you said there's a second branch of
17 it now.

18 A. So the second branch would be what about
19 the interactive service agreements that Professor
20 Rubinfeld used and the minimum per-play rates in
21 those agreements? And we have actually -- have
22 looked at that and that has not changed either since
23 Web IV, those rates, that is. So just as a straight
24 factual matter, this assertion by Mr. Orszag is not
25 supported when one actually looks at the contracts

1 in force for the rights in question and how things
2 have changed over time.

3 Q. Now, Mr. Orszag does testify concerning
4 some later, more recent agreements that Pandora and
5 indeed iHeart -- iHeart have entered into in the
6 digital music space.

7 Are you familiar with that testimony?

8 A. I am.

9 Q. And he claims that, to -- to a greater or
10 lesser extent, they've superseded or replaced, is
11 the word he used, I believe, the operative
12 Pandora/Merlin agreement under the statutory license
13 that the Judges relied on in Web IV. Are you
14 familiar with that?

15 A. Yes, he has -- he put a great deal of
16 weight on the fact that Pandora has renegotiated its
17 arrangements with Merlin and with the Majors, well,
18 has established these direct licenses with the
19 Majors, and that is a development since Web IV. I
20 note --

21 Q. My question is whether you've considered
22 that set of assertions and how you respond to them?

23 A. Right. So it's certainly true that
24 Pandora has entered into new arrangements with
25 Merlin and entered into these arrangements with the

1 Majors in the last year or six months to a year.
2 The key thing is that all of those direct licenses
3 involve non-statutory rights, involve different
4 types of rights that are necessary for interactive
5 services. He focuses on Pandora's mid-tier service,
6 which is now Pandora Plus.

7 But my point, I think the key point here
8 is that those agreements represent new data points
9 in the interactive services market. We don't have
10 new data points in the -- the non-interactive
11 market, which is the one I'm using for benchmarking.

12 Q. Have you made any effort to determine how
13 "new," to use your words, those rates reflected in
14 the interactive licenses for the mid-tier service of
15 Pandora, in fact, are in terms of prior marketplace
16 agreements?

17 A. Yes, so I've looked at those rates,
18 compared them to the other rates we saw in the
19 larger set of contracts, to see whether there has
20 been a change in the interactive services market,
21 which could be relevant because that is the other
22 set of agreements that underlie the Web IV
23 benchmark.

24 And there's no significant change in
25 rates in that market either over the last few years.

1 And then the Pandora rates are similar. The rates
2 Pandora is paying are similar to the rates other
3 mid-tier services were paying before.

4 So we have a very clear way of testing
5 has the market -- have the market rates for
6 mid-tier, that is services, subscription services,
7 which have some elements of interactivity, have
8 those rates changed in the last few years? It's new
9 for Pandora to have that rate, but let's compare
10 their rates to what Rhapsody, Rdio, and I think
11 Slacker had these types of services before.

12 And the rates are generally similar, not
13 exactly the same.

14 Q. As a matter of --

15 JUDGE STRICKLER: Excuse me, counsel.
16 Professor Shapiro, in paragraph 47 of -- of
17 Mr. Orszag's written rebuttal testimony -- I'm
18 trying to clarify in my mind what you testified to
19 versus what he says here -- he writes, "In any
20 event, the Merlin/Pandora agreement whose
21 per-performance rates were used by the Judges in
22 setting the Web IV rates no longer exists. In its
23 place is an agreement under which Pandora pays
24 Merlin members" -- and then it goes on to some
25 confidential material, which is not necessary to --

1 to repeat here.

2 So do you agree with him that the rates,
3 the contractual rates upon which we relied in Web
4 IV, are no longer effective at this point?

5 THE WITNESS: Well, that benchmark
6 agreement has been superseded, that is, the
7 Pandora/Merlin agreement has been superseded. So
8 that is a fact. I don't -- I agree with that.

9 The -- that has happened because Pandora
10 decided they wanted to change their mid-tier service
11 and make it more interactive, so they needed a
12 different -- they needed to change -- to
13 renegotiate. I don't see that as a change in market
14 rates, though. I see that as a change in business
15 strategy by Pandora.

16 JUDGE STRICKLER: Have you reviewed that
17 new superseding agreement?

18 THE WITNESS: Yes, I have.

19 JUDGE STRICKLER: And is there a separate
20 break-out within that agreement for the purely
21 non-interactive Pandora service?

22 THE WITNESS: The agreement covers three
23 tiers of service. And by the way --

24 JUDGE STRICKLER: Is one of those tiers
25 the -- the purely non-interactive?

1 THE WITNESS: Yes, that's what I was
2 going to say.

3 JUDGE STRICKLER: Sorry.

4 THE WITNESS: There's the purely
5 non-interactive. Then there's the -- which would be
6 ad-supported, basically. Then we've got this
7 mid-tier now called Pandora Plus. And they've got a
8 fully interactive service, which I'm not even sure
9 whether they launched it or it's very young, but
10 we're not focusing on that. The focus has been on
11 the mid-tier, which has replaced the Pandora I
12 service that was operating under the Web IV
13 subscription rates.

14 I would just point out in response to
15 your question, one of the inevitable complications,
16 to the extent one wants to look at that agreement,
17 is we've got three services that are negotiated
18 together, so one always has to be careful about
19 isolating out rates for any one, but it does cover
20 all three.

21 JUDGE STRICKLER: And in the ad-supported
22 tier, is the rate the same or different than the
23 rate that was in the Pandora/Merlin agreement that
24 we relied on in Web IV?

25 THE WITNESS: I believe -- and I'm not

1 sure what might be confidential here, so --

2 JUDGE STRICKLER: Can we say same or
3 different --

4 THE WITNESS: Yes.

5 JUDGE STRICKLER: -- without violating
6 confidentiality? Is that okay, or do we need to
7 close it up for that?

8 MR. RICH: I think we'd better be
9 cautious about it, Your Honor.

10 THE WITNESS: I'll be cautious. Let me
11 just say --

12 JUDGE STRICKLER: Hang on.

13 MR. RICH: I'm a little uncomfortable
14 even answering at that level in an open court.

15 JUDGE STRICKLER: Can we close the
16 courtroom then?

17 MR. RICH: Sure.

18 JUDGE BARNETT: We're going to take some
19 brief testimony regarding confidential information.
20 If you're not privy to that, please wait outside.

21 (Whereupon, the trial proceeded in
22 confidential session.)

23

24

25

1 O P E N S E S S I O N

2 BY MR. RICH:

3 Q. That was your -- that was the
4 demonstrative from which you went through the
5 methodology, the physical -- the actual math of
6 getting to your rate proposal from the Web IV
7 benchmark; is that correct?

8 A. Yes.

9 Q. And Mr. Orszag characterizes that
10 methodology as "needlessly complex and convoluted."
11 That's in his written rebuttal testimony at
12 paragraph 59.

13 Do you agree with that characterization?

14 A. No, I really don't think that is fair for
15 this calculation, which is very straightforward, in
16 my view.

17 Q. Let's turn now to your rebuttal
18 testimony, please.

19 MR. RICH: Your Honors, it will be
20 obvious that the length of this examination is in
21 part determined by the fact that we've agreed to
22 combine both of these in one set of testimony.

23 JUDGE BARNETT: Yes, thank you.

24 We could take a stand and stretch break,
25 if you'd like to do that.

1 THE WITNESS: I'm fine to keep going. I
2 just frankly am trying to clear my head and get in a
3 slightly different mode.

4 BY MR. RICH:

5 Q. Now, in your -- in your written rebuttal
6 testimony, sir, which is Exhibit 9 in the binder,
7 you respond to various aspects of the written direct
8 testimony of Mr. Orszag, of Professor Willig, and
9 Professor Lys; is that correct?

10 A. Yes.

11 Q. All right. Turning to slide 15, I take
12 it this is an overview of your rebuttal testimony as
13 -- well, why don't you describe what this is.

14 A. Right. So, Your Honors, this is the
15 roadmap to the rest of my testimony here today. The
16 first large chunk of it is relating to Mr. Orszag
17 and we'll walk through that. And then we'll turn to
18 my response, rebuttal, to Professor Willig's direct
19 testimony.

20 Q. Now, you have a rather provocative
21 opening reaction in your written rebuttal testimony
22 to Mr. Orszag's testimony, perhaps in response to
23 the dig he made that I just referred to, but you
24 call it perplexing.

25 Do you recall using that word?

1 A. I do.

2 Q. Why -- putting aside the other
3 methodological issues we'll go through, why do you
4 find his rate proposal perplexing?

5 A. Well, the reason I said that is that he
6 states that he's following closely the approach that
7 the Judges adopted in Web IV, and particularly
8 regarding the use of interactive services benchmark,
9 and yet he ends up with a rate that's more than
10 twice as high as that benchmark indicates.

11 So that's kind of perplexing or jarring
12 to me. And that's why I said it.

13 Q. What body of license agreements does
14 Mr. Orszag rely upon in undertaking his
15 benchmarking?

16 A. So he looks at a group of license
17 agreements between the three Majors, on the one
18 hand, and nine different interactive services on the
19 other hand, for a total of 27 agreements for the
20 various pairings.

21 Q. And how many approaches to rate setting
22 from these benchmarks does he offer for the Judges'
23 consideration?

24 A. He has two approaches.

25 Q. Can you briefly describe those?

1 A. Yes. Well, the -- he's using this
2 general approach called ratio equivalency, which he
3 has taken from what the Judges did in Web IV, and
4 then how he does that, that requires looking at
5 retail prices. So in one case, he looks at the
6 Sirius XM retail price, but then has to decide how
7 much of that to allocate to music.

8 In another case, his second approach, is
9 that -- sorry, that was his first approach.

10 His second approach, he looks at the
11 retail price of subscription webcasters, webcasting,
12 and uses that for the retail price. So those are --
13 those are the differences between the two.

14 Q. Did you have occasion to analyze the
15 degree of similarity in those rate-making approaches
16 to any prior rate-making approaches which economists
17 retained by SoundExchange have used in prior SDARS
18 proceedings?

19 A. Well, as indicated here on the slide,
20 this is -- essentially replicates the approach taken
21 by Professor Janusz Ordover in the SDARS II
22 proceeding on behalf of SoundExchange.

23 Q. Now, what is wrong, in your estimation,
24 in attempting to derive rates for Sirius XM from the
25 effective rates contained in subscription

1 interactive service agreements?

2 A. Well, the fundamental -- a starting point
3 of the problem is there's a -- that benchmark is not
4 based on a workably competitive market. And we --
5 we spent a lot of time on this in the Web IV
6 proceeding.

7 This is the sub-bullet here on slide 15.
8 That market, where these agreements are drawn from,
9 is a complementary oligopoly. And just to remind
10 everybody, meaning each of the Majors is a must-have
11 provider in that market, and that creates a
12 situation that's very far from workable competition
13 and rates that are at the monopoly level, if not
14 higher.

15 JUDGE STRICKLER: A question for you,
16 Professor Shapiro.

17 In Web IV, we adjusted for the
18 complementary oligopoly problem, if you will, the
19 worse-than-monopoly problem, by incorporating a
20 steering adjustment.

21 If we were to incorporate a steering
22 adjustment in this proceeding, would that eliminate
23 the complementary oligopoly problem that you
24 identify in Professor or Dr. Orszag's approach?

25 THE WITNESS: So if you follow the same

1 steps that you did in Web IV, including with the
2 12 percent adjustment that you made for steering,
3 that could work here. And I have a section of my
4 written rebuttal testimony that does exactly that
5 and derives a rate of \$1.06 per sub per month for
6 Sirius XM.

7 JUDGE STRICKLER: Do you recall what
8 percentage-of-revenue equivalency that was?

9 THE WITNESS: Yes, that's 9.9 percent of
10 revenue.

11 JUDGE STRICKLER: And if for evidentiary
12 reasons or other reasons, we were not to conclude --
13 to conclude that a steering adjustment was - was
14 supported in this case, is there any other part of
15 your testimony or any other facts in the record that
16 would provide us with a basis to account for and
17 adjust for any complementary oligopoly problem?

18 THE WITNESS: So let's just be clear. If
19 you're relying on these benchmarks, which I don't
20 like, what we could do -- if you didn't need to do a
21 steering adjustment -- I didn't quite follow.

22 JUDGE STRICKLER: If for whatever reason
23 we didn't or couldn't make a steering adjustment.

24 THE WITNESS: Well, if you didn't make
25 one -- I just told you that making a 12 percent

1 steering adjustment leads to 9.9 percent of revenue.
2 So if you didn't do that, you'd bump that up about
3 12 percent and so you would end up around 11 percent
4 of revenue, if you're following me there.

5 JUDGE STRICKLER: Um-hum.

6 THE WITNESS: Okay? And so that -- that
7 would follow from this section of my written
8 rebuttal testimony. So I think -- does that fully
9 answer or was there some other question, if you did
10 a different adjustment?

11 JUDGE STRICKLER: No. So you're saying
12 if we were to use Orszag's approach and -- and not
13 make a steering adjustment, are you saying we would
14 get to an 11 percent-of-revenue calculation?
15 Because, obviously, he has a much higher number that
16 comes up.

17 THE WITNESS: Right. So on page 16 of my
18 written rebuttal testimony, there's a section called
19 Applying "Ratio Equivalency" the Same Way to Sirius
20 XM. And that's in reference to the previous
21 section, that started on page 15, called How the
22 Judges Used Ratio Equivalency in Web IV.

23 So if you apply ratio equivalency here in
24 exactly the same way as you did it in Web IV, then
25 you'd get this 9.9 percent of revenue, \$1.06 per sub

1 per month. And then -- so that's where that was.

2 Now, if -- I'm still not sure what else I
3 have to offer you. His approach is leading to much
4 higher percentages of revenue, but that's because he
5 didn't apply ratio equivalency the same way you did
6 in Web IV. He went -- in my view, departed sharply.
7 And that's a primary criticism I have of him.

8 JUDGE STRICKLER: Well, he did attempt to
9 make a steering adjustment, didn't he?

10 THE WITNESS: He did make the steering
11 adjustment, and I think it was 12 percent as well.

12 JUDGE STRICKLER: So why --

13 THE WITNESS: Although there's a
14 14 percent in there at points.

15 JUDGE STRICKLER: So why is your -- why
16 are your numbers so at variance if you both made a
17 similar steering adjustment?

18 MR. RICH: We were -- we were proposing
19 methodically to go through that because it is -- it
20 is a complex area of the analysis, Your Honor. And
21 if you're -- if you are willing to be a little
22 patient, we're going to walk literally through the
23 answers to that, namely, how Mr. Orszag applied his
24 conception of ratio equivalency, this witness'
25 critique of it against what we interpret you did,

1 and then applying what Professor Shapiro believes to
2 be the correct application of ratio equivalency
3 getting you to the 9.9, not to Mr. Orszag's. It's a
4 multi-step analysis.

5 JUDGE STRICKLER: To answer your
6 question, yes, I'm willing to be patient.

7 (Laughter).

8 MR. RICH: Thank you. I was hoping you
9 would say that. Otherwise, we could say end of
10 examination.

11 MR. HANDZO: I'll go for that.

12 MR. RICH: I'm sure.

13 BY MR. RICH:

14 Q. Let me just ask a few other lead-ups to
15 that, sir.

16 You indicated that a reason not to rely
17 on the actual rates coming out of the interactive
18 service contracts is because it's a noncompetitive
19 marketplace. But you're aware, are you not, that --
20 that Mr. Orszag claims that the interactive services
21 market is now workably competitive? You're aware
22 he's claiming that, right?

23 A. He has now indicated that he does not
24 believe a steering adjustment is needed. I think
25 that he's -- you know, that's my understanding of

1 his testimony.

2 Q. And in support of that, I'm now quoting
3 from his written rebuttal testimony at page 9, he
4 cites the "ability that those Services" -- meaning
5 interactive services -- "have to guide subscribers'
6 listening behavior."

7 Do you recall reading that?

8 A. I do.

9 Q. What do you understand him to be saying
10 there?

11 A. I believe Mr. Orszag is referring to the
12 presence of Service-provided playlists, which at
13 least in theory is a -- could be a way for the
14 interactive services such as Spotify to steer
15 listeners towards labels whose music is less
16 expensive. But, in any event, he's talking about
17 these Service-provided playlist as a mechanism by
18 which the interactive services have some ability to
19 steer, whether they're -- whether they're doing it
20 is a separate question, but those are the playlists.

21 Q. Okay. And how do you respond to that
22 perception of how competition is emerging,
23 available, or perhaps fully blown in Mr. Orszag's
24 conception in the interactive services market?

25 A. Okay. So there's, I think, at least two

1 key points here. First, which I started to get into
2 in my last answer, we're trying to understand
3 whether the rates from the interactive service
4 markets reflect competition.

5 We would -- to look for that, we would
6 want to see are Services discounting the -- excuse
7 me. Are the record companies discounting the rates
8 to get more plays? Is there price competition?
9 That's the first thing you look at.

10 And there's no price competition at all
11 in that market. It remains completely absent. I
12 think we talked about that yesterday.

13 So that tells me already there's --
14 nothing has changed in that respect, since Web IV.
15 The rates are still complementary oligopoly rates.
16 There's no price competition. And then we get to
17 Mr. Orszag's then pointing out: But the Services do
18 have some ability, he says, to steer the interactive
19 services, because of the playlists.

20 And my reaction to that is: It's true
21 the Services have some ability to affect listening
22 mix. It is true. But that is not something new.
23 That was true and pointed out in Web IV as well for
24 interactive services.

25 Q. And why is that element of what he

1 regards as evidence of competition and workably
2 competitive competition -- I may be asking you to
3 repeat your testimony -- not the form of competition
4 that you believe measures a workably competitive
5 market for licensing music?

6 A. Well, the key thing where -- he wants to
7 do in looking at the interactive services market is
8 take the rate. And that rate is not the result of
9 price competition at all.

10 So the fact that there may be or is some
11 non-price competition to be included in playlists
12 does not mean that the rate is a competitive rate;
13 in fact, it is well understood in antitrust
14 economics, if a group of firms agree to set a cartel
15 rate, agree to have a cartel and they set a very
16 high price, they might very well compete on
17 non-price terms to get customers because the margin
18 is so high. This happened in the airline industry
19 when it was still regulated, for example. Prices
20 were high. They competed on non-price forms.

21 So the presence of non-price competition
22 does not change the fact that the rates and the
23 prices are at a complementary oligopoly level, not a
24 workably competitive level.

25 Q. Do you -- did you find anywhere in

1 Mr. Orszag's written direct testimony or his written
2 rebuttal testimony any suggestion, let alone
3 citation to any evidence, that the form of price
4 competition for plays between and among record
5 labels that you describe as the essence of a
6 workably competitive market is occurring in the
7 interactive services market?

8 A. No. There is no evidence of that. I --

9 Q. I'm not asking your evidence. I'm asking
10 whether you are aware whether he cites any evidence
11 of such price competition.

12 A. Okay, no. He -- I believe he was asked
13 at deposition that question, and he was not able
14 to -- did not cite any such evidence.

15 Q. Now, one more thing that Mr. Orszag cites
16 as evidence of workable competition is the fact that
17 there are actually anti-steering provisions in the
18 Majors' agreements with the interactive services
19 from which he concludes those would be unnecessary,
20 but for the inference that they must be forestalling
21 -- although it's not the word he uses; I'll use that
22 -- the kind of price competition that would
23 otherwise be occurring.

24 Did you read that assertion in his
25 testimony?

1 A. Yes, I did. And I remember that.

2 Q. How do you react as an antitrust
3 economist to that?

4 A. I think the anti-steering provisions that
5 we're seeing really undercut or further disable
6 price competition that might not otherwise break out
7 anyhow, but it really further stifles it.

8 So I -- I see them in this context with,
9 indeed, a whole kind of web of these anti-steering
10 agreements as anticompetitive, and certainly did not
11 provide any reason to think that the resulting rates
12 reflect the forces of price competition.

13 JUDGE STRICKLER: Professor Shapiro,
14 would another way of stating what you're stating
15 here in your critique of -- of Mr. Orszag's approach
16 be that he's looking at steering via playlists in
17 the downstream market and mistakenly concluding that
18 that reflects there's steering and price competition
19 in the upstream market?

20 THE WITNESS: No, I don't think that's my
21 criticism. I think -- but let me say a little more
22 to make sure I understand your question properly.

23 One of the ways that record companies
24 seek to have their -- their music played more, let's
25 say Spotify, is to have their -- their songs

1 included on playlists. And I think Mr. Harrison
2 describes how that's quite beneficial.

3 So that is -- to the extent that's going
4 on, I see that as a form of competition in the
5 upstream market where the record companies are vying
6 to have more plays of their music because that's
7 valuable to them. Ultimately, the plays will be
8 occurring in the downstream market when the Spotify
9 listeners decide, you know, which playlist, but
10 these activities are in the upstream market.

11 So does -- that's how I think about it.

12 JUDGE STRICKLER: Okay. Thank you.

13 BY MR. RICH:

14 Q. So while I structured a whole series of
15 questions to get into the topic that Judge Strickler
16 introduced, which is where is issue joinder in
17 interpreting how the Judges in Web IV applied ratio
18 equivalency, with the Judges' permission I think it
19 may be more straightforward to have you walk through
20 the various sections of your rebuttal testimony in a
21 fashion that seems most logical to you to put
22 together this -- this story. Let's at least try
23 that. And we can interrupt with questions. Does
24 that work for you, sir?

25 A. Yes, it does.

1 Q. Can you direct us to where you're going
2 to be working from?

3 A. Well, let me start, just to so the Judges
4 know the structure of this, at page 13 of my written
5 rebuttal testimony, and I'll move us forward. So
6 there's a section here, "Ratio Equivalency" Does Not
7 Apply to Sirius XM and Interactive Services.

8 So as a starting point, what the Judges
9 did in Web IV was apply ratio equivalency as between
10 interactive services and webcasting, basically, two
11 form -- this is this open question. Does it even
12 apply to this distinct Service, which is Sirius XM?

13 There are some, I can say, serious issues
14 about whether the requisite cross-elasticity of
15 demand --

16 Q. Why don't -- why don't we take that
17 threshold issue, which is --

18 A. Do you want to do that?

19 Q. I apologize for collapsing two related
20 but distinct issues, which is you have critiqued at
21 length the application of ratio equivalency between
22 those two markets as -- as inappropriate here in
23 relation to Sirius XM, and perhaps you could advise
24 the Judges as to your opinions as to why that is the
25 case.

1 A. So let me just be clear for the Judges, I
2 feel slightly awkward on all this because I read
3 very closely what you all wrote in Web IV, and I'm
4 trying to apply what you did here, the economic
5 logic, the steps, and that's what a lot of this is
6 walking through.

7 The first part of that is you have some
8 language about the conditions under which ratio
9 equivalency can be used. That's actually quoted at
10 the bottom of page 12 here.

11 And the key one for me is that there's a
12 sufficiently high cross-elasticity of demand between
13 the benchmark service and the target service. So in
14 this case, between interactive services and Sirius
15 XM. I don't believe that applies here. So that's a
16 -- that's kind of a gating issue. Have the
17 necessary conditions been met, before we even start
18 doing these calculations in this way?

19 Q. And Mr. Orszag claims that those
20 conditions have been met, doesn't he?

21 A. He does. He -- yes, he certainly does.

22 Q. And have you reviewed his rationales for
23 -- for that? Let me -- let me phrase the question
24 differently.

25 Is the test of -- sufficiently high that

1 there exists some degree of competition between
2 Sirius XM and interactive services or is the
3 threshold different, in your estimation?

4 A. Well, and this is why I'm trying to
5 interpret what you all said. To me as an economist,
6 at least --

7 JUDGE BARNETT: Good luck. When you do,
8 will you let us know?

9 (Laughter).

10 THE WITNESS: I'm distinguishing here
11 between two types of showings. One would be what, I
12 take your word, sufficiently high cross-elasticity
13 of demand, there is close direct competition between
14 the two Services. And you talk about functional
15 convergence and that sort of thing.

16 That's a higher threshold to me than
17 simply showing the Services compete to some degree.
18 Okay?

19 So in my view, the evidence that
20 Professor -- Mr. Orszag offers on this point is very
21 thin. And it's not disputed that Sirius XM competes
22 to some degree with interactive services. They
23 compete to some degree with all of the downstream
24 forms of music listening.

25 But it's pretty distant. And I don't

1 think the cross-elasticity of demand is very high
2 all. He doesn't really engage on that.

3 Q. Does he do any kind of a quantitative
4 study of that subject?

5 A. No.

6 JUDGE STRICKLER: When -- when you differ
7 with Mr. Orszag on this cross-elasticity issue,
8 isn't this in some sense a battle of -- of the
9 survey experts? You rely on Mr. Lenski and Edison
10 Research. Presumably, he relies on -- not on
11 Mr. Lenski and perhaps on other survey experts who
12 are appearing on behalf of SoundExchange.

13 THE WITNESS: That's a very good guess.

14 JUDGE STRICKLER: Lucky.

15 THE WITNESS: Yes. So I think the survey
16 evidence here is directly relevant. And let's
17 compare what the two studies show. The Lenski
18 survey shows that, of the listening hours on Sirius
19 XM, 7.8 percent of it is coming at the expense of
20 interactive services. Okay? I showed that table
21 earlier, 40 percent or so was terrestrial radio. We
22 could look the rest up.

23 BY MR. RICH:

24 Q. And you discuss it in this context
25 specifically at the bottom of page 14 over to the

1 top of page 15.

2 A. Okay. Excellent. I'm glad I did.

3 So that's pretty low, I would say.

4 Certainly, there are other much more direct
5 competitors to Sirius XM. In contrast, the Dhar
6 survey does have a significantly higher number,
7 31 percent, instead of 7.8 percent. That's measured
8 in terms of switching, how people would switch their
9 subscription. If you didn't subscribe to Sirius XM,
10 what other service would you subscribe to, is how
11 that is framed.

12 So that's 31 percent. And Professor
13 Hauser does come back and comes up with a number
14 that's 14 or 15 percent using -- very similar to
15 what professor Dhar did, but he claims fixing it in
16 some way. So that's the range we're talking about.

17 JUDGE STRICKLER: One of the criticisms,
18 as I understand it, of -- of Mr. Lenski's study is
19 that it's a substitutability study but there are no
20 price points attached to the analysis.

21 And you're making a determination as to
22 whether or not there's a sufficiently high
23 cross-elasticity of demand, but cross-elasticity of
24 demand, of course, necessarily implicates price
25 points, changes in price as well as changes in

1 quantity, for the -- for the two goods that are
2 crossed to one another.

3 So how comfortable are you as an
4 economist in using Mr. Lenski's study, which has no
5 price points, in coming to conclusions as to
6 cross-elasticity of demand?

7 THE WITNESS: This is a question that
8 often comes up in antitrust because we often have
9 this type of survey evidence about how people switch
10 without reference to prices, and we're often
11 interested in cross price elasticity. My general
12 view, Judge Strickler, is I think of this type of
13 survey evidence as quite useful. We use it a lot in
14 mergers, for example.

15 But you need to be careful because if the
16 switching -- we also use actual switching behavior
17 too, even though it's not price-induced switching
18 behavior. So the same type of issue in the real
19 world as opposed to a survey. The either reported
20 or actual switching behavior that's not price-based
21 is quite useful in terms of how we think of
22 consumers, how they see things as close substitutes
23 or not close substitutes.

24 But if there's a reason to believe that
25 the price-based switching pattern is quite different

1 than the other switching pattern, then one should
2 account for that. Here I would accept that because
3 Mr. Lenski is asking about where would you move your
4 listening, that could give a different answer than
5 what would you subscribe to if Sirius XM were more
6 expensive.

7 But it's pretty close, I think, in that
8 really you're asking somebody if you stopped
9 listening to Sirius XM, what would you listen to
10 instead? And I don't see any big reason why the
11 answer to that would vary from just asking that
12 generally versus asking somebody, if you stopped
13 listening to Sirius XM because the price went up,
14 what would you listen to and subscribe to instead?

15 So I don't think that's a major issue,
16 but I accept the point generally. Okay. So I have
17 that.

18 The other thing here, then, is what do we
19 make of 7.8 percent, 14 percent, 31 percent? Oh, I
20 should say, we also know that the lion's share of
21 the Sirius XM listening is in the car, where
22 terrestrial radio is huge. And we saw that slice of
23 listening. Interactive services were 2 percent or
24 so, and that could include some ad-supported.

25 So -- and we all have other things we

1 know. For example, a lot of the people who
2 subscribe to Sirius XM also subscribe to Spotify,
3 and we have this sense of how much listening to that
4 is in the car from the share of ear. So there are a
5 lot of pieces here that I think fit together to
6 indicate that terrestrial radio is a huge direct
7 substitute for Sirius XM.

8 We also have Mr. Meyer's testimony where
9 he indicates that what he sees Sirius XM competing
10 against is the terrestrial radio and then other free
11 listening in the car, not the subscription, paid
12 subscription.

13 So -- so there's a lot of pieces here.
14 And Mr. Orszag really doesn't engage on this in
15 terms of what would be a high cross-elasticity of
16 demand.

17 If you look back at Dhar -- so let's go
18 back to the Dhar survey, 31 percent, okay? If you
19 accepted that fully and none of the criticisms, I
20 guess you could ask is that a sufficiently -- does
21 that relate to sufficiently high cross-elasticity?
22 And I guess I don't want to tell you what you meant
23 by those words exactly.

24 I don't think we have -- the functional
25 convergence that you had in Web IV, a lot of

1 evidence about that isn't true here. So I'm viewing
2 it more holistically, and I don't think overall,
3 when you look at all these pieces of evidence
4 together, that the record shows a high
5 cross-elasticity between Sirius XM and paid
6 interactive.

7 JUDGE STRICKLER: And when you say
8 there's less functional convergence here, is that
9 just another way of stating the earlier point you
10 made, that most of the listening to Sirius XM is in
11 the car?

12 THE WITNESS: It's in the car. It's
13 also, you know, part of quite a different service as
14 well with all the non-music content. But the car is
15 key because, you know, that pie chart earlier about
16 how little interactive service listening is in the
17 car, that's pretty powerful, I think, in my mind. I
18 think that's very important evidence.

19 BY MR. RICH:

20 Q. On that point, sir, are you aware of any
21 changes in the essential attributes of the -- of the
22 Sirius XM service that have brought them closer to
23 interactive functions as of today?

24 A. Change in the Sirius XM?

25 Q. Sirius XM, that brings them closer to the

1 functionality of interactive services?

2 A. No. They might like to try, but it's
3 pretty hard with satellite.

4 Q. So -- so staying with this first or
5 wrapping this first observation, which is sort of
6 the threshold issue of the applicability in the
7 first place of ratio equivalency as you understood
8 the gating issues and the Judges as -- as you
9 summarize at the bottom of page 12 of your written
10 rebuttal testimony, where do you conclude on that?

11 A. Right. So --

12 Q. What do you conclude?

13 A. Right. Well, I -- I'm sorry, I'm
14 confused. You pointed to a particular point here?

15 Q. Actually, I'm -- I'm -- I beg your
16 pardon, actually.

17 Looking at section 2, beginning at page
18 13, your headline is "Ratio Equivalency" Does Not
19 Apply to Sirius XM and Interactive Services,
20 correct?

21 A. That's right. And the --

22 Q. Okay. And --

23 A. The conclusion of that section is coming
24 up on the top of page 15.

25 Q. Right. What would be the implication of

1 that for application of the interactive services
2 benchmark in this proceeding, if the analysis -- if
3 that observation were to carry the day?

4 A. So I -- I state that at the top of page
5 15. Basically, this invalidates or at least
6 seriously calls into question Mr. Orszag's entire
7 approach, since it's based on ratio equivalency, and
8 the conditions necessary, in my view, have not been
9 met.

10 Q. Now, you don't stop there in your
11 analysis, correct?

12 A. I do go on.

13 Q. Okay. Why do you go on? Why do you go
14 on?

15 (Laughter)

16 A. Because it's so exciting the Judges
17 really want to hear it.

18 JUDGE FEDER: It's true.

19 THE WITNESS: So -- so I want to show, as
20 a rebuttal witness here, that even if you use this
21 approach, if you do it faithfully to how it was done
22 by the Judges in Web IV, you get a very different
23 answer than Mr. Orszag got, and this is what we
24 previewed in response to Judge Strickler's
25 questions, that you would get 9.9 percent of revenue

1 rather than his roughly 24 percent of revenue, quite
2 a big difference, which is then going to come down
3 to how do you actually do this? When you actually
4 take the numbers and do the steps, it's two and a
5 half times, roughly, difference. And I think this
6 is what the Judge was asking about earlier, how does
7 that happen?

8 BY MR. RICH:

9 Q. Yes. And so can you explain how that
10 happens?

11 A. Let me do it at a high level and see how
12 much detail we want to go into and maybe get some
13 guidance from the Court since it's --

14 Q. Please do.

15 A. The -- a key -- let me say in Web IV,
16 what the Judges did was they took Professor
17 Rubinfeld's interactive service agreements, they
18 looked at the minimum -- they, you -- looked at the
19 minimum per-play prongs for the agreements that had
20 them, which was about half of his larger sample, and
21 adjusted those for interactivity and then did a
22 steering adjustment.

23 And that's the steps that I've replicated
24 here. And that's what gets to the 9.9 percent.
25 Mr. Orszag has not done that. It's just not what he

1 did in terms of the steps of arithmetic.

2 He went and looked at the effective rates
3 paid, percentage of revenue, did some adjustments,
4 the approach 1, approach 2 that we talked about,
5 which equivalent to the interactivity adjustment and
6 adjusting for music and non-music content, those
7 elements. And since the -- since the
8 percentage-of-revenue rates were in the range of --
9 can I say this openly? I'm not sure -- high, very
10 high --

11 Q. The ultimate rate proposal is public.

12 A. Okay. The -- he ended up with the
13 24 percent. But he started from -- from the
14 effective rates in those agreements, not from what
15 you all did as Judges, which was started from the
16 minimum per-play rates.

17 So he departed in two important ways.
18 What he didn't do, follow what you did, he used a
19 different aspect of the agreement, and he didn't do
20 this on the per-play basis, which is what -- what
21 you did in Web IV.

22 Q. Is what Mr. Orszag did tantamount to what
23 Janusz Ordover did methodologically in SDARS II?

24 A. I think it's similar, perhaps identical,
25 and leads to roughly the same type of rates.

1 Q. It's more than doubling of the then
2 rates, correct?

3 A. Yes. If we look in terms of the numbers
4 and the steps, it's very much like what you saw in
5 SAT II, which is the interactive service agreements
6 have these very high rates that are paid as a
7 percentage of revenue, and when you use those and do
8 an interactivity adjustment, or music/non-music
9 adjustment, you get about 25 percent of revenue.

10 This is what Professor Ordovery did, it
11 was not accepted, and that's what we're seeing
12 again. And that's just not what the Judges did with
13 these same agreements in Web IV because they started
14 with the per-play prongs. And that's what I've
15 done. And that's the whole difference.

16 Q. So --

17 JUDGE STRICKLER: Why -- I'm sorry. Why
18 is it fundamentally wrong to begin with the
19 percentage-of-revenue rate as -- as Mr. Orszag did
20 as opposed to the minimum per-play rate? I
21 understand it's not what we did in Web IV. But why
22 is that difference important?

23 THE WITNESS: Well, it all depends on
24 what you do with it. I mean, the -- the -- he
25 claims to be following what you did. So he's not.

1 And that's his primary justification, is to follow
2 what you did and your notion with ratio equivalency.

3 JUDGE STRICKLER: Let's -- let's assume
4 he didn't do what we did --

5 THE WITNESS: Yes.

6 JUDGE STRICKLER: -- for that reason,
7 because he relied on percentage-of-revenue analyses,
8 rather than minimum per-play rates.

9 So he didn't do what we did. Why can't
10 he do it his way?

11 THE WITNESS: Well, I think then you're
12 back to essentially a repeat of what you did in Web
13 -- excuse me, in SAT II. So then we've got these
14 highly noncompetitive rates in this interactive
15 market, and you would need to do some other much
16 larger adjustment to --

17 JUDGE STRICKLER: More than just the
18 steering adjustment, you're saying?

19 THE WITNESS: Of course, absolutely.
20 Because, remember, what you did was you took the
21 minimum per-play rates and you found that when you
22 adjusted those down by 12 percent, you got something
23 very close to the Pandora/Merlin competitive rate
24 and that fit together -- tell me if I'm reading your
25 mind wrong here -- fit together and corroborated

1 what you saw in the Pandora/Merlin.

2 JUDGE STRICKLER: In the Pandora/Merlin,
3 the subscription rate was .21, 22.

4 THE WITNESS: 21.

5 JUDGE STRICKLER: Same area. Yeah.

6 THE WITNESS: He gave 21. This approach
7 gave .22 after the steering adjustment. So that
8 fit.

9 If you had started with the very high,
10 say, 55-ish percent, say, and done a 12 percent
11 steering adjustment off of that --

12 JUDGE STRICKLER: 7 percent, more or
13 less, right?

14 THE WITNESS: Yeah, you would end up
15 with --

16 JUDGE STRICKLER: 48 percent?

17 THE WITNESS: You'd end up with 48, and
18 then you'd cut it in after for interactivity.

19 JUDGE STRICKLER: Which is sort of what
20 Professor Orszag has.

21 THE WITNESS: You get 24. That's what he
22 gets. So my point is, if you want to do something
23 like that, there's nothing inherently wrong with
24 starting with that rate if you do the right
25 exercise, but the question then is going to become

1 how are you properly going to adjust for the lack of
2 competition in that market? 12 percent is not
3 nearly enough if you're using that arithmetic.

4 It was fine for the minimum per-play
5 prong. It's completely inadequate for this, if
6 you're doing it this way.

7 JUDGE STRICKLER: There's something --
8 maybe I'm not seeing it, but there's something
9 circular about what you just said, though, because
10 you make the same sort of steering adjustment,
11 arguably, 12 percent, and then you say, well, now
12 it's down from 55 to 48, roughly, divide by 2 for
13 the non-music content, takes you to 24. But that's
14 too high. So, therefore, that can't possibly be
15 sufficient.

16 But if what we're trying to do is
17 determine the rate by applying the steering
18 adjustment, we don't know what's too high or too
19 low. All we know is how to go through whatever our
20 appropriate steps and come up with an answer.

21 So the question is not whether -- if the
22 result was too high, if it fails some inherent gut
23 feeling as to whether the rate should be too high or
24 too low, there has to be something either right or
25 wrong about the steps. So I'm not sure I

1 understand. Maybe it's my failing, but I don't
2 understand why, when you start with a percentage of
3 revenue and make the same sort of percentage
4 adjustment for steering, and assuming there is also
5 an adjustment for interactivity, which I didn't ask
6 you about yet, why we should be -- why we should
7 necessarily assume that the rate that results,
8 24 percent, as you just said, is inherently wrong
9 just because it's too large?

10 MR. RICH: May I inquire on that line,
11 Your Honor, to help?

12 JUDGE STRICKLER: Well, can I get an
13 answer first? And then --

14 MR. RICH: Sure.

15 JUDGE STRICKLER: And then be my guest.

16 MR. RICH: Sure.

17 THE WITNESS: Okay. So the per-play rate
18 in Web IV that -- the effective rate that you would
19 get, I think this is what -- the rate that one got
20 from Professor Rubinfeld after adjusting for
21 interactivity was about .26 cents per play. And
22 that's what you adjusted down 12 percent to get
23 to .22.

24 JUDGE STRICKLER: That sounds right.

25 THE WITNESS: Okay. If you had started

1 instead with percentage of revenue and looked at the
2 effective per-play rate there, everything was done
3 in per-play terms in that part, you would have
4 gotten -- I don't know that I have the number here,
5 but much a higher number, let's say .55 or .6 cents
6 a play, something like that.

7 And if you had done these steps, you
8 would have adjusted that -- if you just took
9 12 percent, let's say you would have adjusted that
10 down from .55 or .6, 12 percent, let's say you
11 get .5, just for purposes of discussion, okay?

12 So then you would have been in a
13 situation following this logic where you would have
14 had, sitting with you, the Pandora/Merlin agreement
15 with .21 and this other method of looking at
16 interactive agreements with .50. If you'd done
17 that, I think then you would have had to ask
18 yourself: What am I to do with this? Okay?

19 I would think if it were me at that
20 time -- again, I'm very -- I feel slightly
21 awkward -- I would have said: Look, I know this
22 interactive market has got real problems, I know
23 it's a complementary oligopoly, let's say monopoly;
24 I would think in this situation as in most there's
25 quite a large gap in price between monopoly and

1 competition.

2 And probably looking at this .50 rate --
3 well, .55, let's say, before I do steering
4 adjustment, that's a monopoly rate. I've got a .21
5 rate that I know reflects the forces of competition.

6 I wouldn't make a 12 percent adjustment
7 to the .55 at that point to get .50. That wouldn't
8 make any sense. Why would I think 12 percent would
9 be enough with this method to get down to a
10 competitive rate?

11 So what I think you did that worked was
12 look at the per-play rate and find 12 percent
13 adjustment was adequate there. So it really is a
14 matter of how you would view these calculations in
15 the context of the other information you know there
16 or here, other benchmarks too.

17 JUDGE STRICKLER: When you're making a
18 determination, whether as an economist or judge, as
19 to whether or not you're going to rely on the
20 percentage-of-revenue rate or a per-play rate, is it
21 informing -- I'll ask you as the economist -- is it
22 informing to you as to where the rates are
23 essentially -- where the rates actually paid? In
24 other words, it's a greater-of formula, say, in the
25 proposed benchmark in the interactive area, and it's

1 the greater-of percentage of or, say, per-play rate.
2 Is it informative to you as to which one of those is
3 typically triggered in the marketplace?

4 THE WITNESS: I think it's going to
5 depend on the context. I take that to be a general
6 question.

7 JUDGE STRICKLER: Yes.

8 THE WITNESS: The -- in general, I think
9 just starting off afresh, the first thing to look at
10 would be the effective rate. That makes sense.

11 But if you have market power being
12 exerted, and you see a significant difference
13 between two prongs, there may be market power in the
14 form of price discrimination depending on which
15 prong gets triggered through a form of, basically,
16 second-degree price discrimination.

17 So you need to be careful about that.
18 But I'm not suggesting some general methodology
19 where one use -- uses non-binding prongs. I'm just
20 saying if you use the binding effective rate, if you
21 had done it there, you would have ended up with this
22 much higher rate, which I don't think was any close
23 to a competitive rate, and I think you would been
24 forced to do something different than the 12 percent
25 adjustment. I hope so, anyhow.

1 And the same is true here. You need much
2 more than a 12 percent adjustment if you're going to
3 start with -- with Mr. Ordovery's numbers. You know,
4 going down from 28 percent, or whatever it is, to
5 24 percent, that's not doing it because he's
6 starting with this elevated monopoly rate, the
7 effective rate in percentage terms.

8 JUDGE STRICKLER: Thank you.

9 BY MR. RICH:

10 Q. Just to round this out, what's your
11 recollection of the derivation of the 12 percent
12 steering adjustment in the Web IV decision? Did
13 that have any -- did that use as any base, as it
14 were, the interactive service marketplace or
15 something different?

16 A. No. So that was the percentage reduction
17 that Pandora achieved with Merlin in exchange for
18 steering. And so that, no, it didn't have anything
19 to do with interactive services.

20 And I would add that that was -- remember
21 there, the reduction was in comparison with what was
22 like the statutory rate, which was the per -- the
23 pure play rate. And so I think the thinking would
24 be we're not starting from a monopoly rate. The
25 pure play rate is itself meant to be -- I mean, it's

1 tricky because of the way it came about, but not a
2 monopoly rate, we hope, and so we're adjusting from
3 that and we're seeing the discounting that occurred
4 under that rate through the force of competition.

5 Q. You don't recall, as the testifying
6 economist for Pandora there, recommending a steering
7 adjustment from what you there equally believed was
8 the wholly noncompetitive interactive services
9 market, correct?

10 A. That's correct. In fact --

11 Q. You didn't attempt to compute that, did
12 you?

13 A. No. And Professor Rubinfeld was offering
14 a much higher rate. So this -- the -- what we're
15 now -- the methodology we're now talking about is
16 something the Judges used but was not -- I did not
17 suggest 12 percent from the interactive services
18 rate there.

19 And, actually, Professor Rubinfeld wasn't
20 either.

21 Q. Thank you.

22 MR. RICH: Your Honors, a gut check.
23 We're still in the midst of this section. What's
24 your pleasure about how long you'd like to run?

25 JUDGE BARNETT: I think we should

1 probably break. Co.

2 MR. RICH: Okay.

3 JUDGE BARNETT: It's tough to do a lot of
4 thinking on an empty stomach. We'll be at recess
5 for one hour.

6 (Whereupon, at 12:10 p.m., a lunch recess
7 was taken.)

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 not confidential, but whether it is broken down as
2 to different royalties within the overall, that I
3 don't know.

4 MR. RICH: May I consult with my expert
5 on this?

6 JUDGE STRICKLER: Absolutely.

7 THE WITNESS: Well, let me say while they
8 are consulting two things. First, I have a pretty
9 good recollection of that, if I am allowed, however
10 we will convey it.

11 The second is some of my written
12 testimony in Web IV has that number in it in some of
13 the appendices.

14 JUDGE STRICKLER: Thank you.

15 MR. RICH: And it would be on a
16 restricted record.

17 JUDGE STRICKLER: Although I could go
18 back and look, why don't we close the door here,
19 because, you know, ADD being what it is.

20 (Whereupon, the trial proceeded in
21 confidential session.)

22

23

24

25

1 O P E N S E S S I O N

2 BY MR. RICH:

3 Q. Would you please turn to page 18 of your
4 rebuttal testimony, the section beginning at the
5 bottom of that page called Additional Flaws in Mr.
6 Orszag's Calculations.

7 A. Okay.

8 Q. We're going to, in the interest of time,
9 go very quickly through the three that you identify.
10 In fact, the second one has more or less been
11 covered, and with the understanding that the fuller
12 exposition of these points is physically in this.

13 Focusing on the first identified
14 additional flaw at page 19, share of Sirius XM
15 revenue attributable to recorded music, can you just
16 synopsise what it is you are addressing in that
17 section, please?

18 A. Yes. So under Mr. Orszag's approach 1,
19 he needs to estimate the portion of the value of
20 Sirius XM's service attributable to music. And he
21 divides the value up between music content and
22 non-music content.

23 And I point out here that if one is going
24 to get into this type of allocation of value, it is
25 very important to also include two other inputs that

1 go into the service, Sirius XM service. One is the
2 infrastructure that they provide as part of their
3 service, the convenience that comes with that, the
4 equipment and so forth, and the other would be their
5 efforts at programming and curation, which adds to
6 the value of the music.

7 All of these inputs, of course, are
8 combined together to create a valuable service.

9 And as usual in economics, it is very
10 hard to attribute value to different inputs when
11 they are all needed to have -- to create the
12 product.

13 Q. And down at the bottom of page 19 in that
14 section, you point to another what you believe is
15 probative indicium of a better proxy for the value
16 of the music component at \$4.91 a month.

17 Do you see that?

18 A. Yes, that's right.

19 Q. So, briefly, what is that?

20 A. So that's the average retail price of
21 subscription non-interactive services using his
22 data. And that would seem to me a better figure to
23 use for assigning the value to the music in this
24 service rather than the number which Mr. Orszag
25 provides, which is 8 dollars.

1 Q. Turn to the third section of this
2 analysis on page 21, please.

3 JUDGE STRICKLER: May I interrupt you for
4 a second? I'm on sort of a delay here as I think
5 through some of the other answers, so I apologize.

6 Going back to page 19 and the first point
7 you made, you call it the first point in the last
8 paragraph before the numbered item 1.

9 Do you see, first, Mr. Orszag's approach
10 1 1 fails to assign value to any of the inputs to
11 Sirius XM's service, other than content? Do you see
12 that?

13 THE WITNESS: I do.

14 JUDGE STRICKLER: And I assume among
15 those inputs, one of the larger inputs is the
16 provision of satellites, correct?

17 THE WITNESS: Correct, the
18 infrastructure.

19 JUDGE STRICKLER: Aren't those factors
20 that the statute directs us to consider as the --
21 within the four enumerated factors or lettered
22 factors A through D in 801(b)(1) relative costs and
23 contributions or maybe even arguably fair return on
24 investment, if you will, investment in the
25 satellites, rather than utilizing those factors to

1 first establish a rate against which to apply those
2 factors?

3 MR. RICH: You are asking for his
4 opinion, of course, as an economist, not as a legal
5 interpretation of the statute?

6 JUDGE STRICKLER: Thank you. Absolutely.

7 MR. RICH: Thank you.

8 THE WITNESS: So I am thinking very much
9 here in terms of willing buyer/willing seller rates
10 and negotiations. And I am specifically responding
11 to his benchmarking exercise.

12 So everything here is about that
13 question; namely, how would you account for these
14 other significant inputs by Sirius XM in doing a
15 benchmarking exercise purely under a willing
16 buyer/willing seller.

17 So that's -- and he is doing that, too.
18 He would agree that's what he is doing.

19 When you finish that exercise -- so I
20 have a criticism here, okay. When you finish that
21 exercise, then the way I am thinking about it, and
22 hopefully this is the way you are thinking about it,
23 you then have to decide what modifications to the
24 801 -- to the willing buyer/willing seller rates you
25 want to make based on the four 801(b) factors, one

1 of which is relevant contribution. Now, there is
2 varying and so forth, so I view those as distinct.

3 I am just addressing willing
4 buyer/willing seller here.

5 JUDGE STRICKLER: So if we consider the
6 cost of the services such as satellites, for
7 example, within the context of the willing
8 buyer/willing seller in an effectively competitive
9 market, if we consider that factor there, if we were
10 to otherwise also consider that factor within the A
11 through D factors, asking those four questions, the
12 four questions that you ask under the statute, then
13 we would be double-counting. Wouldn't we be asking
14 the same question twice?

15 THE WITNESS: So I think this is where we
16 have the value of using what I think I can help you
17 as an economist and going beyond that in the law, I
18 can do the willing buyer/willing seller analysis.
19 That's what I'm doing.

20 I do not really fully understand what as
21 a legal matter those modifications might be between
22 willing buyer/willing seller on the one hand and
23 801(b). That's up to you.

24 I don't really have -- I don't really
25 know. It seems to me you could decide potentially

1 we have already accounted for it, willing
2 buyer/willing seller, no problem, we don't need to
3 do anything else. That I don't think is what was
4 done last time, SAT II, or you could decide there is
5 some other modifications needed to go beyond willing
6 buyer/willing seller.

7 I am just doing the willing buyer/willing
8 seller here.

9 JUDGE STRICKLER: Thank you.

10 BY MR. RICH:

11 Q. If you could flip to page 21 of your
12 testimony, please, the section entitled Downstream
13 Elasticities of Demand. And, again, this is in a
14 section where you address additional flaws in Mr.
15 Orszag's calculations.

16 Once, again, briefly, in the interest of
17 time, could you summarize what issue you are
18 identifying and how you are analyzing it here?

19 A. Okay. So Mr. Orszag states that under
20 his method of using the interactive services
21 benchmark, a downward adjustment will be warranted
22 because the elasticity of demand -- excuse me, I got
23 that wrong.

24 Hold on. I think there is -- I think
25 there is a mistake in the text here. Oh, I see.

1 Okay. Sorry, I was just reading and I got a little
2 confused.

3 It is the first -- the third paragraph in
4 that section, the large one, but let me just state
5 it now that I have got myself oriented here, he
6 believes that the elasticity of demand for Sirius XM
7 is lower than the elasticity of demand for
8 interactive subscription services, and, therefore,
9 he believes some upward adjustment from his
10 benchmark would be warranted, but he is not making
11 it, but he is just making this point along the way.

12 So my response to that is that his belief
13 or his basis for saying that the elasticity of
14 demand for Sirius XM downstream is lower than the
15 elasticity of demand for interactive subscription
16 services is flawed, and, therefore, he has got it
17 backwards.

18 If you look at what he refers to there,
19 he relies on Professor Willig's analysis of the
20 survey data described by -- in the Dhar report. And
21 Professor Willig used those data inconsistently.

22 When you use them consistently in exactly
23 the way, otherwise identical to the way Professor
24 Willig did, the results are reversed. We find that
25 Sirius XM's elasticity of demand is higher. And so

1 if there would be any adjustment, it would be
2 downward.

3 In the end he is not making the
4 adjustment so I am not sure how much this matters,
5 but I do show that he has got it backwards.

6 Q. Thank you. Let's turn to your rebuttal
7 testimony relating to Professor Willig's direct
8 testimony.

9 In Section 4 of your written rebuttal
10 testimony, you critique Professor Willig's attempt
11 to show the impact of streaming on download sales.
12 Is that correct?

13 A. Yes.

14 Q. And what do you understand to be the
15 point that Professor Willig is trying to make?

16 A. Okay. So I should just -- everybody, I
17 suggest we pause, we're in quite a different set of
18 issues now.

19 A key theme, I would say, of Professor
20 Willig's written direct testimony is that streaming,
21 the growth of streaming services over the past five
22 years or so, which has been substantial, has been a
23 considerable drain on record company revenue. And
24 so I'm addressing that claim that he is making.

25 Q. And what do you understand him to mean or

1 define by streaming?

2 A. So in -- he defines streaming to include
3 basically what we -- what I think we have all been
4 calling streaming, which would be interactive
5 services, non-interactive services.

6 And then, somewhat confusingly from my
7 perspective, he lumps Sirius XM in with that in
8 calling it streaming.

9 That I don't think is the normal usage,
10 so -- but that is his, so there you go.

11 Q. Does his regression demonstrate the
12 impact of Sirius XM alone on download sales?

13 A. No. What his regression does is look at
14 this aggregate variable or lumped-together variable
15 of the growth of streaming and Sirius XM together,
16 not looking at the impact of Sirius XM alone, again,
17 on download sales.

18 Q. Is there reason to believe that the
19 impact of Sirius XM alone is consistent with the
20 impact of streaming in the aggregate as he
21 identifies it?

22 A. Well, based on my work, we know that that
23 is not the case, and the impact is quite different,
24 that is, Sirius XM's impact on downloads is very
25 different than the impact of streaming, that is,

1 interactive and non-interactive services.

2 Q. And did you perform any, when you said
3 your work, what sort of work did you do to analyze,
4 further analyze his analysis?

5 A. So his analysis comes in the form of a
6 regression where he looks over time at these
7 variables and how they move, and comes up with some
8 results based on that. I did exactly the same thing
9 that he did, in other words, I took the same data,
10 same time period, so forth.

11 I simply disaggregated or broke out the
12 three types of services that he had lumped together,
13 namely, interactive services, non-interactive
14 services, and satellite radio.

15 Q. Now, isn't it a fact that Professor
16 Willig claims that it is not possible to do that
17 kind of breakout, in other words, not to separate
18 out Sirius XM from other forms of steering?

19 A. I would put it this way, Mr. Rich: He
20 said that doing that would not be reliable or would
21 not -- would not allow one to tease out the separate
22 effects, and so he was reporting the combined
23 regression.

24 Q. And did he provide reasons why he
25 believes it would be inappropriate or one would be

1 unable to do that?

2 A. Yes. In his written direct testimony, he
3 explained -- he gave two reasons for why he lumped
4 the variables together. One was he asserted that
5 the three different types of services are -- move --
6 again, we're measuring their listening, listening on
7 the services, that those listening measures move
8 very closely together over time, and so, therefore,
9 in econometric terms, are highly multicollinear.

10 Q. And did you examine that contention on
11 his part?

12 A. Just to be clear, he did have a second
13 reason, but we're --

14 Q. Let's focus on this first.

15 A. Okay. So I --

16 Q. With reference in this case to page 29 of
17 your written rebuttal testimony in Figure 1.

18 A. Thank you. This is restricted or not,
19 but I am not sure. But it may be restricted.

20 Q. Yes on the restricted. Do not publicly
21 show the chart, please.

22 A. But I want to make sure --

23 Q. Thank you.

24 A. I want to refer to the chart.

25 Q. Yes.

1 A. So I just want to make sure the Judges
2 can see it as well. That's all. Is it visible to
3 you now?

4 JUDGE STRICKLER: Not on the screen.

5 JUDGE BARNETT: Not yet.

6 JUDGE STRICKLER: We have the testimony.

7 THE WITNESS: We just have to get there.

8 BY MR. RICH:

9 Q. Page 29, Figure 1.

10 A. Yeah, if you could blow up the figure,
11 that's what we're talking about, that would be
12 great.

13 Okay. So this is really worthy of a
14 moment's -- some time. So these are Professor
15 Willig's data. This is the time period he looks at.
16 What is being measured is number of performances of
17 these various types of services.

18 And this is performances just as we
19 described the definition earlier, a performance
20 being one play of one track for one person. Okay?

21 So the red is Sirius XM. The green is
22 non-interactive services. And the blue is
23 interactive, which a video has been included in
24 that, too.

25 So first I would just point out these

1 series, time series do not move closely together
2 over time.

3 Q. What is the significance of that fact for
4 his concern?

5 A. And I'm saying that just eyeballing it.
6 We -- we know this is true by looking at their
7 correlations, and we can measure that, but the
8 significance is that his assertion that you can't
9 break out the effects of the different services does
10 not appear to be true, just looking at this, because
11 they don't move so closely together, so you would
12 think there is just -- again, eyeballing, before we
13 go to the econometrics -- that they are not that
14 multicollinear. We should be able to separate out
15 the effects, or it sure looks that way, when we do
16 the regression.

17 Q. And did you further test this
18 empirically?

19 A. Yes. So basically I ran his regression
20 exactly the same way, separating out the variables.
21 All the econometric tests show that -- what I just
22 said, that we are able to separate out the effects.
23 There is no problem with that. These are standard
24 econometric tests.

25 These are -- hold on one moment. This is

1 all in Appendix B to my written rebuttal testimony,
2 which I don't propose we go there, but that's where
3 it is.

4 And what I found then was a striking
5 reversal of what Professor Willig had obtained in
6 his regressions.

7 Q. Now, am I correct that Professor Willig,
8 by his regression, purported to show for this
9 cumulative body of streaming services a loss of
10 about 800 million dollars over the time period he
11 tested?

12 A. Yes. So this is from Table 1 in
13 Professor Willig's written direct testimony. My
14 revision is Table 2, which is just -- we don't need
15 to go there necessarily, but it is just a few pages
16 ahead of what we're looking at now. It is on page
17 32 of my written rebuttal testimony.

18 And what I -- what he showed, his finding
19 was that the streaming services together, all
20 together, including Sirius XM, had a negative impact
21 on record company revenue, what he calls creator
22 compensation, of 813 million dollars a year, that
23 is, the growth of streaming had had that negative
24 impact. And --

25 Q. Shall we pull up the Shapiro revision of

1 Table 1 for the Judges? Would that be helpful?

2 A. It is a great table but I think we're
3 trying to move things along, so I tend to think not.

4 Q. Okay. Go ahead.

5 JUDGE STRICKLER: Was that 813 million
6 dollars per year or for the cumulative period?

7 THE WITNESS: Per year. What he has done
8 takes a little while. He has looked at the growth
9 in streaming over a five-year period, or from 2010
10 to 2016, and then what's the impact on an annual
11 basis of that is what he is trying to measure.

12 BY MR. RICH:

13 Q. And when you were able to overcome the
14 so-called multicollinearity problem and isolate out
15 the correlation between performances on Sirius XM
16 and impact on download sales, what were you able to
17 conclude?

18 A. So this is reported on page 30 of my
19 written rebuttal testimony. And I found that the
20 impact of Sirius XM on downloads was strongly
21 promotional. The impact of interactive plays on the
22 downloads was negative, that is, substitutional.

23 And the impact of non-interactive
24 services was very slightly promotional, but not
25 statistically different from zero.

1 The key point being -- well, and the
2 overall impact was highly positive of these three
3 services put together on digital downloads using his
4 methodology.

5 So this really was a striking, actually,
6 reversal of his results, simply by separating out
7 the three variables, and there was no problem
8 econometrically, in terms of multicollinearity,
9 doing that.

10 Q. And I took you down this path without
11 allowing you to respond to the second asserted
12 limitation on doing exactly what you have now done,
13 which is, I take it, that the different types of
14 streaming, according to Professor Willig, are
15 substitutes for one another?

16 A. That's right. That's correct.

17 Q. Could you respond to that criticism or
18 that asserted reason for not being able to do what
19 you do in your -- in the table you just described?

20 A. Yes. Thank you.

21 So this is explained in more detail in
22 Appendix B. Basically there are some -- as an
23 econometric matter, the fact that these independent
24 variables may have some relation -- the different
25 services and the usage of them may be related due to

1 substitutional effects does not take away from the
2 value of separating them out.

3 I, overall, this whole methodology that
4 Professor Willig is approaching has some
5 limitations. Okay?

6 That's true, whether you do his
7 aggregated version or my version, which is broken --
8 breaking them out. And because of those overall
9 limitations, I wouldn't put a lot of weight on any
10 of this, actually, what he did. I wouldn't
11 specifically use the parameter estimates I got
12 either.

13 But whatever objection he has to the
14 disaggregated version I have in terms of these
15 variables being related, it also applies to what he
16 did.

17 And so in the end I feel it is very clear
18 from this econometric analysis and just looking at
19 these data that he does not have a sound empirical
20 basis for claiming this -- a negative impact of
21 Sirius XM listening on digital downloads.

22 That, I think, is -- I am highly
23 confident in saying that, trying to get past too
24 many details of the econometrics.

25 Q. Now, is it accurate that Professor Willig

1 ran a second regression analysis?

2 A. Yes, that's correct.

3 Q. What was that attempting to demonstrate?

4 A. Well, there he did try to isolate out
5 Sirius XM and the impact of Sirius XM in particular
6 on listening on interactive and non-interactive
7 services.

8 Q. As opposed to impact on download sales?

9 A. Exactly. So he is looking at a different
10 variable that is being impacted, what we would call
11 streaming, actually, interactive and non-interactive
12 services.

13 Q. And did you examine this regression
14 analysis?

15 A. Yeah, so he again -- well, I should say
16 the first regression analysis, in the end, he
17 doesn't use it for his rates. Okay? It is more
18 background.

19 This one I examined, he is using this as
20 part of his claim that licensing music to Sirius XM
21 has an opportunity cost by substituting for
22 interactive services in particular. So that's how
23 he is using this.

24 So this second one he is using as part of
25 his key element of his analysis, which is

1 opportunity cost. And so I looked at that in
2 particular to see -- to test his assertion that more
3 sales of Sirius, more listening on Sirius XM
4 negatively impacts listening on interactive
5 services.

6 Q. And what did you find when you looked
7 more closely?

8 A. So I found that that result was also
9 reversed with a simple -- and I think
10 strongly-indicated change -- to his regression
11 analysis.

12 Q. Perhaps you could explain that again by
13 reference to Figure 1 on page 29.

14 A. I would be happy to. So if you look at
15 the data here, just look at it eyeball, which I
16 always think is good before you turn to
17 econometrics, the interactive plays, the blue, it is
18 essentially zero on this scale until we get into
19 2011, and then it really takes off.

20 On the other hand, Sirius XM, the growth
21 is really occurring -- well, through around 2009,
22 and then there is continuing growth but it is
23 flatter. So if you are trying to explain the effect
24 of Sirius XM listening on the interactive, the first
25 thing you look at and say: Wow, what happened with

1 interactive, starting in 2011, it really took off?

2 And then if you look around and look at
3 what we know about the interactive services market,
4 you would say, oh, that's when Spotify entered into
5 the United States.

6 And so I basically said, well, that's an
7 event, a significant event, a major player enters.
8 Why don't we allow for that in the econometric
9 specification, and they did that.

10 And by doing that, basically, then
11 Professor Willig's results were reversed.

12 Q. As described in more detail at page 33, I
13 believe it is, of your written rebuttal testimony?

14 A. That's correct. And it then references
15 again --

16 Q. Appendix B?

17 A. -- Appendix B.

18 Q. Thank you. Let's now turn to I think the
19 last significant segment of your testimony on this
20 examination, which is Professor Willig's opportunity
21 cost model.

22 I take it that Professor Willig conducts
23 another analysis that ties more directly to its rate
24 proposal?

25 A. Yes.

1 Q. And can you describe what that is,
2 please?

3 A. Okay. So it would be helpful at this
4 point to go to slide 16 of the overall set of
5 demonstrative slides we have.

6 The centerpiece of Professor Willig's
7 written direct testimony is his calculation of
8 opportunity cost and, in particular, his claim, his
9 assertion that when we -- when a new subscriber
10 signs up for Sirius XM's service, that takes away
11 record industry revenue of -- can I say the exact
12 number? I think I can. Yes, \$2.55 per month,
13 because that subscriber would otherwise be listening
14 to other music in other ways that would generate
15 that amount of revenue per month.

16 That's the fundamental element of his
17 testimony. And, in my view, he has made a major
18 fundamental error conceptually in what he did.

19 Q. What is that major fundamental conceptual
20 error?

21 A. Well, he is calculating the monopoly
22 opportunity cost, that is to say, the cost to the
23 entire record industry associated with one more
24 Sirius XM subscriber. And what is relevant in this
25 proceeding under a willing buyer/willing seller

1 approach is the opportunity cost to one record
2 label, that being the seller in the willing
3 buyer/willing seller situation.

4 So he is looking at the wrong -- he is
5 measuring the wrong thing by looking at the monopoly
6 opportunity cost.

7 I should say, just so we don't forget it,
8 what I am going to do now is explain conceptually
9 why that's wrong. In order to make that clean, I'm
10 going to use his numbers and, in particular, he is
11 relying heavily on the Dhar survey.

12 And so I am just going to use the Dhar
13 survey numbers. And I do that in my written
14 rebuttal testimony.

15 Q. Just before you do that, just to follow
16 up --

17 A. Sorry.

18 Q. -- on your predicate to this, what does
19 Professor Willig's approach assume about Sirius XM's
20 ability to shift plays from one label's music to
21 another?

22 A. He completely excludes the possibility of
23 steering or shifts in play share. That goes
24 hand-in-hand with he is looking at this entirely
25 from the perspective of the entire industry.

1 The notion of steering, the notion of
2 competition among record companies, the notion of
3 workable competition, are completely absent from his
4 written direct testimony and his analysis of
5 opportunity cost. Completely absent.

6 Q. Why don't we now take the Judges through
7 your corrected analysis of how conceptually to think
8 about analyzing and computing opportunity cost.

9 And I gather you have developed and in
10 your written rebuttal testimony set forth a series
11 of models which you think illustrate the examples
12 that would happen in the real world in a competitive
13 market?

14 A. That's right. And I think if we go to
15 the next slide --

16 Q. What number is that?

17 A. 17.

18 Q. 17. Okay.

19 A. So first this just provides a little bit
20 of a roadmap. Where do I do this? I work through a
21 record company's opportunity cost in detail in my
22 own written direct testimony, Appendix D. We
23 already talked about that. I had to do that to
24 compare Sirius XM and Pandora.

25 And then I go into considerably more

1 detail in my written rebuttal testimony, Appendix C,
2 where I am responding to Professor Willig and
3 providing gory details of what I am going to talk
4 about the next few minutes. That's where it is.

5 I should also say, as this slide
6 indicates, that Professor Farrell, there is some --
7 he is also very deeply and carefully looking at
8 opportunity cost here, and you will hear from him,
9 and he does more in this than I -- he goes further
10 than I do in some respects.

11 Q. Just for the sake of clarity, I know
12 these charts are summary, but the first bullet under
13 Shapiro written direct testimony Appendix B and
14 written rebuttal testimony Appendix C, it says how
15 to calculate record company opportunity.

16 Is the correct interpretation you want to
17 give that how to correct an individual record
18 company's opportunity cost in an effectively
19 competitive market in general?

20 A. Yes. So that's what was emphasized in
21 the previous slide, but I will talk -- I think it is
22 helpful, probably for this reason of nomenclature, I
23 will talk about the opportunity costs to Warner of
24 having more of its performances played on Sirius XM.

25 And yesterday we spent some time talking

1 about the quantity measure or output as
2 performances, we clarified the definition of that
3 with the Chief Judge earlier today, and so that's
4 what I mean, a single record company's opportunity
5 cost of having its music played more on a service,
6 and we're going to focus on Sirius XM.

7 Q. And you are using Warner strictly for
8 illustrative purposes, not because of any particular
9 attributes it either shares or doesn't share with
10 other record companies, correct?

11 A. That's correct. And in my tables to my
12 written rebuttal testimony, I do the same
13 calculations for Sony and Universal and for an
14 Indie.

15 Q. Okay.

16 A. I was going to say that it is helpful, I
17 think, that I say Shapiro, Willig and Farrell all
18 agree that opportunity cost is a key concept,
19 captures promotion and substitution effects, and Mr.
20 Orszag as well uses opportunity costs, and I think
21 it is fair to say he would agree with this as well.

22 Q. So shall we move into slide 18 and your
23 testimony relating to that?

24 A. Yes, and I think we can go quickly
25 through this.

1 Q. You have laid some of the predicates for
2 this throughout your testimony today and yesterday,
3 correct?

4 A. Yes. So opportunity cost is the cost to
5 Warner -- I will just use that just to make it a
6 little more specific -- the cost to Warner of having
7 its music played more on Sirius XM, and that's going
8 to come in the form of -- to the extent that that
9 causes its music to be listened to less on other
10 services, and, therefore, take away from Warner's
11 revenue.

12 The second point here is that it is very
13 important here, this is so critical, in thinking
14 about what happens when Warner tries to get its
15 music played more on Sirius XM is to distinguish the
16 upstream steering, just Sirius XM plays more Warner
17 music, that in itself is not going to cost Warner
18 anything.

19 And then -- so that's upstream. And then
20 downstream, to the extent that this music is being
21 played and there are more Sirius XM subscribers,
22 then we can start to bring in some costs to Warner,
23 if those subscribers are shifting from other
24 services that generate revenue.

25 So it is very important to talk about the

1 upstream and downstream substitution patterns.
2 Professor Willig has completely left out the
3 upstream, and that's the main event.

4 Q. And by leaving out upstream, as I think
5 you just said, but I want to punctuate the point as
6 I understand it, left out any of the dynamics of
7 steering that one would expect to be taking place in
8 an effectively-competitive market?

9 A. The dynamics of steering or competition
10 of any sort among the different labels for play
11 sharing. He assumed fixed play shares and took the
12 perspective of the entire industry, did not even ask
13 the question of what it would look like from a
14 single record company's point of view, much less how
15 they might try to get bigger share, at least in his
16 written direct.

17 Q. How does slide 19 advance this
18 conception?

19 A. I think we can skip over 19. We have
20 done that already --

21 Q. Okay.

22 A. -- yesterday and we have covered that.

23 Q. So how many scenarios are you presenting
24 to the Judges this afternoon to make your point?

25 A. I think we're going to have four

1 scenarios. But I should explain, scenarios of what?
2 Why are we talking about scenarios?

3 In order to show you how opportunity cost
4 works as a concept and ultimately can be calculated,
5 I think it is necessary to talk about what is the
6 mechanism by which Warner is getting more plays on
7 Sirius XM? That's what we're talking about,
8 increasing their output, more plays. How does that
9 happen? Let's just explain it.

10 And so those are the scenarios, different
11 ways in which that can happen.

12 Q. And what does your baseline tell us?

13 A. So in order to talk about --

14 Q. Slide 20.

15 A. Slide 20. Thank you.

16 In order to talk about Warner getting
17 more plays on Sirius XM, we first need a starting
18 point from which they are going to grow. So slide
19 20 shows a starting point.

20 And all these slides now are going to be
21 broken up with a -- the top half being Sirius XM,
22 the lower half being interactive services, maybe I
23 will just say Spotify, because we're talking about
24 that's where the opportunity cost is going to come
25 from. So we will track those, too. So this is the

1 starting point.

2 The pie chart in the upper half
3 represents the mix of performances of music on
4 Sirius XM by label, and the lower half does the same
5 thing on interactive services of, I will say,
6 Spotify. So that's our starting point.

7 And we have drawn it to where Universal
8 is the biggest, then Sony, then Warner, and then a
9 large number of smaller independents.

10 Q. And so your first variation from the
11 baseline is what you call a pure steering -- this is
12 slide 21 -- pure steering scenario, which you
13 indicate generates a zero opportunity cost, correct?

14 A. That's correct.

15 Q. Please explain.

16 A. So this is -- we did talk about this
17 yesterday, and this illustrates it. So what do I
18 mean by pure steering? So the left-hand side here
19 of the chart was the status quo, baseline, that we
20 talked about in the previous table. And then the
21 right-hand side is what happens after Warner lowers
22 its rate to Sirius XM to get more plays.

23 So that's depicted by the Warner slice of
24 the pie growing. And you see the new part of the
25 Warner slice is highlighted as the gain in Warner

1 plays.

2 What I mean by pure steering is there is
3 no change in the number of Sirius XM subs, basically
4 that we change the mix of the music along the lines
5 I talked about with the Hits 1 channel, and the
6 subs, no change as a result in the number of subs.

7 Q. To be clear, you are not saying that
8 would be the necessary real-world circumstance.
9 This is one of several variations.

10 And in this particular one, you are
11 assuming that there is no change in subs as a result
12 to show the effects, correct?

13 A. Exactly. Conceptually, if that's what
14 happens, then that's what I mean by pure steering,
15 as an example, as the first scenario, then there is
16 no impact at all on interactive services.

17 Subs have not moved around. Consumers
18 have not moved. There is no downstream substitution
19 or movement. And so there is zero opportunity cost.

20 Another way to put this, which I think I
21 did yesterday, this is pure gravy for Warner, they
22 make extra money, and there is no negative effect on
23 them elsewhere.

24 And this, of course, is one of the
25 reasons why various labels are contacting Sirius XM

1 programmers to get their plays increased. There is
2 no opportunity cost to them when that happens.

3 JUDGE FEDER: Professor, are you assuming
4 here that there has been no change in the rate paid
5 to Warner in order to carry out the steering?

6 THE WITNESS: No. I had -- in all of
7 these cases, Judge Feder, I have in mind that the --
8 well, in this case I have in mind that Warner is
9 offering a discount to Sirius XM in order to get
10 more plays.

11 And so I think actually you are
12 anticipating the very next scenario, by the way,
13 because it is natural then to ask: Well, that
14 lowers Sirius XM's costs, and they might lower their
15 price. Okay?

16 So that's one of the scenarios in my
17 written rebuttal. I will talk about that in a
18 moment, if you don't mind.

19 JUDGE FEDER: Please.

20 THE WITNESS: Okay.

21 BY MR. RICH:

22 Q. But under this first pure steering
23 scenario, one question: Do the various surveys that
24 the Judges are going to be immersed in, in not too
25 many days from now, getting at substitution

1 patterns, do they come into play at all under this
2 scenario?

3 A. No. So there are no -- no consumers are
4 adding Sirius XM or leaving Sirius XM. So where
5 people move around when they do that, the downstream
6 substitution patterns, don't come into the analysis
7 here, the opportunity cost is zero, regardless of
8 what those patterns look like.

9 So all the survey stuff is not relevant
10 in this case. It is going to matter in the other
11 cases, but it doesn't matter here.

12 And to the extent that a lot of
13 competition for play share is really about steering,
14 this is going to be a very good guide. And these
15 opportunity costs to the record company are zero, or
16 perhaps very small, if we move away from the pure
17 case.

18 Q. Let's move to another case, your second
19 case, or the second case from your baseline.

20 A. So before we even show that slide, let me
21 tell you there are two things that naturally come up
22 if you think about this case. One you might ask --
23 well, like you asked, Judge Feder, which is, well,
24 if Warner is offering a lower price, maybe Sirius XM
25 will offer a lower price, too, because their costs

1 have gone down and maybe they will get more subs.
2 So we start to have some downstream action, if you
3 will, substitution.

4 That's one of the scenarios in my written
5 rebuttal testimony. I actually wasn't planning to
6 present that because it is, you know, we can do it
7 if you want, but that's one question which you ask.

8 The other thing you would naturally ask
9 is, well, Sirius XM shifted their mix away from
10 let's call it the natural or ideal mix that the
11 programmers would otherwise have selected. They are
12 shifting towards Warner because the Warner music is
13 less expensive.

14 This came up in Web IV and the question
15 was, in fact, whether Pandora would lose subscribers
16 if they steered in one direction or another away
17 from the natural performance rate.

18 So the next scenario -- so far I have
19 assumed here the steering is not causing people to
20 leave the service.

21 And the other natural question to ask is,
22 well, what if there are a bunch of people who notice
23 that Warner is being played once more song every
24 three hours, and they don't like it, and so they
25 leave? So that's the next scenario.

1 Q. Walk us through that scenario.

2 A. Okay. So that is slide 22. So this
3 could be a little mind-bending here so I am giving
4 you a little warning.

5 In this situation, because of the
6 steering, some of the Sirius XM subscribers don't
7 like the mix and so they leave. Now, that's
8 depicted here, in the right-hand side, the Sirius XM
9 pie shrinks somewhat. And it says: Decrease in
10 Sirius XM subs.

11 Now, Warner is getting a larger share of
12 the pie, but the pie is a little smaller. For this
13 to make sense for Warner, they better be getting
14 more in total. And that's what is shown here.

15 So Warner gains plays. But now we want
16 to know what about opportunity cost? What about
17 Warner's revenues for interactive services? And
18 here is the mind-bending part that only economists
19 could love. And this is why it says negative
20 opportunity cost.

21 Well, if you think through the logic,
22 Sirius XM lost some subs. Some of them will go to
23 interactive services. That's where the survey
24 evidence comes in. Whatever the number is, that's
25 depicted here in that the rectangle on the lower

1 right-hand side is a little taller than the one on
2 the left, and that dark black line there, the little
3 slice at the top of the rectangle shows how many
4 more interactive subs there are there.

5 And those, they will be listening to
6 music, they will, of course, be listening, and that
7 will create more plays for all of the record
8 companies on, say, Spotify.

9 Warner's share of that is the yellow box.
10 They get some of the extra plays on the -- in
11 interactive on Spotify's subscribers. But that's
12 extra plays. So from Warner's point of view, this
13 is a great arrangement.

14 They cut the price to Sirius XM, the play
15 share goes up, some Sirius XM subscribers leave, and
16 Warner gets a boost from that, because it is
17 interactive as a substitute for Sirius or to the
18 extent that's true.

19 Since it is a boost, that's a negative
20 opportunity cost. Okay? So this tells us that,
21 first off, the peer steering craze is not some sort
22 of extreme way off of the edge with zero opportunity
23 cost. If we have this effect where subscribers
24 leave Sirius XM because the play share mix has
25 changed, we get a negative opportunity cost and,

1 therefore, it is even more attractive for Warner to
2 make this type of offer. Okay?

3 We're still very far from, really far
4 from where Willig is going to end up. I am just
5 building up to that.

6 Q. And, again, just to raise the question
7 here on this set of assumed facts, how do the
8 various survey results come into play?

9 A. So here we do want to know how much -- to
10 what extent people shift from Sirius XM to Spotify
11 when they are dissatisfied with Sirius XM.

12 By the way, it is not in response to a
13 price increase at Sirius XM. It is in response to a
14 change in the music mix, a quality reduction from
15 the point of view of the listener, but that's what
16 the survey evidence comes in.

17 And to measure how much -- the extent to
18 which those subs switch over to Spotify, that's
19 where we need the survey evidence. And in this case
20 the closer substitute Spotify is for Sirius XM, the
21 more negative the opportunity cost is because this
22 slice here that is growing is bigger.

23 By the way, I should say when people
24 leave Sirius XM, I am just showing interactive
25 services. We know, have every reason to believe,

1 most of the listening would go to terrestrial radio,
2 and that doesn't generate any revenue.

3 I am focusing on the type of downstream
4 substitution that is at the heart of Professor
5 Willig's analysis and really drives his analysis,
6 namely, interactive, paid interactive services.

7 You can see in the table of his that we
8 looked at earlier, that's the lion's share of his
9 opportunity cost that he calculates. So that's why
10 I am emphasizing this.

11 Q. Thank you. Shall we move to your next
12 slide and your next scenario which you styled
13 Decision to License? What do you mean by "decision
14 to license"?

15 A. So this is -- we're getting pretty close
16 now to what Professor Willig did. This is the
17 question of whether Warner wants to make its music
18 available to Sirius XM or not, not just the rate,
19 but do they withhold the music. Okay?

20 Both -- I have been talking about --
21 well, Professor Willig often talks about if Sirius
22 XM -- if the record companies deny their music to
23 Sirius XM, how much more money they will make
24 elsewhere. I think for the purposes of this
25 illustration, it is useful to run this in the other

1 direction, which is suppose you start with a
2 situation where Warner is not licensing and they
3 choose to do so. Okay?

4 Q. So you go from your universe on the left
5 at the top left quadrant where they are not at all
6 licensing and over on the right they appear in the
7 circle for the first time, right?

8 A. Yeah, and the right-hand panel here
9 corresponds to the baseline case. So I think, too,
10 you want to ask yourself does it make sense for
11 Warner to go ahead and license to Sirius XM or
12 should they withhold? And that's the left-hand
13 side, where they are not licensing, so they have got
14 no music on Sirius XM.

15 So let me walk through the logic here.
16 Going from left to right, if Warner says: Well,
17 let's see, we're not licensing -- that's why there
18 is no Warner slice there in the upper left-hand
19 corner -- if we make our music available to Sirius
20 XM, we will get our share. That's the share shown.

21 And that will lead to additional Sirius
22 XM subs because they will have Warner music. And we
23 have talked a lot about how important that is to
24 have the Warner music. So that's the game that
25 Warner plays, the whole red slice there in the upper

1 right.

2 Now, what's the opportunity cost in this
3 situation? Well, when Sirius XM gains all those --
4 gains those subs, they are coming at the expense to
5 some degree of Spotify.

6 So if we look in the lower panel, there
7 will be a decrease in the number of subscribers on
8 Spotify, and that means Warner will lose some plays,
9 the yellow box. Okay? That's their share of the
10 performances and the money on interactive services.

11 So the opportunity cost is that yellow
12 box there on this diagram, that is to say, again, by
13 choosing to make its music available to Sirius XM,
14 Warner gains the red pie slice but they lose the
15 yellow box. Okay? And that does depend on how much
16 the Sirius XM listening and subscribers come from
17 Spotify. So the downstream survey data does matter
18 here.

19 Q. Just with respect to that yellow piece of
20 this?

21 A. That's right.

22 Q. Measuring that?

23 A. That's right.

24 Q. Okay. And what does this scenario imply
25 for rate-setting?

1 A. So this is telling us that the closer the
2 substitution is between these two types of services,
3 that would lead to a higher opportunity cost, the
4 bigger yellow box, and the higher rate, but we need
5 to be very careful calculating it because a lot of
6 the substitution that is going on is upstream, that
7 is, Warner is gaining a big play share from zero to
8 some, you know, their natural share, let's say, so
9 there is a lot of upstream substitution going on.

10 You can call it steering, but it really
11 is just making the music available instead of not.
12 And then we also need to track downstream
13 substitution. But a key point here is you cannot
14 properly evaluate opportunity cost just by looking
15 at downstream.

16 The first place to look is upstream.
17 That's where they get the additional plays. And
18 then you have to look downstream as well.

19 Professor Willig skipped over the first
20 step, the main thing, and then went to the second
21 because he didn't look at any changes in play
22 shares. If you look across all these scenarios, the
23 Sirius XM pie is shifting toward Warner. And he is
24 not even allowing that.

25 Q. Let's turn to your final slide. What

1 does this depict?

2 A. So this is now -- this is a must-have
3 label deciding whether to license to Sirius XM. So
4 it is just like the last slide, except by must-have,
5 in the upper left-hand corner, we're assuming now --
6 let's say Warner is must-have, that if Warner does
7 not license to Sirius XM there is no music service
8 on Sirius XM.

9 That is what Professor Willig explained
10 in his deposition that he would be assuming.

11 Q. So, in other words, is this scenario
12 portraying what you understand to be the model that
13 Professor Willig develops his opportunity cost
14 analysis based on?

15 A. He --

16 Q. Your interpretation of it.

17 A. Yes, that's better. It is my
18 interpretation. He doesn't talk about individual
19 record companies and their decisions in his written
20 direct testimony. He talks about the whole industry
21 as a group.

22 But when you look underneath that, and in
23 response, in his deposition questions, he is
24 effectively -- again, my interpretation, again, is
25 he is looking at each label being must-have.

1 Professor Farrell will talk more about this.

2 So in his calculations, if Warner doesn't
3 license to Sirius XM, there is no music on Sirius
4 XM, and, if they do, then we have got Warner's
5 normal share. And in that case, Warner's decision
6 to license is a huge thing. It is basically life or
7 death for Sirius XM. So there is a huge increase in
8 Sirius XM subs if they can get the Warner music.

9 And, as a result, because that's so huge,
10 whatever the impact is on interactive services, it
11 gets blown up as well. And so the yellow box in the
12 lower left is much bigger than the one in the
13 previous slide.

14 Warner loses some revenue on Spotify
15 proportional to how much Spotify subscriptions fall,
16 and it is going to -- that will fall a lot more if
17 Sirius XM enters the, you know, lives rather than
18 dies as opposed to simply grows a little bit.

19 So he has dramatically overstated the
20 correct opportunity cost. Conceptually he is
21 measuring that yellow, big yellow box here, and the
22 correct measure for non-must-have label is the much
23 smaller box.

24 Now, I haven't put numbers on that yet so
25 you might wonder what that means. Professor Farrell

1 shows -- has some equations and general theory. He
2 will talk about what a big difference that is.

3 I put numbers on -- do calculations with
4 various scenarios and show that Professor Willig's
5 estimate of opportunity cost, which is \$2.55 per
6 sub, is off by an even larger factor, is off by a
7 very large factor.

8 And let me just quote the right number.

9 Q. Where are you reading from, please?

10 A. So this is in Table C-1, in Appendix C to
11 my written rebuttal testimony. Professor Willig's
12 opportunity cost for Warner under the scenario I
13 developed is 61 times the correct measure. I do the
14 same thing for Sony, 38, in the next table.
15 Universal, 25.

16 And so I think the pieces are here with
17 reasonable numbers that I put in these scenarios,
18 Professor Willig is off by 50 to 100 times,
19 obviously a bit dramatic. Of course, those numbers
20 depend to some extent on the assumptions made. I
21 have explored that extensively. I present a bunch
22 of sensitivity analyses in this appendix. It is
23 very clear to me under a wide range of reasonable
24 assumptions his number is dramatically off.

25 And Professor Farrell goes further by

1 showing -- using some basic theory just how far off
2 Professor Willig's approach is.

3 Q. So by way of a closing question, what is
4 the broadest overall takeaway you would like the
5 Judges to have from the analysis you have just
6 conducted for these four different scenarios?

7 A. Professor Willig's \$2.55 per sub per
8 month opportunity cost to the record industry of an
9 additional Sirius XM subscriber is incorrect,
10 conceptually he asked the wrong question, and that
11 number, which is critical for his whole analysis,
12 should not be used.

13 Q. Thank you.

14 MR. RICH: That concludes my direct
15 examination.

16 JUDGE BARNETT: Thank you. It is a tad
17 early but why don't we take our afternoon recess at
18 this point so we can go straight through on you, Mr.
19 Handzo. 15 minutes.

20 (A recess was taken at 2:26 p.m., after
21 which the hearing resumed at 2:48 p.m.)

22 JUDGE BARNETT: Please be seated. Mr.
23 Handzo, I think we all have our binders now.

24 MR. HANDZO: Thank you. May I proceed,
25 Your Honor?

1 JUDGE BARNETT: Yes, please.

2 CROSS-EXAMINATION

3 BY MR. HANDZO:

4 Q. Good afternoon, Professor Shapiro.

5 A. Good afternoon, Mr. Handzo.

6 Q. Professor -- I can't even talk.

7 A. You have been listening for a while.

8 Q. I have been listening for a while, I'm
9 sorry. Economics just does that to me.

10 I want to start with some questions about
11 your direct licenses that you referred to in your
12 written direct testimony.

13 Now, the rates reflected in the direct
14 licenses between Sirius XM and independent labels
15 are affected by the existence of the statutory rate.
16 Would you agree?

17 A. I do.

18 Q. So, you know, your testimony or your
19 opinion is the statutory rate is a magnet that pulls
20 up the direct license rate, right?

21 A. They are tethered together, yes, that's
22 right.

23 Q. Okay. And you have heard or you are
24 aware that Professor Lys opines that the statutory
25 rate essentially drives the direct license rates

1 down, right?

2 A. Okay.

3 Q. You understand that to be his opinion,
4 right?

5 A. Yes.

6 Q. Okay. But you both agree, don't you,
7 that the existence of the statutory rate has an
8 impact on the direct license rates, right?

9 A. I think so.

10 Q. Okay. So, for example, the statutory
11 rate is a ceiling on what a service will pay, isn't
12 it?

13 A. Yes, it is.

14 Q. And even if in an unregulated market
15 there would have been agreements at rates above the
16 statutory rate, you won't see them where there is a
17 statutory rate, correct?

18 A. I think that's correct.

19 Q. Conversely, where there is a statutory
20 rate, direct licenses, if they exist, are always
21 going to be at lower rates, right?

22 A. They can't be above, that's correct.

23 Q. Okay. So they will always be lower if
24 they are there?

25 A. Well, I assume this whole discussion is

1 setting aside non-statutory benefits, for example.

2 Q. Okay. Let's go with that. You would
3 agree in that circumstance that the direct license
4 rates are always going to be lower than the
5 statutory rates, correct?

6 A. So if a -- if a label is agreeing to
7 license -- excuse me. If a service is agreeing --
8 would not agree to the same rights at a higher rate,
9 so if we see a license for the same rights with
10 nothing else changing, it could only be at or below
11 the statutory rate.

12 Q. Okay. So that's something that you have
13 to take into account when you are considering direct
14 licenses that are negotiated in a statutory setting,
15 right?

16 A. Yes.

17 Q. Now, the interactive services are not as
18 influenced by statutory rates. Would you agree?

19 A. I would. I do.

20 Q. And so in that sense the interactive
21 services are a better benchmark than direct
22 licenses, aren't they?

23 A. Simply looking at that factor, the impact
24 or shadow of the statutory rate, I would agree with
25 that point.

1 Q. And you also, I think, agreed earlier
2 today that with respect to the direct licenses
3 between Sirius XM and various Indies, if they were
4 not motivated by steering, they are not informative
5 for the purposes of this case, correct?

6 A. That's what I said. That's correct.

7 Q. And if Indies entered into direct
8 licenses for a mix of reasons, we would need to
9 somehow untangle how much of those reasons involve
10 steering and how much involve other things in order
11 to understand their relevance, wouldn't we?

12 A. No.

13 Q. Okay. Wouldn't you agree that to the
14 extent that we can unravel them, we need to
15 understand -- need to do that to understand them?

16 A. Well, the more you can unravel, I guess,
17 you would have a greater understanding, but that may
18 or may not be important for the rate-setting
19 exercise.

20 Q. Let me ask you -- can we bring up the
21 SDARS deposition, pages 120 and 121 -- let me ask
22 you, Professor Shapiro, you have your deposition in
23 this case on the screen. And you see starting at
24 line 17, I asked you:

25 "Question: If Indies entered into direct

1 licenses for a mix of reasons, part of which is
2 steering and part of which is some non-statutory
3 benefit, do we need -- in your opinion, do we need
4 to somehow untangle how much was steering and how
5 much is non-statutory benefits in order to
6 understand the relevance of that agreement to this
7 analysis?"

8 And your answer was "yes." And then
9 following that: To the extent that we can, it's
10 relevant. Do you see that?

11 A. I do.

12 Q. Okay. Do you still agree with that?

13 A. Yes, it is relevant. We don't need to --
14 what was the question exactly -- untangle the
15 magnitudes, I thought you asked about earlier, in
16 order to, to use these agreements, but it is
17 certainly relevant, good to know, if you can figure
18 it out.

19 JUDGE STRICKLER: How would it be
20 relevant? How would the untangling be relevant?

21 THE WITNESS: Right. So for the exactly
22 same sliding scale type of reasons we talked about
23 earlier, if you thought that the other benefits of
24 the statutory license is not steering explain the
25 lion's share of the discount for most of the labels

1 who entered into them, then you put much less weight
2 on these direct licenses.

3 JUDGE STRICKLER: And why don't you need
4 to do the untangling to find out which way the
5 lion's share goes?

6 THE WITNESS: So what I testified to is
7 if we -- if you conclude that the steering was a
8 significant benefit for a significant number of
9 these -- of the Indies, then that's informative
10 regarding the competitive rate, and that's how I
11 have used them.

12 There is going to be a range then in the
13 sense -- it would be useful, if you could untangle
14 and quantify the differences, you would know then
15 whether you are at 9.87 percent, my calculation, or
16 maybe it should be 10.2 percent, if you could
17 quantify more of the benefits that were associated
18 with non-statutory benefits.

19 I took out the part I could quantify,
20 which were the SoundExchange administrative fees.
21 If you could quantify more of these other benefits
22 in the same way, it would be reasonable, and that
23 was pretty uniform or general across the license, it
24 would be -- make sense to adjust for that, too, and
25 that would pull things up.

1 I did an adjustment that pulled up from
2 9.42 percent to 9.87. If you took out more of these
3 items, you could get that 9.87 drifting up a bit
4 further. It would be relevant.

5 JUDGE STRICKLER: But you need evidence
6 as to the value of those overrides in order to do
7 the calculation?

8 THE WITNESS: Yes, that's the problem.
9 You see, in order to quantify it, you need evidence.
10 And then you would also have the issue about, if you
11 could quantify it for one Indie, does it really
12 apply to others, unless it is something uniform.
13 The administrative fee is uniform.

14 JUDGE STRICKLER: So you felt there was
15 sufficient ability or sufficient evidence to show
16 how to quantify the administrative fee and also the
17 value of steering, but none of the other elements of
18 value?

19 THE WITNESS: Well, definitely
20 administrative fee. I cannot quantify the value of
21 steering. I am attributing -- I'm saying there is a
22 value of steering but I can't quantify it as a share
23 of the values that -- of the benefits that an
24 independent label is getting.

25 JUDGE STRICKLER: If you can't quantify

1 it, does that mean you can't say whether it is or is
2 not zero?

3 THE WITNESS: No, it is a different
4 statement.

5 JUDGE STRICKLER: I know. That's why I
6 am asking a different question.

7 THE WITNESS: Oh, wait. Maybe I didn't
8 understand. So --

9 JUDGE STRICKLER: You said you can't
10 quantify the value of steering. If you can't
11 quantify the value of steering, how do you know it
12 is not zero?

13 THE WITNESS: Well, take Mr. Barros'
14 testimony, for example, from Concord, the evidence
15 we have. He is acknowledging that was -- I don't
16 know exactly what his language was -- a benefit.
17 And so I am looking at that evidence. I am looking
18 at the other evidence that is more qualitative from
19 Mr. White, for example. And I don't have a way to
20 quantify it, but I still think that evidence is
21 relevant.

22 JUDGE STRICKLER: So you think
23 qualitative evidence is an arrow pointing in a
24 particular direction, but quantification, there is
25 just no evidence to support quantification?

1 THE WITNESS: I don't have quantitative
2 evidence that I could use for further adjustment.

3 JUDGE STRICKLER: Thank you.

4 BY MR. HANDZO:

5 Q. Now, with respect to steering as a motive
6 for direct licenses, in Web IV, you had empirical
7 evidence of steering by Pandora, did you not?

8 A. Yes, we did.

9 Q. Okay. And you also in Web IV had
10 measurable evidence of steering by iHeart, right?

11 A. I am trying to remember. Yes, that's
12 correct.

13 Q. Okay. But in this case you have not
14 looked at any empirical data to measure whether and
15 to what degree Sirius XM is steering in favor of
16 direct license labels; is that right?

17 A. That is true.

18 Q. Now, in your opinion, Professor Shapiro,
19 Sirius XM has the technical ability to steer, right?

20 A. I think I said that and you seem to
21 emphasize it in your opening statement.

22 Q. Unfortunately my opening statement isn't
23 evidence, so.

24 A. Well, I wasn't relying on it.

25 Q. Okay. I mean, you are welcome to.

1 A. I do believe that Sirius XM has the --
2 what was the word -- the technical ability to steer.

3 Q. And, in fact, it has always had that
4 ability to steer, hasn't it?

5 A. I don't see why not. I haven't gone back
6 in time. I don't see why that wouldn't be true, but
7 I don't know for a fact.

8 Q. Okay. But there is no recent
9 technological change that has made Sirius XM able to
10 steer now when it wasn't able before, right?

11 A. No, I don't think so. I mean, this is
12 human programmers, you know, deciding mix of music.
13 What you need is the programmers have to have a way
14 of knowing which label is associated with which
15 piece of music so they could implement steering.

16 That's not a technical thing. It might
17 be easier now than it used to be, but that's not a
18 -- that's not a major technical issue.

19 Q. So for a service to engage in steering,
20 it needs to have the economic incentive as well as
21 the technical ability, correct?

22 A. I wouldn't expect a service to do so
23 unless it had the economic incentive and was
24 profitable to do so.

25 Q. Okay. I think that's another way of

1 saying what I just said, but let me make sure.

2 If a service has the technical ability to
3 steer, it is still not going to do it unless it also
4 has the economic incentive, right?

5 A. I would accept that as a good -- as a
6 reasonable way of viewing things.

7 Q. Okay. And one of the things that will
8 affect a service's incentive to steer is the cost of
9 doing so. Isn't that right?

10 A. Yes.

11 Q. And by steering towards lower priced
12 sound recordings, a service might depart from what
13 would otherwise be the optimal mix of music for it,
14 correct?

15 A. Yes.

16 Q. And if users of the service respond to
17 that change in the mix of sound recordings by
18 decreasing use of the service or ceasing use
19 entirely, that can be a cost to the service. Would
20 you agree?

21 A. I would.

22 Q. So when a service considers steering, it
23 has to think about what steering might cost it in
24 terms of lost revenue from potentially dissatisfied
25 users; is that right?

1 A. That's fair.

2 Q. And the higher the cost of steering, in
3 terms of lost revenue, the less incentive the
4 service has to steer. Do you agree?

5 A. Other things equal, yes.

6 Q. And the less the incentive to steer,
7 because of the cost of doing so, that would
8 translate into greater bargaining power for the
9 record label; is that right?

10 A. I guess it is going to depend on the
11 exact context. I am not going to disagree, but let
12 me give a qualified yes until I understand more what
13 the bargaining context is.

14 Q. Well, to put it another way, the
15 incentive of a service to engage in steering relates
16 directly to the elasticity of demand for the buyer,
17 right?

18 A. The service, you mean, as being the buyer
19 there?

20 Q. Yes, sorry, that's right.

21 A. That is true, yes.

22 Q. Okay. And so if steering is costly for a
23 service in terms of the consumer revenues that it
24 might lose, that results in a lower elasticity of
25 demand for the sound recording input; is that

1 correct?

2 A. That's fair, yes.

3 Q. Now, Sirius XM's costs of steering may be
4 different from Pandora's, would you agree?

5 A. Yes.

6 Q. And Pandora was in Web IV and is still
7 mostly an ad-supported service, right?

8 A. Yes.

9 Q. And the steering incentives may be
10 different for an ad-supported service compared to a
11 subscription service, correct?

12 A. That is possible.

13 Q. So if steering causes an ad-supported
14 service to lose listener hours, that could result in
15 some lost advertising revenue, for example; is that
16 right?

17 A. Yes.

18 Q. But if steering causes a subscription
19 service to lose subscribers, that could be a more
20 significant revenue hit, couldn't it?

21 A. Well, this all depends on the specifics.
22 There would be no revenue hit, for example, to
23 Pandora's ad-supported -- excuse me, subscription
24 service, if steering caused them to lose listener
25 hours, and they would actually save money, at least

1 under a per-play rate, at least they used to be,
2 while that is different, it is more of a problem on
3 the ad side because they lose ad revenue, and then
4 you could imagine kind of if you get to the point
5 for some -- for an individual subscriber where they
6 stopped subscribing, that is a bigger deal than one
7 listening hour, but that is more of a monthly thing,
8 so it really depends on the particulars.

9 Q. Okay. But we can agree, can't we, that
10 the financial repercussions for an ad-supported
11 service and a subscription service are going to
12 operate in different ways?

13 A. I agree with that.

14 Q. Now, in Web IV, you considered Pandora's
15 use of its algorithms as important to its ability
16 and incentive to steer, didn't you?

17 A. Yes. This is how they implemented the
18 steering experiment, for example.

19 Q. Okay. And I am going to ask you to look
20 at your written direct testimony in Web IV, which I
21 believe you should have there and it is Exhibit 669,
22 I believe.

23 A. Okay.

24 Q. Do you have that with you?

25 A. I do.

1 Q. Okay.

2 MR. HANDZO: And since I am going to ask
3 Professor Shapiro some questions about his testimony
4 there, I guess I might as well move it into
5 evidence. I believe it is not objected to.

6 MR. RICH: No objection.

7 JUDGE BARNETT: 669 is admitted.

8 (Sirius XM Exhibit Number 669 was marked
9 and received into evidence.)

10 BY MR. HANDZO:

11 Q. Can you turn to page 16 of that exhibit,
12 Professor Shapiro?

13 A. Can you say that again, please?

14 Q. Sure. Actually, before I go there, I
15 guess I should just confirm, do you recognize this
16 as your written direct testimony from the Web IV
17 case?

18 A. I have lost it now, I'm sorry. Tell me
19 the exhibit number again?

20 Q. It is 669.

21 A. There is nothing here under the tab for
22 669.

23 Q. We may have camouflaged it as
24 Exhibit 304.

25 A. I am looking.

1 Q. I think it is the next one after the one
2 you were just looking at.

3 A. I'm sorry. I'm sorry. I just don't see
4 it here.

5 JUDGE FEDER: It is the fifth tab in
6 mine.

7 THE WITNESS: After that comes 301, 2, 3,
8 and then some other stuff. So --

9 MR. HANDZO: We have no shortage of
10 copies.

11 JUDGE STRICKLER: Before you go to the
12 witness, the clerk might need to talk to you about
13 what you are giving the witness.

14 JUDGE BARNETT: She is going to need to
15 mark whatever --

16 THE CLERK: 669?

17 JUDGE BARNETT: 669.

18 THE WITNESS: I think everybody's binder
19 has it except mine.

20 BY MR. HANDZO:

21 Q. We just assumed you would remember.

22 A. We could do it that way. I think he
23 would rather not.

24 Thank you. Okay. I now have my written
25 direct testimony from Web IV on behalf of Pandora.

1 Q. Okay. And just for the record, that is
2 your written direct testimony from Web IV, right?

3 A. Yes, it is.

4 Q. Okay. So if you would turn to page 16,
5 please. And do you see sort of in the middle of the
6 page there is -- you say "Pandora's flexibility is
7 directly related to its use of an optimizing
8 algorithm to select playlists. The key point is
9 that Pandora can selectively increase and decrease
10 performances of recorded music in a manner that is
11 highly attuned to the preferences of listeners.
12 This may involve little or no steering for listeners
13 who are picky about their music or on stations
14 seeded with particular artists, along with a great
15 deal of steering for listeners who are relatively
16 indifferent to the music they hear, or on stations
17 seeded by particular artists."

18 Do you see that?

19 A. I do.

20 Q. Okay. And that was something you
21 considered important for Pandora in Web IV, wasn't
22 it?

23 A. I think that it was -- contributed to
24 their steering ability, yes.

25 Q. Okay. Now, Sirius XM does not have the

1 flexibility that Pandora had, does it?

2 A. They can't individualize things like that
3 in that way, that's correct.

4 Q. And they can't -- "they" being Sirius
5 XM -- can't monitor the effects of steering the way
6 Pandora could, right?

7 A. That's correct. This is a point I make
8 explicitly on page 57 of my written direct
9 testimony.

10 Q. Okay. So Pandora through its use of its
11 algorithms was able to monitor whether steering was
12 causing any dissatisfaction in costing it revenue?

13 A. Well, that's what we did in the
14 experiment by monitoring the effect on listening
15 hours. I don't know how Pandora monitored the
16 effects of steering after that point because I have
17 not -- well, I just don't know.

18 Q. Okay. So you used that algorithm as part
19 of your experiment with Pandora in Web IV to see
20 what the impact of steering was, right?

21 A. Yes. The way the experiment was run was
22 the algorithm was modified to steer in certain ways,
23 and that was for the individuals who were the
24 subject of the experiment, and then there were
25 control groups for which no such steering was done.

1 Q. Okay. And that experiment was done to
2 see what the impact of different levels of steering
3 would be on customer satisfaction and use, right?

4 A. Well, we were only able to measure impact
5 on listening hours, not other measures of customer
6 satisfaction.

7 Q. Okay. But you were able to measure the
8 impact on listening hours, right?

9 A. Yes.

10 Q. And you thought that experiment was very
11 important to determining a competitive rate in the
12 Web IV case, didn't you?

13 A. I thought that it was important to
14 demonstrate -- it was certainly helpful, relevant to
15 demonstrate that Pandora could steer certain amounts
16 we were able to study without any meaningful adverse
17 effect on listening hours.

18 Q. So you were able to assess what costs
19 Pandora might incur as a result of steering through
20 this experiment, right?

21 A. That was the point and we were able to
22 assess that to some degree, yes.

23 Q. Okay. And in this case, there are no
24 experiments or no experiments have been done to test
25 the responsiveness of Sirius XM subscribers to

1 steering, right?

2 A. That's correct. It is not possible to do
3 this type of experiment for Sirius XM because they
4 don't have individualized streams, they can't change
5 the service for some consumers and not others, so we
6 couldn't do a controlled experiment in this case.

7 Q. So Sirius XM does not have any
8 experiments that will tell it how many subscribers
9 it might lose if it steers away from what its
10 programmers regard as the optimal mix of music,
11 would you agree?

12 A. Sirius XM has not run such experiments to
13 the best of my knowledge. And I should say, again,
14 experiments, you can't do a controlled experiment in
15 the same way.

16 There are other things they could try to
17 do. This is not something I believe that Sirius XM
18 has explored to measure these impacts in the way
19 we're talking about.

20 JUDGE STRICKLER: What could they have
21 done?

22 THE WITNESS: Well, one thing you could
23 do is change the mix of your music, wait a while,
24 see if -- what has happened to, say, subscribership.
25 The problem with that is it is not a controlled

1 experiment.

2 If the subscribers go down, let's say, a
3 small amount over a period of a few months, it would
4 be very hard to know was that because of this or
5 some other thing that happened.

6 And so I haven't thought of anything else
7 they could try to do, and obviously that would be a
8 significant thing for the company, as opposed to the
9 Pandora experiment, which is, you know, very
10 confined in terms of samples -- in terms of what was
11 done. And it wouldn't be nearly as informative.
12 But you could do something along those lines.

13 JUDGE STRICKLER: Could you combine what
14 you just said together with a survey so that you
15 change the mix of music, you wait, see if there is a
16 change in subscribers, and then follow up with a
17 survey to see why the subscriber level decreased?

18 THE WITNESS: Yes, you could certainly --
19 I mean, normally Pandora like other, any other
20 company, when they lose a subscriber they often want
21 to find out why and they do surveys, these sort of
22 things.

23 So you could certainly combine whatever
24 data you would have on actual ads and drops with
25 some survey information.

1 You know, I think it would be very hard
2 just from -- I am not a survey expert, but from what
3 surveys I read and understand -- to even tease out
4 if somebody -- did you even notice there was a
5 change in the music, if it is a small amount, did it
6 have anything to do with you, when did you drop?

7 Those would seem to be pretty hard things
8 to get at in a survey, but maybe with a large enough
9 sample. There is issues there.

10 JUDGE STRICKLER: Thank you.

11 BY MR. HANDZO:

12 Q. Professor Shapiro, let me ask you to turn
13 to your written direct testimony in this case, and
14 at page 39, which I think is where Rich asked you
15 about earlier today.

16 A. Okay.

17 Q. And on page 39 near the top you talk
18 about looking at the Hits 1 channel and thinking
19 about what would happen if you switched Warner
20 music, I think?

21 A. Yes, that's correct.

22 Q. Okay. But to be clear, that's not an
23 experiment. That's just a thought experiment, if
24 you will? It is illustrative, right?

25 A. Illustrative I think is a good way to put

1 it, yes.

2 Q. And in this illustration you were just
3 looking at one channel, not across Sirius XM?

4 A. That's true.

5 Q. Okay. Now, thinking about the steering
6 incentives from the seller's side, from the record
7 label's side, the seller will be incented to offer a
8 discount if it thinks that the volume increase it
9 gets as a result will more than offset the
10 discounted rate, right?

11 A. That's correct.

12 Q. Is it fair to say that the more confident
13 the seller is that it will get the anticipated
14 increase in volume, the more likely it is to offer
15 the discount?

16 A. That sounds fair, other things equal.

17 Q. Now, in Web IV, there was a direct
18 contractual agreement between Merlin and Pandora
19 that linked the increase in volume to the decrease
20 in rate. Isn't that true?

21 A. There was a commitment by Pandora to
22 steer to a minimum degree toward Merlin music.

23 Q. Right. So if Pandora didn't steer to
24 that degree, it didn't get the lower rates, right?

25 A. There was a provision that handled that,

1 but basically Pandora would not save as much money
2 if they didn't steer the required amount, as I
3 recall.

4 Q. Right. So to make a long story short,
5 Merlin was assured by its contract of getting an
6 increase in volume for a decrease in rate, right?

7 A. That's true. That is correct.

8 Q. So Merlin and Pandora in their contract
9 negotiated not only the price, they negotiated
10 volume as well?

11 A. It was a minimum share of volume
12 commitment, and then that's as indicated, yes.

13 Q. Right. And so those price and volume
14 commitments were then embodied in the contract?

15 A. That's what I recall.

16 Q. Okay. Now, it is true, isn't it, that in
17 order for steering-induced competition to take hold,
18 the prospect that a service will steer needs to be
19 real, right?

20 A. Yes, it has to be -- maybe credible would
21 be a good word I might use, from the point of view
22 of the label.

23 Q. Right. So some amount of actual steering
24 that a label can see and verify really needs to
25 happen in order for that kind of competition to take

1 off, doesn't it?

2 A. Well, see and verify sound more like
3 after you have signed a contract. I guess I would
4 say the prospect of steering could very well
5 convince a label to agree to a discount and then
6 over time it would be reasonable to, a respective
7 label to check and be convinced that they were
8 getting some increased plays in exchange for the
9 discount. Otherwise they might not be inclined to
10 offer it at a renewal date.

11 Q. Now, in this case Sirius XM doesn't
12 actually make any promise that signing a direct
13 license will result in more plays. Is that your
14 understanding?

15 A. It is.

16 Q. You mentioned measuring the impact of
17 administrative costs. I just want to walk through
18 that briefly, if I can.

19 A. Okay.

20 Q. With respect to the reasons why Indies
21 sign direct licenses, all of the Indies that sign
22 the direct license received a benefit in the form of
23 lower administrative costs, right?

24 A. My understanding is that they -- well,
25 under the statutory license, they would all have to

1 pay the SoundExchange administrative fee of
2 4.6 percent, and they all avoid paying that fee by
3 signing the direct license.

4 Q. Right. So, in effect, Sirius XM absorbs
5 whatever administrative costs there are of
6 administering through the license process, right?

7 A. At least they relieve the label of having
8 to pay that fee. That's what I know. And that's
9 why I have made the correction -- adjustment.

10 Q. Okay. And skipping all of the math, on
11 average, taking into account the administrative fee,
12 is it right that direct license labels as a group
13 were giving a 6 percent discount from the statutory
14 rate? I probably said that wrong.

15 A. Okay. Do you want to try again then?

16 Q. Well, let's walk through the math then.
17 I was trying to avoid it.

18 A. Try again and I would be happy to move
19 forward. I didn't get it.

20 Q. If you take into account the fact that
21 direct license labels were avoiding having to pay
22 the SoundExchange administrative fee, in effect the
23 average discount below the statutory rate wound up
24 being about 6 percent, right?

25 A. I think that's right. I think that's

1 right. I will go with that.

2 Q. Okay. And just to be clear, because I
3 got confused about this before, it is not a discount
4 of 6 percentage points below the statutory rate, it
5 is 6 percent less than the statutory rate?

6 A. Right. So if the statutory rate were
7 10 percent for round numbers, it would be 6 percent
8 of that, which would be .6 percent lower
9 percentage-of-revenue rate that they would agree to.

10 Q. Right, or 9.4 percent, as I do the math?

11 A. Good. We're on the same page.

12 Q. Thank you. You agree, don't you, that
13 apart from saving the administrative fee, it appears
14 that some Indies were motivated to sign direct
15 licenses by Sirius XM's methodology for calculating
16 royalties?

17 A. Yes.

18 Q. And I think you talked about that
19 methodology earlier either today or yesterday, but
20 can we refer to that as indexing?

21 A. We can and we do.

22 Q. All right. And that's explained on page
23 42 of your written rebuttal testimony, right?

24 A. Yes, that's correct.

25 Q. I think some of my next questions may

1 involve Sirius XM restricted information, I'm
2 afraid, so I may need to invoke the protective
3 order, though I don't think it will apply to Sirius
4 XM folks.

5 JUDGE BARNETT: Okay. Anyone in the
6 hearing room who, other than Sirius XM
7 representatives -- and these are only the
8 organization's representatives, right, no member
9 representatives?

10 MR. HANDZO: If I am understanding you --
11 well, I am not sure I am understanding you, that's
12 probably because --

13 JUDGE BARNETT: Are there label
14 representatives who need to be excluded?

15 MR. HANDZO: Yes, I think anybody on our
16 side of the room needs to be excluded. It is just
17 the Sirius XM folks that can remain.

18 JUDGE BARNETT: Oh, you said Sirius. I'm
19 sorry, I thought you said SoundExchange.

20 MR. HANDZO: I might have. It is quite
21 possible.

22 JUDGE BARNETT: No, you didn't. I
23 misheard. I just see SX in my mind.

24 THE WITNESS: You are not alone in that.

25 JUDGE BARNETT: Okay. Thank you.

1 (Whereupon, the trial proceeded in
2 confidential session.)
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

1 O P E N S E S S I O N

2 BY MR. HANDZO:

3 Q. Now, in Web IV, the Judges established
4 different rates for ad-supported non-interactive and
5 subscription non-interactive services, right?

6 A. Yes.

7 Q. And the ad-supported and subscription
8 services in that case were both non-interactive,
9 right?

10 A. Yes.

11 Q. And the functionality of the rights that
12 both services were getting was the same, correct?

13 A. That's correct.

14 Q. And in Web IV, there was no reason to
15 think that the ad-supported services used any fewer
16 performances per-user than the subscription
17 services, right?

18 A. I think there was reason to believe that.

19 Q. Did you measure any significant
20 difference between the two?

21 A. I think we did. I am not certain.

22 Q. You are not sure?

23 A. I could look through my written direct
24 testimony here. I don't recall right now for sure,
25 no.

1 Q. Okay. The reason for the different rates
2 between ad-supported and subscription services in
3 Web IV was that there was a different willingness to
4 pay by users, right?

5 A. Yes, I think in Web IV the Judges talked
6 about some bifurcation based on positive versus zero
7 and user willingness to pay.

8 Q. Okay. So through the principles of
9 derived demand, the user's lower willingness to pay
10 for an ad-supported service translated into a lower
11 willingness to pay by the service, right?

12 A. For the service, that's different than
13 for the music. Talking upstream or downstream?

14 Q. I will probably get upstream and
15 downstream wrong, so let me reformulate the
16 question.

17 A. Okay.

18 Q. The user's willingness to pay, which is
19 downstream, is lower for the ad-supported service,
20 right?

21 A. Correct.

22 Q. And through derived demand, that
23 translates into a lower willingness to pay upstream
24 by the service, right?

25 A. Okay. I am with you so far. The

1 advertising revenue obviously comes in here as a
2 third-party, not -- but go on. I think you are
3 right so far.

4 Q. Okay. That's -- what I just said is
5 correct?

6 A. I think so.

7 Q. Okay. So at least as between
8 ad-supported and subscription non-interactive
9 services, the rate paid by the service is related to
10 the downstream user's willingness to pay, right?

11 A. As between these two categories, I think
12 that is -- that is fair.

13 Q. Therefore, all else equal, a subscription
14 service will pay more, even if it has the same
15 number of plays per-user compared to an ad-supported
16 service?

17 A. Under the Web IV rates, they do pay more.

18 Q. Okay.

19 A. Per-play.

20 Q. I understand that that's the ruling of
21 Web IV, but I want to get to the underlying
22 analysis. It is correct, is it not, that an
23 ad-supported service, non-interactive, is going to
24 pay less per play than a subscription service
25 non-interactive, even if they have the same number

1 of plays, because there is a willingness, different
2 willingness to pay downstream?

3 A. I think that's correct. That's what the
4 -- that's what my analysis would show and Lerner
5 equation, all that, I think does point that way,
6 assuming there is a similar steering ability between
7 the two types of services and similar opportunity
8 cost, that's correct.

9 Q. So you would agree that a service that
10 appeals to a group of subscribers with a higher
11 willingness to pay will pay overall higher royalties
12 than another service that has similar functionality
13 and same intensity of use but appeals to a group of
14 subscribers with a lower willingness to pay?

15 A. I think if everything else is equal, you
16 haven't mentioned steering, but if everything else
17 is equal, I think that's correct.

18 Q. Okay. You have read Mr. Orszag's written
19 rebuttal testimony, right?

20 A. I have.

21 Q. And you see that he found that about half
22 of the record company agreements with subscription
23 services don't even have per-play rates?

24 A. With interactive services, you mean?

25 Q. Yes.

1 A. Okay. Okay. I didn't remember that
2 exactly. I had that figure from Doctor -- Professor
3 Rubinfeld's sample. And you are saying the same is
4 true in the updated sample, okay.

5 Q. Okay. And do you recall from Mr.
6 Orszag's written rebuttal testimony that even for
7 those agreements that had a per-play metric in the
8 interactive space, that per-play rate almost never
9 determines the royalties paid?

10 A. I recall that.

11 Q. Okay. Do you have any reason to disagree
12 with those facts as recited by Mr. Orszag?

13 A. No.

14 Q. So in those contracts where, let's say,
15 the contracts where there is no per-play rate, the
16 overall amount paid by the subscription service for
17 music is related to the per-subscriber revenue, not
18 to the per-subscriber consumption, right?

19 A. No. What the record companies paid is
20 always based on the amount of plays because of the
21 pro rata mechanism.

22 Q. Okay. And my question was what the
23 service pays overall, okay? So the rate that the
24 services pay --

25 A. Okay.

1 Q. -- is going to be based on its
2 subscription revenues, not on its consumption?

3 A. Well, under percentage-of-revenue
4 formula, that has to be correct by definition.

5 Q. Okay. And in the Web IV case, you
6 proposed that the Services would pay a greater of
7 per-play rate or a percentage-of-revenue rate,
8 correct?

9 A. Yes.

10 Q. And you expected that Pandora would start
11 off paying the per-play rates, right?

12 A. Yes.

13 Q. But you expected that as time went on,
14 Pandora would pay on a percentage-of-revenue basis;
15 is that right?

16 A. I think that's a bit too strong. I
17 think, I think that there were -- that was the
18 prospect or maybe the hope from Pandora's
19 perspective, that they would increase their
20 monetization and, therefore, grow their revenues per
21 play basically, and so that if that were true after
22 some period of time, the percent-of-revenue prong
23 would become the binding one rather than the
24 per-play prong.

25 Q. Isn't it right that in Web IV you opined

1 that the per-play rates would be transitional?

2 A. In the sense I just described, that was,
3 I think, again, the hope or a prospect, not a
4 certainty.

5 Q. And you thought that the per-play rates
6 would be supplanted by a percentage-of-revenue rate
7 when the webcasting industry became more mature?

8 A. In the sense I just described with
9 increased monetization, which was Pandora was in the
10 -- in the -- making improvements in that as part of
11 their algorithms and ad sales. And that would -- in
12 that sense of the web -- of their business, at
13 least, becoming more mature, yes.

14 Q. Okay. And, in fact, you opined in Web IV
15 that Sirius XM was just such a mature business,
16 right?

17 A. I don't recall that, but it is much more
18 stable, I think that's fair. I would call that
19 mature compared with certainly the webcasters as of
20 a couple of years ago or Pandora.

21 Q. So to state the obvious, and I think you
22 may have just said this, but a percentage-of-revenue
23 metric -- under a percentage-of-revenue metric
24 overall the amount the Service pays is directly
25 related to its revenues, not to its consumption of

1 performances?

2 A. Not to the -- okay. That's fair. I
3 mean, as you get more subscribers, both of those
4 metrics go up. So they are related but if you fix
5 the number of subscribers and change the number of
6 plays, that wouldn't affect the payments in total to
7 the record industry as a whole.

8 Q. And once a Service began paying on a
9 percentage-of-revenue basis, actually the effective
10 per-play rate they'd pay would vary as a function of
11 revenue earned, right?

12 A. I'm sorry, I was distracted. Could you
13 just say it again? I apologize.

14 Q. Sure. From a Service that is paying on a
15 percentage-of-revenue basis, the effective per-play
16 rate is going to vary as a function of the revenues
17 earned, right?

18 A. What is varying to cause the revenues to
19 change? It depends.

20 Q. Okay. Well, let's just say the service
21 becomes better able to monetize its service, it
22 raises its subscription price, for example, without
23 changing the number of plays.

24 A. Well, then on a per sub basis, you would
25 pay the same amount -- excuse me, you would pay more

1 for the music because you are paying percentage of
2 revenue, even though the plays per sub haven't
3 changed. That's by definition a percentage of
4 revenue.

5 Q. Right. So the effective per-play rate is
6 going to change as the revenue goes up, right?

7 A. Yes, that's right, as the subscription
8 fee goes up.

9 Q. Now, in this case you are saying that the
10 overall royalty paid by Sirius XM should be really
11 directly related to the number of performances and
12 not directly related to the revenues earned from
13 those performances; is that fair?

14 A. No, because I am proposing a
15 percentage-of-revenue rate structure, so their
16 payments to the record industry will go up with the
17 revenue over time, as it has been.

18 Q. But you get to that percentage-of-revenue
19 rate by applying the number of plays, right?

20 A. Well, that's my benchmarking approach,
21 yes. So then we convert it to percentage of
22 revenue, so it has all the properties you have just
23 described.

24 Q. So just to kind of circle back to where I
25 may have started, you are proposing that Sirius XM

1 pay about half of what Pandora I would pay on a
2 per-subscriber basis under the Web IV rates because
3 Sirius XM uses fewer performances per subscriber,
4 right?

5 A. That's not the reason, no. The reason is
6 because that's what comes out of my benchmarking
7 approach. That's based on steering and opportunity
8 cost principles. It is not because they play fewer
9 songs. It is because that's what results from
10 benchmarking.

11 Q. All right. Now I am confused. You are
12 using the Web IV per-play rates, right?

13 A. Yes.

14 Q. You are just multiplying that by the
15 number of performances you have calculated for
16 Sirius XM, correct?

17 A. Correct.

18 Q. That's how you get to your rate, right?

19 A. Right. If they were playing more songs,
20 performances per subscriber per month, my
21 benchmarking exercise would end up with a higher per
22 sub per month rate. That would be proposed.

23 Q. So your rate is directly related, your
24 proposed rate is directly related to the number of
25 performances per subscriber, right?

1 A. Yes, the \$4.69 rate that I estimated.

2 Q. Okay. And as a result you are proposing
3 that Sirius XM pay one-half of what Pandora I would
4 pay on a per-subscriber basis because it has fewer
5 performances per subscriber, correct?

6 MR. RICH: Objection, lack of foundation.

7 JUDGE BARNETT: Sustained.

8 BY MR. HANDZO:

9 Q. Let me just ask, are you familiar with
10 the Music Choice service that's at issue in this
11 case?

12 A. No.

13 Q. Are you aware that Music Choice provides
14 sound recordings on a non-interactive basis to
15 satellite television subscribers?

16 A. No, with apologies to Music Choice.

17 Q. You discussed earlier that in Web IV, the
18 Judges used two benchmarks for their rate setting.
19 One was the interactive services agreements; and one
20 was the Merlin/Pandora agreement for subscription
21 services. Right?

22 A. Yes.

23 Q. And the Merlin/Pandora agreement was the
24 benchmark that you presented, correct?

25 A. Correct.

1 Q. And when you -- I'm sorry. Let me back
2 up.

3 Before I go there, one of your criticisms
4 of Mr. Orszag in this case is that he presents an
5 analysis based on the effective rates in the
6 interactive services market, right?

7 A. My criticism is that he did not follow
8 the Judge's methodology in Web IV. That's the
9 criticism.

10 Q. Okay. And one aspect of that criticism
11 is that Mr. Orszag was using effective rates, right?

12 A. He started with the percentage-of-revenue
13 rates there, not the per-play rates. The
14 percentage-of-revenue rates were generally the
15 effective rates, not the minimum per-play rates.

16 Q. Okay. Well, you understand that Mr.
17 Orszag actually took the royalty statements and just
18 figured out what Services were paying effectively on
19 a percentage-of-revenue basis, right?

20 A. Okay. Which -- and that was the basis,
21 it was percentage of revenue that were driving those
22 royalty statements.

23 Q. Okay. And so your criticism is that he
24 shouldn't have done that, he should have used the
25 contractor headline per-play rates from those

1 agreements, right?

2 A. I'm just saying what he did do. I am not
3 telling what he should have done. I am just saying
4 what he did do, did not track what the Judges did in
5 Web IV, and that led to a sharp departure. He
6 claims he is following what they did, and I don't
7 believe that is accurate.

8 Q. Leaving aside the Web IV decision, is
9 there anything wrong in a benchmarking exercise with
10 using effective rates?

11 A. Not as a general principle. It depends
12 on how you do it.

13 Q. Okay. And, in fact, in your Web IV
14 analysis using the Merlin/Pandora agreement, you
15 calculated effective rates under that agreement,
16 correct?

17 A. I did. The table we looked at earlier,
18 for example.

19 Q. Right. So, for example, you went through
20 that agreement and you figured out how much steering
21 would affect the per-play rates stated in the
22 contract, right?

23 A. The effective rate as opposed to the
24 headline rate, yes.

25 Q. Yes. And you also went through a series

1 of other provisions in the contract that might have
2 changed the economic terms of the deal to consider
3 whether you needed to change the per-play rates,
4 right?

5 A. That's correct.

6 Q. So, for example, the contract had
7 guarantees, revenue sharing, a variety of other
8 terms, right?

9 A. Yes.

10 Q. And in your Appendix D in 19 pages, you
11 went through and determined how all of those would
12 affect the effective rates, right?

13 A. I looked -- I considered that question.

14 Q. And you adjusted the headline rates to
15 turn them into effective rates, didn't you?

16 A. I did.

17 Q. Now, am I right that in calculating
18 effective rates in the Merlin/Pandora agreement, you
19 didn't need to consider the percentage-of-revenue
20 rate in that agreement because under the greater-of
21 formula the per-play rates were the ones that
22 yielded the highest royalty at the time?

23 A. That's correct. I didn't need to apply
24 the percentage-of-revenue rate to calculate the
25 effective rate because it was not binding.

1 Q. You have said that, you know, your
2 criticism of Mr. Orszag in using effective rates is
3 that it is not what you perceive the Judges to have
4 done in Web IV.

5 Do you have any other reason, economic
6 basis why that's not an appropriate way to proceed?

7 A. In general or for what he did?

8 Q. In general.

9 A. In general, no. There is nothing wrong
10 with that. It all depends on what you do next.

11 Q. So your criticism of him comes down to
12 the fact that you don't think that that's the way
13 the rates were calculated in Web IV?

14 A. It is not.

15 Q. And that's the basis for your criticism
16 on this issue, correct?

17 A. It is a big difference. Yes, that is my
18 criticism on this particular issue.

19 Q. Okay. Now, isn't it true that in Web IV
20 Dr. Rubinfeld adjusted the headline per-play rates
21 to come up with effective rates, just as you did
22 with the Merlin/Pandora deal?

23 A. That sounds right, but I don't recall
24 specifically.

25 Q. But -- okay.

1 So Dr. Rubinfeld was in effect using
2 effective rates, wasn't he?

3 A. I am not sure. I would have to go back
4 and look, as I sit here right now.

5 Q. Okay. Well, let's -- I am going to ask
6 you to look at the Web IV decision.

7 A. Okay.

8 Q. Which I think you may have.

9 A. I do have. It is here.

10 Q. Let me ask you to turn to page 26338.

11 A. Okay.

12 Q. And if you look at the left-hand column
13 of the page towards the bottom, do you see that the
14 Judges there describe Dr. Rubinfeld identifying
15 various forms of non-per-play consideration?

16 A. Left-hand column towards the bottom?

17 Q. Yes.

18 A. Go on. Do you want me to read it for a
19 while? What do you want to do?

20 Q. I just want to have you take a look at it
21 and see if that refreshes your recollection that
22 Dr. Rubinfeld, in fact, adjusted the headline rates
23 from those interactive services to make them into
24 effective rates taking into account other
25 consideration in the agreements?

1 A. I'm not sure. I just have to catch up
2 with you.

3 Q. Sure. Take your time.

4 A. On page 15 of my written rebuttal
5 testimony, this describes what happened here and
6 what Dr. Rubinfeld did was derived from the weighted
7 average minimum per-play rate that he found in these
8 contracts. And there is a cite there to his
9 corrected written direct testimony in Web IV.

10 And this here also is citing that same
11 source. So I am not quite with you here.

12 Q. All right. Well, let's just look at what
13 the Judges said.

14 A. Okay.

15 Q. The page I was pointing to, right?

16 A. That's fair. I am just catching up.
17 Which particular part of what they said then?

18 Q. Right. Down near the bottom of the
19 left-hand column you see the line that says, "next
20 Dr. Rubinfeld identified the various forms of
21 non-per-play consideration" and it goes on from
22 there.

23 A. Okay.

24 Q. Okay? And so that indicates that
25 Dr. Rubinfeld actually adjusted the headline rates

1 to reflect other forms of compensation in the
2 agreement, right?

3 A. This is for his ratio equivalency
4 denominator here.

5 Q. Right.

6 A. Okay. That's --

7 Q. So in that respect, Dr. Rubinfeld was
8 using effective rates, wasn't he?

9 A. I am not sure.

10 Q. Do you recall that at the time of the Web
11 IV hearing, the per-play rates in the contracts that
12 Dr. Rubinfeld was relying on were, in fact, the
13 operative metric as opposed to per-subscriber or
14 percentage-of-revenue rates?

15 A. Per-play rates were the operative metric?

16 Q. Yes.

17 A. Under what? Under which agreements?

18 Q. Under the interactive services agreements
19 that Dr. Rubinfeld used as his benchmark.

20 A. I am not sure that was uniform across all
21 of his agreements. I don't know that. I am not
22 sure.

23 Q. Okay. Let me ask you to look at, turn to
24 page 26325. In the right-hand column you see the
25 heading "the Judges reject the adoption of a

1 greater-of rate structure"?

2 A. I do.

3 Q. Okay. And one paragraph down it reads,
4 "The Judges first note that none of the
5 percentage-of-revenue prongs in the greater-of
6 agreements in the record has been triggered, which
7 may suggest that the parties to those agreements
8 viewed the per-play rates as the rate term that
9 would most likely apply for the length of the
10 agreement."

11 Do you see that?

12 A. I see that.

13 Q. Okay. So does that refresh your
14 recollection that at the time of Web IV, the
15 effective per-play rates that Dr. Rubinfeld was
16 using were, in fact, the operative rates in the
17 agreements?

18 A. Okay. I see that.

19 Q. Okay. And does that refresh your
20 recollection on that point?

21 A. Not particularly but I read it.

22 Q. You don't have any reason to disagree
23 with it?

24 A. No, certainly not.

25 Q. Loaded question when I ask it in the

1 presence of the three Judges?

2 MR. RICH: May I raise an objection to
3 that last question? Your Honor, it is really asking
4 him to infer from language in the opinion what Your
5 Honors inferred from the evidence as opposed to what
6 was a reasonable set of questions, which is whether
7 it refreshes his personal recollection of the
8 record.

9 It seems to me the latter is appropriate.
10 The former is just asking him to interpret you, to
11 which I think it is an objectionable question.

12 JUDGE BARNETT: I'm sorry, it is late in
13 the day. I am having to look at this again.
14 Overruled.

15 Mr. Rich, I think that he is just using
16 that passage to refresh Professor Shapiro's
17 recollection, although I can say we have pretty
18 thick skin, we can -- if you can dish it out, we can
19 take it.

20 BY MR. HANDZO:

21 Q. Since we are paused for the moment,
22 Judge, since I was about to go into restricted
23 session, I am not going to finish today, so just
24 inquiring how the Court wants to proceed.

25 JUDGE BARNETT: You don't want to know.

1 Let's just go ahead. Anyone who is in the hearing
2 room currently who is not privy to confidential
3 privileged information, please wait outside. And
4 will this be for the remainder of --

5 MR. HANDZO: It won't. It is relatively
6 brief, I think.

7 JUDGE BARNETT: Briefly, please.

8 (Whereupon, the trial proceeded in
9 confidential session.)

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

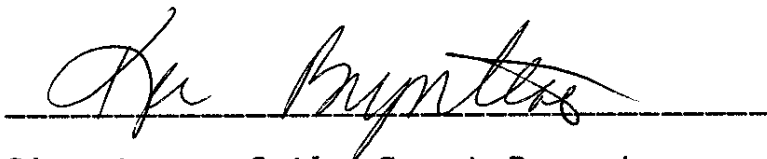
1	C O N T E N T S				
2	WITNESS	DIRECT	CROSS	REDIRECT	RECROSS
3	CARL SHAPIRO				
4		269	442		
5					
6	AFTERNOON SESSION: 394				
7					
8	CONFIDENTIAL SESSIONS: 269-293, 347-354,				
9	396-397, 471-497, 519-528				
10					
11	E X H I B I T S				
12	EXHIBIT NO:	MARKED/RECEIVED	REJECTED		
13	JOINT				
14	47		297		
15	SIRIUS				
16	669		456		
17					
18					
19					
20					
21					
22					
23					
24					
25					

CERTIFICATE

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

I certify that the foregoing is a true and accurate transcript, to the best of my skill and ability, from my stenographic notes of this proceeding.

4/2/17



Date

Signature of the Court Reporter

<p style="text-align: center;">\$</p> <p>\$1.03 [7] 314:17,20 315:2,8,11,18,22 \$1.06 [2] 360:5 361:25 \$10.72 [1] 315:1 \$12.80 [1] 315:20 \$2.55 [3] 418:12 440:5 441:7 \$4.69 [1] 508:1 \$4.91 [1] 399:16</p> <hr/> <p style="text-align: center;">0</p> <p>0022 [1] 317:2 022 [2] 316:7,20</p> <hr/> <p style="text-align: center;">1</p> <p>1 [17] 301:16,19 303:8 309:25 337:6 382:4 398:18 400:8,10,10 408:17 409:9 411:12 412:1 416:13 427:5 463:18 1:22 [1] 394:2 10 [4] 294:4 305:2 309:12 468:7 10-k [1] 394:25 10.2 [1] 447:16 10.72 [1] 315:2 10:37 [1] 336:24 10:59 [1] 336:25 100 [1] 440:18 10019-5874 [1] 265:18 101 [1] 263:20 10153 [1] 265:9 1099 [1] 264:17 11 [7] 305:23 306:14 309:23,25 311:2 361:3,14 12 [22] 311:9 315:14 360:2,25 361:3 362:11 371:10 379:9 384:22 385:10 386:2,11 387:22 388:9,10 389:6,8,12 390:24 391:2,11 392:17 12:10 [1] 393:6 120 [1] 445:21 121 [1] 445:21 13 [3] 313:21 370:4 379:18 14 [6] 321:16 324:11 362:14 373:25 374:14 376:19 15 [15] 302:7,9 303:7,19 304:6 336:23 356:11 359:7 361:21 374:1,14 379:24 380:5 441:19 514:4 16 [4] 361:17 418:4 456:11 458:4 1675 [1] 265:17 17 [3] 420:17,18 445:24 1717 [1] 265:23 18 [2] 398:3 422:22 18563 [1] 267:14 19 [6] 398:14 399:13 400:6 424:17,19 511:10</p> <hr/> <p style="text-align: center;">2</p> <p>2 [14] 301:7 302:17 325:8 330:19 331:7,16 332:19 336:10 376:23 379:17 382:4 386:12 411:14 457:7</p>	<p>2:26 [1] 441:20 2:48 [1] 441:21 20 [4] 263:22 425:14,15,19 20001 [1] 264:18 20006 [1] 265:24 2009 [1] 416:21 2010 [1] 412:9 2011 [2] 416:19 417:1 2014 [1] 339:9 2016 [2] 309:21 412:10 2017 [1] 263:22 202-639-6000 [1] 264:19 202-857-6395 [1] 265:25 204 [1] 266:5 21 [8] 385:3,4,6 388:15 389:4 400:2 403:11 426:12 212-310-8007 [1] 265:10 212-484-3990 [1] 265:19 22 [8] 311:16 314:8,15 322:15 385:3,7 387:23 431:2 23 [1] 266:4 24 [7] 328:19 381:1 382:13 385:21 386:13 387:8 391:5 25 [2] 383:9 440:15 26 [1] 387:21 26325 [1] 515:24 26338 [1] 513:10 269 [1] 529:4 269-293 [1] 529:8 27 [1] 357:19 28 [1] 391:4 29 [3] 408:16 409:9 416:13 297 [1] 529:14</p> <hr/> <p style="text-align: center;">3</p> <p>3 [3] 302:16,16 457:7 30 [1] 412:18 301 [1] 457:7 304 [1] 456:24 31 [4] 374:7,12 376:19 377:18 32 [1] 411:17 33 [1] 417:12 347-354 [1] 529:8 35 [1] 300:16 37 [2] 309:25 337:7 37203 [1] 266:6 38 [1] 440:14 389 [1] 301:25 39 [2] 463:14,17 394 [1] 529:6 396-397 [1] 529:9</p> <hr/> <p style="text-align: center;">4</p> <p>4 [1] 405:9 4.6 [2] 310:11 467:2 4.69 [1] 317:2 4/20/17 [1] 530:9 40 [3] 294:16 301:8 373:21 40.8 [1] 328:17 4000 [1] 264:24 41 [1] 294:17 42 [2] 338:24 468:23</p>	<p>442 [1] 529:4 456 [1] 529:16 469 [3] 314:14,16 316:20 47 [6] 296:3 297:2,7,9 343:16 529:14 471-497 [1] 529:9 48 [6] 309:6,16 310:13 385:16,17 386:12 49 [1] 311:13</p> <hr/> <p style="text-align: center;">5</p> <p>5 [1] 388:11 50 [4] 388:16 389:2,7 440:18 51 [1] 314:1 519-528 [1] 529:9 55 [12] 302:8,11,13 314:2 321:12 323:11 324:25 386:12 388:5,10 389:3,7 55-ish [1] 385:10 555 [1] 264:24 56 [2] 322:22 323:11 57 [4] 311:13 321:9 322:22 459:8 59 [2] 321:9 355:12</p> <hr/> <p style="text-align: center;">6</p> <p>6 [8] 388:5,10 467:13,24 468:4,5,7,8 61 [1] 440:13 63 [2] 302:12,14 669 [8] 455:21 456:7,8,20,22 457:16,17 529:16</p> <hr/> <p style="text-align: center;">7</p> <p>7 [3] 298:9,11 385:12 7.8 [3] 373:19 374:7 376:19 72 [1] 310:13 767 [1] 265:8</p> <hr/> <p style="text-align: center;">8</p> <p>8 [10] 298:7 299:5,6,7,9 302:9,10,11 315:16 399:25 800 [1] 411:10 801 [1] 401:24 801(b) [7] 310:22 311:1 315:25 320:18,24 401:25 402:23 801(b)(1) [1] 400:22 813 [2] 411:22 412:5 82 [1] 267:14</p> <hr/> <p style="text-align: center;">9</p> <p>9 [5] 305:23 306:14,18 356:6 364:3 9.4 [1] 468:10 9.42 [3] 309:19 310:15 448:2 9.6 [1] 315:2 9.87 [5] 309:14 310:15 447:15 448:2,3 9.9 [6] 360:9 361:1,25 363:3 380:25 381:24 9:08 [2] 263:23 267:2 900 [1] 264:17 90013 [1] 264:25</p> <hr/> <p style="text-align: center;">A</p>	<p>a.m [4] 263:23 267:2 336:24,25 ability [17] 294:7 322:20 364:4,18 365:18,21 419:20 448:15 450:19 451:2,4,21 452:2 455:15 458:24 501:6 530:5 able [16] 367:13 394:14 410:14,22 412:13,16 413:18 451:9,10 459:11 460:4,7,16,18,21 505:21 above [2] 443:15,22 absent [3] 365:11 420:3,5 absolutely [4] 340:13 384:19 395:6 401:6 absorbs [1] 467:4 accept [10] 297:6 299:24 315:8 332:3,5,12,24 376:2,16 452:5 accepted [2] 377:19 383:11 accepting [1] 306:8 access [3] 294:23,23 298:19 accommodate [1] 303:6 according [1] 413:14 account [7] 360:16 376:2 401:13 444:13 467:11,20 513:24 accounted [1] 403:1 accounting [1] 310:14 accurate [3] 414:25 510:7 530:4 achieved [1] 391:17 acknowledge [1] 299:24 acknowledges [1] 299:12 acknowledging [2] 300:24 449:15 across [5] 313:11 437:22 447:23 464:3 515:20 action [3] 327:1,2 430:2 activities [1] 369:10 actors [1] 264:4 actual [7] 301:20 355:5 363:17 375:16,20 462:24 465:23 actually [36] 295:16 296:12,17 300:14 301:21 303:1,8,14 307:12 314:5 318:5 328:5 332:10 334:25 337:19 340:21,25 367:17 371:9 379:15,16 381:3,3 389:23 392:19 413:5 414:10 415:11 428:11 430:5 454:25 456:14 466:12 505:9 509:17 514:25 ad [3] 455:3,3 504:11 ad-supported [18] 312:13 345:6,21 376:24 454:7,10,13,23 455:10 498:4,7,15 499:2,10,19 500:8,15,23 add [4] 302:11 332:21 391:20 395:19 adding [2] 333:24 429:4 addition [1] 321:1 additional [11] 300:2 326:19 329:15,16 331:19 398:5,14 403:14 435:21 437:17 441:9 address [2] 339:14 403:14 addressed [1] 305:4 addresses [1] 298:7 addressing [3] 398:16 402:3 405:</p>
--	--	---	---

<p>24 adds [1] 399:5 adequate [1] 389:13 adjust [5] 321:5 324:15 360:17 386:1 447:24 adjusted [10] 359:17 381:21 384:22 387:22 388:8,9 511:14 512:20 513:22 514:25 adjusting [3] 382:6 387:20 392:2 adjustment [51] 310:12 322:13 323:4 324:16,17 329:21,23,25 330:2 333:1 335:10,12 359:20,22 360:2,13,21,23 361:1,10,13 362:9,11,17 363:24 381:22 382:5 383:8,9 384:16,18 385:7,11 386:10,18 387:4,5 389:4,6,13 390:25 391:2,12 392:7 403:21 404:9 405:1,4 448:1 450:2 467:9 adjustments [4] 312:6 321:14,19 382:3 administering [1] 467:6 administrative [14] 307:2 310:9,10 447:20 448:13,16,20 466:17,23 467:1,5,11,22 468:13 admitted [4] 297:2,3,8 456:7 adopted [1] 357:7 adoption [1] 515:25 ads [1] 462:24 advance [1] 424:17 advantage [2] 295:8,22 adverse [1] 460:16 advertising [2] 454:15 500:1 advise [2] 370:23 394:14 affect [5] 365:21 452:8 505:6 510:21 511:12 affected [1] 442:15 affiliated [1] 268:13 afraid [1] 469:2 afresh [1] 390:9 afternoon [7] 394:8,10 424:24 441:17 442:4,5 529:6 aggregate [2] 406:14,20 aggregated [1] 414:7 ago [2] 304:4 504:20 agree [27] 317:25 344:2,8 355:13 366:14,15 401:18 422:18,21 442:16 443:6 444:3,8,18,24 445:13 446:12 452:20 453:4 454:4 455:9,13 461:11 466:5 468:9,12 501:9 agreed [2] 355:21 445:1 agreeing [2] 444:6,7 agreement [31] 311:21 312:5,8,8 339:9,15 340:3,12 341:12 343:20,23 344:6,7,17,20,22 345:16,23 382:19 388:14 446:6 464:18 508:20,23 510:14,15,20 511:18,20 515:2 516:10 agreements [36] 311:20,23 339:7,10 340:19,21 341:4 342:8,16,22 357:13,17,19 359:1,8 367:18 368:10 381:17,19 382:14 383:5,13</p>	<p>388:16 443:15 446:16 501:22 502:7 508:19 510:1 513:25 515:17,18,21 516:6,7,17 ahead [4] 411:16 412:4 435:11 518:1 airline [1] 366:18 alex [1] 264:11 algorithm [3] 458:8 459:18,22 algorithms [3] 455:15 459:11 504:11 align [1] 312:20 alignment [1] 313:7 allocate [2] 328:13 358:7 allocated [1] 328:17 allocating [1] 328:15 allocation [2] 328:10 398:24 allow [2] 407:21 417:8 allowed [1] 395:9 allowing [2] 413:11 437:24 almost [1] 502:8 alone [5] 367:2 406:12,16,19 469:24 already [4] 365:13 403:1 420:23 424:20 although [9] 268:7 308:13,14 314:2 336:6 362:13 367:21 395:17 517:17 am/fm [3] 328:6,18 333:21 american [3] 264:2,4,5 among [7] 302:3 316:8 332:13 367:4 400:14 420:2 424:10 amount [14] 308:6 314:18,20 317:13,17 418:15 462:3 463:5 465:2,23 502:16,20 504:24 505:25 amounts [1] 460:15 analogous [1] 303:16 analyses [2] 384:7 440:22 analysis [45] 301:3 306:18 309:8 310:18 312:10 321:3 322:21 323:7,11 325:11 330:11,12 331:17 332:2,19 362:20 363:4 374:20 380:2,11 400:2 402:18 404:19 407:4,5 414:18 415:1,14,16,25 416:11 417:23 420:4,7 429:6 434:5,5 438:14 441:5,11 446:7 500:22 501:4 509:5 510:14 analyze [3] 358:14 407:3,4 analyzing [2] 403:18 420:8 angeles [1] 264:25 announcement [1] 267:10 annual [1] 412:10 another [19] 295:23 303:11 319:19 322:14 324:24 358:8 368:14 375:2 378:9 399:14 413:15 417:23 419:21 427:20 429:18 430:16 451:25 453:14 501:12 answer [15] 297:24 307:6 332:22 333:5 336:11 337:16 361:9 363:5 365:2 376:4,11 380:23 386:20 387:13 446:8 answering [2] 305:3 346:14</p>	<p>answers [2] 362:23 400:5 anti-steering [3] 367:17 368:4,9 anticipated [1] 464:13 anticipating [2] 298:2 428:12 anticompetitive [1] 368:10 antitrust [3] 366:13 368:2 375:8 anybody [1] 469:15 anyhow [2] 368:7 390:25 apart [1] 468:13 apologies [1] 508:16 apologize [5] 267:7 297:25 370:19 400:5 505:13 appeals [2] 501:10,13 appear [2] 410:10 435:6 appearances [2] 265:1 266:1 appearing [1] 373:12 appears [4] 309:22,24 321:9 468:13 appendices [1] 395:13 appendix [20] 307:15,19 308:2,2 324:24 325:2,4,17 326:4 411:1 413:22 417:16,17 420:22 421:1,13,14 440:10,22 511:10 apples [1] 316:21 applicability [1] 379:6 applicable [1] 311:7 application [4] 320:18 363:2 370:21 380:1 applied [4] 309:14 325:19 362:23 369:17 applies [2] 371:15 414:15 apply [12] 361:23 362:5 370:7,9,12 371:4 379:19 401:1 448:12 469:3 511:23 516:9 applying [5] 310:22 361:19 363:1 386:17 506:19 approach [25] 312:6 320:19,20 357:6 358:2,8,9,10,20 359:24 361:12 362:3 368:15 380:7,21 382:4,4 385:6 398:18 400:9 419:1,19 441:2 506:20 507:7 approaches [4] 357:21,24 358:15,16 approaching [1] 414:4 appropriate [6] 313:24 317:3 321:20 386:20 512:6 517:9 appropriately [1] 331:3 april [1] 263:22 area [3] 362:20 385:5 389:25 aren't [2] 400:19 444:22 arent [2] 265:16,22 arguably [2] 386:11 400:23 argument [2] 306:1 317:16 arguments [1] 335:19 arithmetic [2] 382:1 386:3 around [3] 326:7,14 339:10 361:3 416:21 417:2 427:17 429:5 arpu [5] 315:1,1,4,14,19 arrangement [1] 432:13 arrangements [3] 341:17,24,25 arrow [1] 449:23</p>	<p>artists [3] 264:5 458:14,17 aside [3] 357:2 444:1 510:8 aspect [2] 382:19 509:10 aspects [1] 356:7 asserted [3] 408:4 413:11,18 assertion [7] 300:17 339:2 340:24 367:24 410:8 416:2 418:9 assertions [1] 341:22 assess [2] 460:18,22 assign [1] 400:10 assigning [1] 399:23 assistance [1] 330:15 associated [5] 318:9 327:5 418:23 447:17 451:14 association [1] 264:5 assume [6] 306:2 384:3 387:7 400:14 419:19 443:25 assumed [5] 302:14 424:11 430:19 433:7 457:21 assuming [7] 310:19 387:4 427:11 428:3 438:5,10 501:6 assumption [1] 316:14 assumptions [2] 440:20,24 assured [1] 465:5 attached [1] 374:20 attempt [4] 329:25 362:8 392:11 405:10 attempting [2] 358:24 415:3 attention [1] 298:20 attractive [1] 433:1 attributable [2] 398:15,20 attribute [1] 399:10 attributes [2] 378:21 422:9 attributing [1] 448:21 attuned [1] 458:11 austin [1] 264:23 availability [1] 326:20 available [6] 315:15 364:23 434:18 435:19 436:13 437:11 avenue [3] 263:20 264:17 265:8 average [6] 309:20 334:3 399:20 467:11,23 514:7 avoid [3] 307:1 467:2,17 avoiding [1] 467:21 aware [8] 297:1 317:3 363:19,21 367:10 378:20 442:24 508:13 away [9] 326:2,22 414:1 418:10 423:10 429:16 430:9,16 461:9 awkward [2] 371:2 388:21</p> <hr/> <p style="text-align: center;">B</p> <p>back [15] 317:21 322:2,11 325:10,13 374:13 377:17,18 384:12 395:18 400:6 451:5 506:24 509:1 513:3 background [1] 415:18 backup [1] 338:9 backwards [2] 404:17 405:5 bar [1] 335:22 bargaining [3] 306:7 453:8,13 barnett [35] 263:14 267:3,7 268:11</p>
---	---	--	--

<p>297:4,7 318:22 319:5,9 331:13 336:22 337:1 346:18 355:23 372: 7 392:25 393:3 394:3,6 409:5 441: 16,22 442:1 456:7 457:14,17 469: 5,13,18,22,25 508:7 517:12,25 518:7 barros [3] 296:5,11 297:15 barros' [5] 296:13 298:18 300:20 309:1 449:13 base [3] 315:9,23 391:13 based [22] 311:6 315:15 316:22 318:5,10,13,15 332:1 333:20 337: 18 339:8 359:4 380:7 401:25 406: 22 407:8 438:14 499:6 502:20 503:1 507:7 509:5 baseline [5] 425:12 426:11,19 429: 19 435:9 basic [1] 441:1 basically [16] 309:19 334:21 336: 16 345:6 370:10 380:5 390:15 406:3 410:19 413:22 417:6,10 427:3 439:6 465:1 503:21 basing [1] 319:1 basis [21] 304:20 305:7 321:6 323: 4 324:15 360:16 382:20 404:13 412:11 414:20 503:14 505:9,15, 24 507:2 508:4,14 509:19,20 512: 6,15 battle [2] 332:13 373:8 became [1] 504:7 become [2] 385:25 503:23 becomes [1] 505:21 becoming [1] 504:13 beg [1] 379:15 began [1] 505:8 begin [3] 267:9 311:15 383:18 beginning [5] 314:1 321:12 322: 19 379:17 398:4 behalf [9] 264:2,20 265:2,12 266:2 296:5 358:22 373:12 457:25 behavior [4] 364:6 375:16,18,20 beholder [1] 303:2 belief [2] 298:19 404:12 believe [23] 300:22 304:3 322:25 323:2 341:11 345:25 363:24 364: 11 366:4 367:12 371:15 375:24 399:14 406:18 417:13 433:25 451: 1 455:21,22 456:5 461:17 498:18 510:7 believed [1] 392:7 believes [4] 363:1 404:6,9 407:25 below [4] 308:16 444:10 467:23 468:4 benchmark [27] 304:13,20 309:8 312:21 313:25 316:1 321:14 334: 23 335:10 338:13,16 339:16 340: 7 342:23 344:5 355:7 357:8,10 359:3 371:13 380:2 389:25 403: 21 404:10 444:21 508:24 515:19 benchmarking [16] 311:17 320: 19,20 321:2 322:17 328:1 340:9</p>	<p>342:11 357:15 401:11,15 506:20 507:6,10,21 510:9 benchmarks [4] 357:22 360:19 389:16 508:18 beneficial [1] 369:2 benefit [10] 294:22 295:23 300:3, 24 310:8 333:12 446:3 447:8 449: 16 466:22 benefits [12] 299:14,23,25 300:5,6 444:1 446:5,23 447:17,18,21 448: 23 best [2] 461:13 530:4 better [7] 346:8 399:15,22 431:13 438:17 444:21 505:21 between [40] 295:25 304:22 306: 20 308:5,7 312:8 313:13,13,14 319:20 320:3 322:14 327:7,8 357: 17 358:13 367:4 370:9,21 371:12, 14 372:1,11,13 378:5 388:25 390: 13 394:16 398:21 402:21 412:15 437:2 442:14 445:3 464:18 498: 20 499:2 500:7,11 501:6 beyond [2] 402:17 403:5 bifurcation [1] 499:6 big [6] 376:10 381:2 437:7 439:21 440:2 512:17 bigger [5] 424:15 433:22 437:4 439:12 455:6 biggest [1] 426:8 binder [4] 296:2,6 356:6 457:18 binders [1] 441:23 binding [3] 390:20 503:23 511:25 birnbaum [1] 264:14 bit [10] 267:11 308:11 313:8 327: 12 337:4 420:19 439:18 440:19 448:3 503:16 black [1] 432:2 blank [1] 333:12 blatter [4] 294:10 295:12,12,18 block [1] 264:16 blow [2] 330:21 409:10 blown [2] 364:23 439:11 blue [2] 409:22 416:17 body [2] 357:13 411:9 boost [2] 432:16,19 both [8] 326:10 355:22 362:16 434: 20 443:6 498:8,12 505:3 bottom [11] 301:24 304:5 334:3 371:10 373:25 379:9 398:5 399: 13 513:13,16 514:18 box [8] 432:9 436:9,12,15 437:4 439:11,21,23 branch [3] 340:6,16,18 break [8] 310:5 335:16 336:21 337: 5 355:24 368:6 393:1 410:9 break-out [1] 344:20 breaking [2] 267:8 414:8 breakout [1] 407:17 brief [4] 268:5,10 346:19 518:6 briefly [5] 357:25 399:19 403:16 466:18 518:7</p>	<p>bring [2] 423:22 445:20 bringing [1] 267:8 brings [1] 378:25 broadest [1] 441:4 broadway [1] 265:17 broke [1] 407:11 broken [5] 301:23 302:1 395:1 414:7 425:21 brought [1] 378:22 bruce [1] 265:3 brynteson [2] 263:25 530:9 building [2] 263:19 433:5 built [1] 317:14 bullet [2] 305:4 421:12 bump [1] 361:2 bunch [2] 430:22 440:21 bundle [1] 313:4 business [4] 295:7 344:14 504:12, 15 buyer [5] 313:1,8 322:4 453:16,18 buyer/willing [15] 310:20 320:21, 25 401:9,16,24 402:4,8,18,22 403: 2,6,7 418:25 419:3 buyers [4] 312:19,25 313:13 321: 15 <hr/>C<hr/> c-1 [1] 440:10 ca [1] 264:25 calculate [3] 314:9 421:15 511:24 calculated [4] 425:4 507:15 510: 15 512:13 calculates [1] 434:9 calculating [6] 313:24 331:24 418: 21 437:5 468:15 511:17 calculation [10] 310:16 314:3,22 316:19 326:10 355:15 361:14 418: 7 447:15 448:7 calculations [7] 371:18 389:14 398:6 403:15 422:13 439:2 440:3 call [12] 296:16 298:9 330:18,23 331:2 356:24 400:7 415:10 426: 11 430:10 437:10 504:18 called [7] 307:21 320:23 345:7 358:2 361:18,21 398:5 calling [4] 333:9 334:22 406:4,8 calls [3] 331:24 380:6 411:21 came [3] 311:25 392:1 430:14 camouflaged [1] 456:23 canada [1] 264:3 cannibalization [1] 331:25 cannot [2] 437:13 448:20 captures [1] 422:19 car [11] 316:15,17 317:1 328:22 376:21 377:4,11 378:11,12,14,17 careful [4] 345:18 375:15 390:17 437:5 carefully [1] 421:7 carl [1] 529:3 carry [2] 380:3 428:5 cartel [2] 366:14,15</p>	<p>case [33] 312:7 327:3 358:5,8 360: 14 370:25 371:14 406:23 408:16 428:8 429:10,17,18,19,19,22 433: 19 435:9 439:5 445:5,23 450:13 456:17 460:12,23 461:6 463:13 466:11 498:8 503:5 506:9 508:11 509:4 cases [6] 337:23,25,25 338:4 428: 7 429:11 casters [1] 313:2 catalogue [1] 319:1 catch [1] 514:1 catching [1] 514:16 categories [1] 500:11 cause [2] 326:21 505:18 caused [1] 454:24 causes [3] 423:9 454:13,18 causing [2] 430:19 459:12 cautious [2] 346:9,10 ceasing [1] 452:18 ceiling [1] 443:11 centerpiece [1] 418:6 cents [5] 311:17 314:8,15 387:21 388:5 ceo [1] 297:16 certain [5] 306:15 335:24 459:22 460:15 498:21 certainly [10] 341:23 368:10 371: 21 374:4 446:17 460:14 462:18, 23 504:19 516:24 certainty [1] 504:4 certificate [1] 530:1 certify [1] 530:3 cetera [1] 312:20 chance [1] 337:9 change [29] 302:6,21 315:14 342: 20,24 344:10,12,13,14 366:22 378: 24 416:10 427:3,4,6,11 428:4 433: 14 451:9 452:17 461:4,23 462:15, 16 463:5 505:5,19 506:6 511:3 changed [12] 303:6 339:22,22,23, 24 340:22 341:2 343:8 365:14 432:25 506:3 511:2 changes [4] 374:25,25 378:21 437: 21 changing [2] 444:10 505:23 channel [10] 301:17,19,19,21 302: 23,25 304:7 427:5 463:18 464:3 characterization [1] 355:13 characterizes [1] 355:9 charged [1] 339:21 chart [6] 336:4 378:15 408:21,24 426:2,19 charts [2] 336:8 421:12 check [2] 392:22 466:7 chief [1] 422:3 choice [4] 265:12 508:10,13,16 choose [1] 435:3 choosing [1] 436:13 chunk [1] 356:16 circle [2] 435:7 506:24</p>
---	--	---	---

<p>circular [1] 386:9 circumstance [2] 427:8 444:3 citation [1] 367:3 cite [2] 367:14 514:8 cites [3] 364:4 367:10,15 citing [1] 514:10 claim [3] 405:24 415:20 418:8 claiming [2] 363:22 414:20 claims [8] 338:20 341:9 363:20 371:19 374:15 383:25 407:16 510:6 clarified [1] 422:2 clarify [1] 343:18 clarity [1] 421:11 clean [1] 419:9 clean-up [1] 338:12 clear [13] 299:22 303:5 323:3 343:4 356:2 360:18 371:1 408:12 414:17 427:7 440:23 463:22 468:2 clerk [3] 297:2 457:12,16 client [1] 268:9 close [11] 346:7,15 372:13 375:22,23 376:7 384:23 390:22 394:12 395:18 434:15 closely [9] 328:22,23 339:1 357:6 371:3 408:8 410:1,11 416:7 closer [4] 318:22,25 433:20 437:1 closing [1] 441:3 co [1] 393:1 coffee [1] 267:8 cognizable [1] 322:20 collapsing [1] 370:19 colleague [1] 310:5 column [13] 301:22,24 302:10,17,19,20 328:16 333:17,19 513:12,16 514:19 515:24 combination [1] 333:4 combine [3] 355:22 462:13,23 combined [2] 399:8 407:22 come [17] 315:25 317:21 324:18 325:10 326:10 337:24 374:13 381:2 386:20 423:8 425:24 429:1,6,21 433:8 436:16 512:21 comes [14] 267:16 334:16 361:16 374:13 375:8 399:3 407:5,7 431:24 433:16 457:7 500:1 507:6 512:11 comfortable [1] 375:3 coming [7] 317:9 328:9 363:17 373:19 375:5 379:23 436:4 comments [1] 311:16 comment [1] 325:12 commitment [2] 464:21 465:12 commitments [1] 465:14 companies [22] 297:19 313:1 317:13,16 318:4 320:7,7 329:8,9,16 331:19 333:7 339:22 365:7 368:23 369:5 420:2 422:10 432:8 434:22 438:19 502:19 companies' [1] 322:5 company [20] 294:8 295:13 298:</p>	<p>18 307:8 318:15 323:13 324:12,19 325:21 329:1 331:18 332:17 335:3 405:23 411:21 421:15 429:15 462:8,20 501:22 company's [4] 420:21 421:18 422:4 424:14 comparable [1] 340:10 comparative [2] 330:12 332:16 compare [5] 312:24 325:23 343:9 373:17 420:24 compared [5] 320:9 342:18 454:10 500:15 504:19 compares [1] 333:6 comparing [1] 327:21 comparison [3] 329:20 338:2 391:21 compensated [3] 318:5,13,15 compensation [6] 320:6 331:25 333:18 335:24 411:22 515:1 compete [3] 366:16 372:17,23 competed [1] 366:20 competes [1] 372:21 competing [1] 377:9 competition [32] 359:12 364:22 365:4,8,10,16 366:1,2,3,9,11,21 367:4,11,16,22 368:6,12,18 369:4 372:1,13 386:2 389:1,5 392:4 420:2,3 424:9 429:13 465:17,25 competitive [19] 304:23 309:3 310:21 339:16 359:4 363:21 366:2,4,12,24 367:6 384:23 389:10 390:23 402:8 420:12 421:19 447:10 460:11 competitors [1] 374:5 complementary [7] 359:9,18,23 360:17 365:15 366:23 388:23 completely [7] 299:24 365:11 386:5 419:22 420:3,5 424:2 complex [2] 355:10 362:20 compliant [1] 324:21 complications [1] 345:15 complied [1] 268:4 component [1] 399:16 components [1] 334:4 compute [1] 392:11 computing [1] 420:8 concept [2] 422:18 425:4 conception [3] 362:24 364:24 424:18 conceptual [1] 418:19 conceptually [8] 333:19 334:1 418:18 419:8 420:7 427:13 439:20 441:10 concern [1] 410:4 concerning [1] 341:3 conclude [7] 323:12 360:12,13 379:10,12 412:17 447:7 concluded [1] 322:21 concludes [2] 367:19 441:14 concluding [2] 335:15 368:17 conclusion [8] 308:12 309:5 324:</p>	<p>9,10,18 332:20,25 379:23 conclusions [2] 323:8 375:5 concord [3] 297:16,16 449:14 concord's [2] 298:15,17 conditions [4] 371:8,17,20 380:8 conducted [2] 327:15 441:6 conducts [1] 417:22 confident [2] 414:23 464:12 confidential [12] 268:14,17 343:25 346:1,19,22 395:1,21 470:2 518:2,9 529:8 confidentiality [1] 346:6 confined [1] 462:10 confirm [1] 456:15 confirms [1] 335:5 confused [4] 379:14 404:2 468:3 507:11 confusingly [1] 406:6 Congress [2] 263:2,18 connection [1] 321:16 consider [7] 320:22 400:20 402:5,9,10 511:2,19 considerable [1] 405:23 considerably [2] 328:18 420:25 consideration [5] 299:15 357:23 513:15,25 514:21 considerations [1] 299:16 considered [5] 321:13 341:21 455:14 458:21 511:13 considering [1] 444:13 considers [1] 452:22 consistent [2] 328:20 406:19 consistently [1] 404:22 constant [1] 306:21 consult [2] 337:9 395:4 consulting [1] 395:8 consumer [5] 326:7,9 327:10,16 453:23 consumers [5] 327:18 375:22 427:17 429:3 461:5 consumption [3] 502:18 503:2 504:25 contacting [2] 295:5 427:25 contained [1] 358:25 content [6] 378:14 382:6 386:13 398:21,22 400:11 contention [1] 408:10 contents [1] 267:21 context [8] 319:19 368:8 373:24 389:15 390:5 402:7 453:11,13 continue [1] 329:10 continued [2] 265:1 266:1 continuing [1] 416:22 contract [7] 465:5,8,14 466:3 510:22 511:1,6 contractor [1] 509:25 contracts [8] 337:20 340:25 342:19 363:18 502:14,15 514:8 515:11 contractual [2] 344:3 464:18 contrast [1] 374:5</p>	<p>contributed [1] 458:23 contribution [1] 402:1 contributions [1] 400:23 control [1] 459:25 controlled [3] 461:6,14,25 convenience [1] 399:3 convenient [1] 336:20 convergence [3] 372:15 377:25 378:8 conversely [1] 443:19 convert [4] 314:11,23 315:22 506:21 convey [1] 395:10 conveys [1] 304:3 convince [1] 466:5 convinced [1] 466:7 convincing [2] 317:19 333:3 convoluted [1] 355:10 copies [1] 457:10 copyright [1] 263:1 corner [2] 435:19 438:5 correct [76] 298:13 303:10 304:17 307:16,17 310:18 313:13 315:17 316:14 321:17 330:6 331:1 340:12 355:7 356:9 363:2 379:20 380:11 383:2 392:9,10 400:16,17 405:12 411:7 413:16 415:2 417:14 421:16,17 422:10,11 423:3 426:13,14 427:12 439:20,22 440:13 443:17,18,22 444:5 445:5,6 450:12 451:21 452:14 454:1,11 459:3,7 461:2 463:21 464:11 465:7 468:24 498:12,13 499:21 500:5,22 501:3,8,17 503:4,8 507:16,17 508:5,24,25 510:16 511:5,23 512:16 corrected [2] 420:7 514:9 correction [1] 467:9 correctly [1] 394:18 correlation [1] 412:15 correlations [1] 410:7 corresponding [3] 310:14 315:4,11 corresponds [1] 435:9 corroborated [1] 384:25 cost [73] 317:24,24 318:8,8 322:5,5 323:13,14 324:6,12,19 325:15,20 326:11,14 327:2,5 329:19 331:18,24 333:7 334:9,11 335:2 402:6 415:21 416:1 417:21 418:8,22,22 419:1,6 420:5,8,21 421:8,18 422:5,18 423:4,4,6,17 425:3,24 426:13 427:19 428:2 429:7 431:16,20 432:20,23,25 433:21 434:9 436:2,11 437:3,14 438:13 439:20 440:5,12 441:8 452:8,19,23 453:2,7 501:8 507:8 costing [1] 459:12 costly [3] 329:1,16 453:22 costs [14] 330:13 332:16 400:22 421:23 422:20 423:22 428:14 429:15,25 454:3 460:18 466:17,23</p>
--	---	--	--

<p>467:5 couldn't [4] 336:8 360:23 454:20 461:6 counsel [4] 316:5 331:1 343:15 394:14 couple [3] 267:16 312:4 504:20 course [11] 294:3 300:4 302:6 311: 22 374:24 384:19 399:7 401:4 427:24 432:6 440:19 court [6] 294:15 322:18 346:14 381:13 517:24 530:10 courtroom [2] 346:16 394:13 cover [2] 340:2 345:19 covered [4] 311:12 313:25 398:11 424:22 covers [1] 344:22 crab [1] 432:21 crb [2] 267:13,21 create [3] 399:8,11 432:7 creates [1] 359:11 creator [3] 331:25 333:17 411:21 creators [1] 335:24 credible [1] 465:20 critical [4] 294:3 299:20 423:13 441:11 criticism [19] 300:19 304:25 305:3, 7 316:19 317:4 339:4 362:7 368: 21 401:20 413:17 509:7,9,10,23 512:2,11,15,18 criticisms [4] 338:14 374:17 377: 19 509:3 criticizes [2] 304:19 330:5 critique [3] 362:25 368:15 405:10 critiqued [1] 370:20 cross [2] 375:11 529:2 cross-elasticity [11] 370:14 371: 12 372:12 373:1,7 374:23,23 375: 6 377:15,21 378:5 cross-examination [1] 442:2 crossed [1] 375:2 crr [1] 263:25 crux [1] 304:12 cumulative [2] 411:9 412:6 curation [1] 399:5 current [1] 338:22 currently [1] 518:2 customer [2] 460:3,5 customers [1] 366:17 cut [2] 385:18 432:14</p>	<p>date [3] 339:13 466:10 530:10 david [2] 263:16 264:8 day [9] 301:20,22,25 302:6,8,14 316:12 380:3 517:13 days [1] 428:25 deal [5] 341:15 455:6 458:15 511:2 512:22 death [1] 439:7 decide [6] 333:3 358:6 369:9 401: 23 402:25 403:4 decided [1] 344:10 deciding [2] 438:3 451:12 decision [8] 298:15,17 391:12 434: 13,13 439:5 510:8 513:6 decisions [1] 438:19 decrease [5] 431:9 436:7 458:9 464:19 465:6 decreased [1] 462:17 decreasing [1] 452:18 deeply [1] 421:7 defer [1] 267:9 define [1] 406:1 defines [1] 406:2 definitely [1] 448:19 definition [4] 409:19 422:2 503:4 506:3 degree [13] 313:9 323:1,1 358:15 372:1,17,22,23 436:5 450:15 460: 22 464:22,24 delay [1] 400:4 demand [19] 370:15 371:12 372: 13 373:1 374:23,24 375:6 377:16 403:13,22 404:6,7,14,15,25 453: 16,25 499:9,22 demonstrate [4] 406:11 415:3 460:14,15 demonstrating [1] 335:23 demonstrative [4] 309:12 325:3 355:4 418:5 demonstratives [3] 305:2 324:11 335:22 denominated [1] 304:15 denominator [1] 515:4 deny [1] 434:22 depart [1] 452:12 departed [2] 362:6 382:17 departure [1] 510:5 depend [8] 308:6 320:8,10 322:4 390:5 436:15 440:20 453:10 depending [1] 390:14 depends [7] 315:1 383:23 454:21 455:8 505:19 510:11 512:10 depict [1] 438:1 depicted [3] 426:23 431:8,25 depicts [1] 301:14 deposition [5] 367:13 438:10,23 445:21,22 deprives [1] 304:21 derivation [1] 391:11 derive [3] 320:21 327:24 358:24 derived [5] 309:18 338:20 499:9,</p>	<p>22 514:6 derives [1] 360:5 describe [10] 301:13,13 309:10 321:19 331:15 356:13 357:25 367: 5 418:1 513:14 described [8] 338:8 404:20 409: 19 413:19 417:12 504:2,8 506:23 describes [5] 294:20 295:1 297: 18 369:2 514:5 describing [1] 295:24 detail [8] 295:1 325:1,18 381:12 413:21 417:12 420:21 421:1 details [3] 325:14 414:24 421:3 determination [3] 263:6 374:21 389:18 determine [5] 314:13 315:9 320:6 342:12 386:17 determined [6] 311:7 315:24 321: 20 332:16 355:21 511:11 determines [1] 502:9 determining [1] 460:11 developed [2] 420:9 440:13 developing [1] 311:10 development [1] 341:19 develops [1] 438:13 devi [1] 264:13 devoted [1] 314:2 dhar [13] 330:9 332:1,4,12,19,24 374:5,15 377:17,18 404:20 419: 11,12 diagram [1] 436:12 dies [1] 439:18 differ [1] 373:6 differed [1] 320:24 difference [11] 313:7 322:14 381: 2,5 383:15,22 390:12 394:15 440: 2 498:20 512:17 differences [8] 313:12,16 321:22 322:20 327:6,8 358:13 447:14 different [53] 302:1,1 313:1,8,8 317:21 320:4 321:15 330:9 332:8 333:23 338:5 342:3 344:12 345: 22 346:3 356:3 357:18 361:10 372:3 375:25 376:4 378:13 380: 22 382:19 390:24 391:15 395:2 399:10 405:17 406:23,25 408:5 410:9 412:25 413:13,24 415:9 424:10 425:10 441:6 449:3,6 454: 4,10 455:2,12 460:2 498:4 499:1, 3,12 501:1 differently [2] 328:11 371:24 difficult [1] 319:12 dig [1] 356:23 digital [3] 341:6 413:3 414:21 dimension [1] 295:9 dimensions [1] 313:12 direct [113] 294:16,21 295:2,8 297: 20 298:4,16,18 299:14 300:5,13, 15,23 301:8 304:13,20 305:11,21 306:3,10,21 307:3,3,9,15,19,20,20, 24 308:5,8,9,13,20 309:2,6,8,14,</p>	<p>17,17,20,25 310:8 311:13 314:1 315:13 319:20 321:4,13 322:22 323:12 325:1,2,4,8 327:14 330:20 331:8 335:15 337:6 341:18 342:2 356:7,18 367:1 370:1 372:13 374: 4 377:6 405:7,20 408:2 411:13 418:7 420:4,22 421:13 424:16 438:20 441:14 442:11,12,13,20,25 443:8,20 444:3,13,21 445:2,7,25 447:2 450:6,16 455:20 456:16 457:25 458:2 459:8 463:13 464: 17 466:12,21,22 467:3,12,21 468: 14 498:23 514:9 529:2 direction [5] 323:3 335:6 430:16 435:1 449:24 directly [10] 299:19 373:16 417:23 453:16 458:7 504:24 506:11,12 507:23,24 directs [1] 400:20 disable [1] 368:5 disaggregated [2] 407:11 414:14 disagree [5] 305:17 316:14 453: 11 502:11 516:22 disclosed [1] 338:8 disconnected [1] 338:22 discount [10] 308:4 428:9 446:25 464:8,15 466:5,9 467:13,23 468:3 discounted [1] 464:10 discounting [3] 365:6,7 392:3 discrimination [2] 390:14,16 discuss [4] 296:15 321:4,6 373:24 discussed [2] 294:7 508:17 discussion [6] 325:15 331:3 332: 3,15 388:11 443:25 discussions [2] 294:13 295:11 dish [1] 517:18 dismissing [1] 301:1 displacing [1] 304:8 dispute [2] 305:20 318:14 disputed [1] 372:21 disputing [1] 300:7 dissatisfaction [1] 459:12 dissatisfied [2] 433:11 452:24 distant [1] 372:25 distinct [4] 324:1 370:12,20 402:2 distinguish [1] 423:15 distinguishing [2] 319:20 372:10 distracted [1] 505:12 divide [2] 315:19 386:12 divided [1] 315:2 divides [1] 398:21 doctor [1] 502:2 document [2] 298:10 300:10 documents [3] 267:21,22,24 doing [20] 318:9 333:18,19 334:1, 18 364:19 371:18 386:6 391:5 401:14,17,18 402:19 403:7 407: 20 413:9,12 417:10 452:9 453:7 dollars [5] 315:14 399:25 411:10, 22 412:6 done [26] 300:9 301:3 303:8,15</p>
<p>D</p>			
<p>d-5 [3] 327:11,12,13 d.1 [1] 327:14 d.c [3] 263:21 264:18 265:24 daily [1] 301:16 dark [1] 432:2 data [24] 268:8 327:16,24 330:6 331:2 332:18 337:21,22,23 338: 20 339:20 340:1 342:8,10 399:22 404:20,21 407:9 409:15 414:19 416:15 436:17 450:14 462:24</p>			

<p>321:1 337:17 380:21 381:25 383:15 385:10 388:2,7,16 390:21 403:4 412:7 413:12 424:20 459:25 460:1,24 461:21 462:11 509:24 510:3 512:4 door [1] 395:18 double-check [1] 312:14 double-counting [1] 402:13 doubling [1] 383:1 down [17] 335:11 381:2 384:22 386:12 387:22 388:10 389:9 391:4 395:1 399:13 413:10 430:1 443:1 462:2 512:11 514:18 516:3 download [6] 268:2 405:11 406:12,17 412:16 415:8 downloads [5] 406:24 412:20,22 413:3 414:21 downstream [25] 326:7,8,19 327:9,16 368:17 369:8 372:23 403:12 404:14 423:20 424:1 427:18 429:5 430:2 434:3 436:17 437:12,15,18 499:13,15,19 500:10 501:2 downward [4] 324:16 333:2 403:21 405:2 drain [1] 405:23 dramatic [2] 302:24 440:19 dramatically [2] 439:19 440:24 drawing [1] 332:19 drawn [2] 359:8 426:7 drifting [1] 448:3 driven [1] 294:6 driver [2] 317:25 318:1 drives [2] 434:5 442:25 driving [3] 306:23 329:12 509:21 drop [1] 463:6 drops [1] 462:24 due [2] 334:10 413:25 during [1] 310:5 dynamics [2] 424:6,9</p>	<p>economics [6] 318:11,18 322:12 366:14 399:9 442:9 economist [8] 368:3 372:5 375:4 389:18,21 392:6 401:4 402:17 economists [2] 358:16 431:18 edge [1] 432:22 edison [1] 373:9 educable [1] 321:24 effect [11] 307:21,22 326:13 416:23 427:22 432:23 459:14 460:17 467:4,22 513:1 effective [28] 344:4 358:25 382:2,14 387:18 388:2 390:10,20 391:7 505:9,15 506:5 509:5,11,15 510:10,15,23 511:12,15,18,25 512:2,21 513:2,24 515:8 516:15 effectively [5] 310:21 402:8 421:18 438:24 509:18 effectively-competitive [1] 424:8 effects [9] 407:22 410:9,15,22 414:1 422:19 427:12 459:5,16 effort [1] 342:12 efforts [1] 399:5 either [15] 268:12 313:3 323:3 327:3 331:20 335:9 340:22 342:25 375:19 386:24 392:20 394:13 414:12 422:9 468:19 elasticities [1] 403:13 elasticity [9] 375:11 403:22 404:6,7,13,15,25 453:16,24 electronic [4] 267:15,19,22,24 elegant [1] 308:19 element [4] 300:12 365:25 415:25 418:16 elements [3] 343:7 382:7 448:17 elevated [1] 391:6 eliminate [1] 359:22 elsewhere [2] 427:23 434:24 embodied [1] 465:14 emerging [1] 364:22 emphasize [3] 329:1 334:2 450:21 emphasized [2] 318:1 421:20 emphasizing [1] 434:10 empirical [3] 414:19 450:6,14 empirically [1] 410:18 employed [1] 311:5 empty [1] 393:4 end [10] 321:5 361:3 363:9 385:14,17 405:3 414:17 415:16 433:4 507:21 ended [2] 382:12 390:21 ends [1] 357:9 engage [4] 373:2 377:14 451:19 453:15 engaged [1] 300:15 england [1] 264:9 enough [3] 386:3 389:9 463:8 entered [7] 341:5,24,25 417:4 445:7,25 447:1</p>	<p>enters [2] 417:7 439:17 entertainment [1] 264:20 entire [4] 380:6 418:23 419:25 424:12 entirely [2] 419:24 452:19 entitled [2] 268:13 403:12 enumerated [1] 400:21 equal [5] 453:5 464:16 500:13 501:15,17 equally [1] 392:7 equation [4] 307:18 321:25 322:2 501:5 equations [1] 440:1 equipment [1] 399:4 equivalence [1] 340:9 equivalency [18] 358:2 360:8 361:19,22,23 362:5,24 363:2 369:18 370:6,9,21 371:9 379:7,18 380:7 384:2 515:3 equivalent [1] 382:5 error [2] 418:18,20 especially [2] 298:6 328:25 esq [18] 264:8,9,10,11,12,13,14,15,21,22 265:3,4,5,6,13,14,15,21 essence [4] 298:25 305:7 308:12 367:5 essential [1] 378:21 essentially [5] 358:20 384:12 389:23 416:18 442:25 establish [1] 401:1 established [2] 341:18 498:3 estimate [7] 334:5,8,13 337:24 339:16 398:19 440:5 estimated [1] 508:1 estimates [1] 414:11 estimation [3] 312:21 358:23 372:3 et [1] 312:20 evaluate [1] 437:14 evaluating [1] 304:12 even [22] 300:4 345:8 346:14 370:11 371:17 375:17 380:20 400:23 424:12 429:20 433:1 437:24 440:6 442:6 443:14 463:3,4 500:14,25 501:23 502:6 506:2 event [5] 343:20 364:16 417:7,7 424:3 everybody [5] 297:14 318:12,12 359:10 405:16 everybody's [1] 457:18 everything [7] 307:17 318:10 326:24 388:2 401:12 501:15,16 evidence [38] 296:3 297:10 300:14 308:24 312:7 366:1 367:3,8,9,10,14,16 372:19 373:16 375:9,13 378:1,3,18 431:24 433:16,19 448:5,9,15 449:14,17,18,20,23,25 450:2,7,10,23 456:5,9 517:5 evidentiary [1] 360:11 exact [2] 418:11 453:11 exactly [20] 299:2 303:18 310:6</p>	<p>327:19 329:19 334:20 343:13 360:4 361:24 377:23 404:22 407:8 410:20 413:12 415:9 427:13 446:14,21 449:16 502:2 examination [4] 355:20 363:10 417:20 441:15 examine [2] 408:10 415:13 examined [2] 307:15 415:19 example [19] 320:2 324:20 328:4 366:19 375:14 377:1 402:7 427:15 443:10 444:1 449:14,19 454:15,22 455:18 505:22 510:18,19 511:6 examples [1] 420:11 excellent [1] 374:2 except [2] 438:4 457:19 exchange [2] 391:17 466:8 exciting [1] 380:16 excluded [2] 469:14,16 excludes [1] 419:22 excuse [10] 308:8 314:11 316:5 343:15 365:6 384:13 403:22 444:7 454:23 505:25 executives [1] 294:8 exercise [12] 312:21 321:2 322:17 325:9 385:25 401:11,15,19,21 445:19 507:21 510:9 exerted [1] 390:12 exhibit [10] 296:3 297:7,9 356:6 455:21 456:8,11,19,24 529:12 exist [1] 443:20 existence [2] 442:15 443:7 exists [2] 343:22 372:1 expect [5] 302:2 306:20 308:22 424:7 451:22 expected [2] 503:10,13 expense [2] 373:19 436:4 expensive [3] 364:16 376:6 430:13 experiment [16] 303:21 455:18 459:14,19,21,24 460:1,10,20 461:3,6,14 462:1,9 463:23,23 experiments [6] 303:17 460:24,24 461:8,12,14 expert [2] 395:4 463:2 experts [5] 317:25 332:8,13 373:9,11 explain [11] 305:19 314:4 325:19 381:9 416:12,23 419:8 425:1,9 426:15 446:24 explained [4] 408:3 413:21 438:9 468:22 explains [2] 309:13,17 explanation [1] 303:5 explicitly [1] 459:8 explore [1] 327:12 explored [2] 440:21 461:18 exposition [1] 398:12 expresses [1] 300:11 extensively [1] 440:21 extent [16] 304:8 311:2 320:24</p>
--	--	--	--

E

each [8] 306:3 307:5 319:2 331:23 333:25 336:17 359:10 438:25
ear [1] 377:4
earlier [21] 295:4 304:11 318:22 328:21 333:21 339:11 340:12 373:21 378:9,15 381:6 409:19 422:3 434:8 445:1 446:15,23 463:15 468:19 508:17 510:17
early [1] 441:17
earned [3] 505:11,17 506:12
easier [1] 451:17
east [1] 266:4
ebin [1] 265:6
econometric [6] 408:9 410:21,24 413:23 414:18 417:8
econometrically [1] 413:8
econometrics [3] 410:13 414:24 416:17
economic [6] 371:4 451:20,23 452:4 511:2 512:5

<p>326:1 341:10 345:16 369:3 423:8, 20 429:12 432:18 433:10,17 440: 20 445:14 446:9 extra [5] 306:16 318:9 427:22 432: 10,12 extreme [1] 432:22 eye [1] 303:2 eyeball [1] 416:15 eyeballing [2] 410:5,12</p> <hr/> <p style="text-align: center;">F</p> <p>fact [27] 267:23 307:5 308:12 309: 4 341:16 342:15 344:8 355:21 366:10,13,22 367:16 392:10 398: 10 407:15 410:3 413:23 430:15 451:3,7 467:20 504:14 510:13 512:12 513:22 515:12 516:16 factor [8] 308:24 316:24 322:9 402: 9,10 440:6,7 444:23 factors [12] 310:23 311:1 315:25 320:18,24 400:19,21,22,25 401:2, 25 402:11 facts [3] 360:15 433:7 502:12 factual [3] 305:21 339:6 340:24 failing [1] 387:1 fails [2] 386:22 400:10 fair [12] 355:14 400:23 422:21 453: 1 454:2 464:12,16 500:12 504:18 505:2 506:13 514:16 faithfully [1] 380:21 fakler [1] 265:13 fall [2] 439:15,16 familiar [9] 267:23 294:10,25 300: 17 304:25 305:3 341:7,14 508:9 fapr [1] 263:25 far [9] 310:18 334:19 359:12 430: 18 433:3,3 441:1 499:25 500:3 farrell [5] 421:6 422:17 439:1,25 440:25 fashion [1] 369:21 favor [2] 329:24 450:15 features [1] 339:25 feder [10] 263:15 267:10,11 336:3 380:18 428:3,7,19 429:23 457:5 federal [2] 267:14 268:3 federation [2] 264:2,4 fee [13] 307:2 310:9,10 448:13,16, 20 467:1,2,8,11,22 468:13 506:8 feel [5] 330:23 331:2 371:2 388:20 414:17 feeling [1] 386:23 fees [1] 447:20 felt [1] 448:14 few [9] 304:4 337:25 338:12 342: 25 343:8 363:14 411:15 421:4 462:3 fewer [5] 317:12 498:15 507:3,8 508:4 fifth [3] 264:24 265:8 457:5 figure [10] 309:20 314:12 336:18 399:22 408:17 409:9,10 416:13</p>	<p>446:17 502:2 figured [2] 509:18 510:20 file [1] 267:21 filing [5] 267:15,15,18,19,20 filings [1] 267:12 final [2] 311:5 437:25 financial [1] 455:10 financials [1] 315:20 find [11] 298:2 299:10 302:20 330: 14 357:4 366:25 389:12 404:24 416:6 447:4 462:21 finding [2] 335:6 411:18 fine [4] 296:22 306:18 356:1 386:4 finish [3] 401:19,20 517:23 firms [1] 366:14 first [48] 299:11 301:22,24 305:20 317:7,11 322:18,19 325:11 326: 11 328:4 329:11 331:20 333:16 334:4 339:14 356:16 358:9 365:1, 9 371:7 379:4,5,7 387:13 390:9 395:8 398:13 400:6,7,9 401:1 404: 3 408:14 409:25 415:16 416:24 420:19 421:12 425:17 426:10 427: 15 428:22 432:21 435:7 437:16, 19 516:4 fit [4] 377:5 384:24,25 385:8 fits [1] 295:3 five [2] 305:24 405:21 five-year [1] 412:9 fix [1] 505:4 fixed [1] 424:11 fixing [1] 374:15 flatter [1] 416:23 flaw [1] 398:14 flawed [1] 404:16 flaws [2] 398:5 403:14 flexibility [2] 458:6 459:1 flip [1] 403:11 focus [5] 327:20 332:15 345:10 408:14 422:6 focuses [1] 342:5 focusing [3] 345:10 398:13 434:3 folks [3] 305:1 469:4,17 follow [9] 329:13 359:25 360:21 361:7 382:18 384:1 419:15 462: 16 509:7 following [7] 336:7 357:6 361:4 383:25 388:13 446:9 510:6 follows [2] 318:17 332:3 footnote [1] 310:13 force [3] 305:14 341:1 392:4 forced [1] 390:24 forces [3] 322:12 368:12 389:5 foregoing [1] 530:3 forestalling [1] 367:20 forget [1] 419:7 forgone [1] 334:12 form [10] 267:22 366:3 367:3 369: 4 370:11 390:14,15 407:5 423:8 466:22 format [1] 267:21</p>	<p>formats [1] 267:22 former [1] 517:10 forms [7] 334:10 366:20 372:24 407:18 513:15 514:20 515:1 formula [3] 389:24 503:4 511:21 formulating [1] 309:8 forth [4] 399:4 402:2 407:10 420: 10 forward [3] 300:14 370:5 467:19 found [6] 384:21 411:4 412:19 416: 8 501:21 514:7 foundation [1] 508:6 four [7] 305:24 400:21 401:25 402: 11,12 424:25 441:6 fox [2] 265:16,22 framed [1] 374:11 frankly [1] 356:2 free [1] 377:10 freedman [1] 264:10 fuller [1] 398:11 fully [5] 345:8 361:8 364:23 377:19 402:20 function [2] 505:10,16 functional [3] 372:14 377:24 378: 8 functionality [3] 379:1 498:11 501:12 functions [1] 378:23 fundamental [4] 359:2 418:16,18, 19 fundamentally [1] 383:18 further [8] 368:5,7 407:4 410:17 421:9 440:25 448:4 450:2</p> <hr/> <p style="text-align: center;">G</p> <p>gain [1] 426:25 gaining [1] 437:7 gains [4] 431:15 436:3,4,14 game [1] 435:24 gap [3] 306:20 308:21 388:25 gather [2] 305:17 420:9 gating [2] 371:16 379:8 gave [3] 385:6,7 408:3 general [14] 267:11 358:2 375:11 390:5,8,18 394:24 421:19 440:1 447:23 510:11 512:7,8,9 generally [6] 332:5 336:2 343:12 376:12,16 509:14 generate [3] 418:14 423:24 434:2 generates [1] 426:13 geo [1] 266:2 george [1] 266:3 gets [7] 325:13 381:24 385:22 390: 15 432:16 439:11 464:9 getting [15] 327:3 334:3 335:1 355: 6 363:3 425:6,16 428:25 431:11, 13 434:15 448:24 465:5 466:8 498:12 give [4] 330:20 376:4 421:17 453: 12 given [4] 295:22 322:4 337:4 338:</p>	<p>9 gives [1] 314:17 giving [3] 431:3 457:13 467:13 glad [1] 374:2 glen [1] 296:5 goods [1] 375:1 gory [1] 421:3 got [24] 296:7 302:12 309:10 313:6 322:15 335:1 345:6,7,17 380:23 384:13,22 387:19 388:22 389:4 403:22 404:1,5,16 405:5 414:11 435:13 439:4 468:3 gotshal [1] 265:7 gotten [1] 388:4 govern [3] 267:15,18,20 graphs [1] 335:23 gravy [2] 326:16 427:21 great [8] 300:11 331:10 336:22 341:15 409:12 412:2 432:13 458: 14 greater [7] 294:23 298:19 322:25 341:9 445:17 453:8 503:6 greater-of [5] 389:24 390:1 511: 20 516:1,5 green [1] 409:21 group [11] 264:6,7 266:2 297:16 331:20 357:16 366:14 438:21 467: 12 501:10,13 groups [1] 459:25 grow [2] 425:18 503:20 growing [2] 426:24 433:22 grown [1] 338:22 grows [1] 439:18 growth [6] 405:21 406:15 411:23 412:8 416:20,22 guarantees [1] 511:7 guess [14] 295:17 299:11 312:22 317:16 319:18 334:7 373:13 377: 20,22 445:16 453:10 456:4,15 466:3 guest [1] 387:15 guidance [1] 381:13 guide [2] 364:5 429:14 guidelines [2] 267:23,24 guild [1] 264:4 gut [2] 386:22 392:22</p> <hr/> <p style="text-align: center;">H</p> <p>half [12] 306:14,15,19 308:22 381: 5,20 425:21,22 426:2,4 501:21 507:1 hand [5] 322:15 357:18,19 402:22 416:20 hand-in-hand [1] 419:24 handled [1] 464:25 handy [1] 331:9 handzo [30] 264:8 296:12,19,22,25 297:6 331:4,10 333:11 335:22 336:13 363:11 441:19,23,24 442: 3,5 450:4 456:2,10 457:9,20 463: 11 469:10,15,20 498:2 508:8 517:</p>
--	--	--	---

<p>20 518:5 handzo's [1] 330:8 hang [1] 346:12 happen [6] 381:7 420:12 425:9,11 463:19 465:25 happened [6] 344:9 366:18 416:25 461:24 462:5 514:5 happens [5] 381:10 423:14 426:21 427:14 428:2 happy [3] 317:22 416:14 467:18 hard [6] 330:22 379:3 399:10 462:4 463:1,7 harrison [1] 369:1 hauser [1] 374:13 head [2] 295:12 356:2 heading [1] 515:25 headline [7] 379:18 509:25 510:24 511:14 512:20 513:22 514:25 hear [5] 268:14 334:6 380:17 421:8 458:16 heard [3] 307:18 330:7 442:23 hearing [6] 268:12 336:25 441:21 469:6 515:11 518:1 heart [1] 434:4 heavily [1] 419:11 help [3] 307:6 387:11 402:16 helpful [6] 302:20 412:1 418:3 421:22 422:16 460:14 helpfully [1] 336:12 high [2] 357:10 366:16,18,20 371:12,25 372:12 373:1 374:22 377:15,21 378:4 381:11 382:9,10 383:6 385:9 386:14,18,22,23 higher [2] 306:9,11,12 315:4,14 359:14 361:15 362:4 372:16 374:6 388:5 390:22 392:14 404:25 437:3,4 444:8 453:2 501:10,11 507:21 highest [1] 511:22 highlight [1] 328:6 highlighted [7] 333:10,16 334:5,17 336:12,18 426:25 highly [5] 384:14 408:9 413:2 414:22 458:11 hit [2] 454:20,22 hits [5] 301:16,19 303:8 427:5 463:18 hold [3] 403:24 410:25 465:17 holds [2] 332:23 333:2 holistically [1] 378:2 homework [1] 337:4 honor [6] 317:23 346:9 362:20 387:11 441:25 517:3 honorable [3] 263:14,15,16 honors [7] 268:5 331:11 335:15 355:19 356:14 392:22 517:5 honors' [2] 311:11 321:8 hope [4] 390:25 392:2 503:18 504:3 hopefully [1] 401:22 hoping [1] 363:8</p>	<p>hour [2] 393:5 455:7 hours [10] 303:12 304:8 373:18 430:24 454:14,25 459:15 460:5,8,17 housekeeping [1] 267:12 however [1] 395:9 huge [5] 376:22 377:6 439:6,7,9 human [1] 451:12 hurt [1] 326:15 hurts [1] 326:23</p> <hr/> <p>I</p> <p>ideal [1] 430:10 identical [2] 382:24 404:23 identified [2] 398:13 514:20 identifies [1] 406:21 identify [2] 359:24 398:9 identifying [2] 403:18 513:14 iheart [4] 312:9 341:5,5 450:10 ii [7] 263:24 336:5 358:21 382:23 383:5 384:13 403:4 iii [1] 263:12 illustrate [1] 420:11 illustrates [1] 426:17 illustrating [1] 302:23 illustration [4] 303:11,22 434:25 464:2 illustrative [3] 422:8 463:24,25 imagine [1] 455:4 immediately [1] 315:10 immersed [1] 428:24 impact [30] 303:15,15 405:11 406:12,16,19,20,23,24,25 411:20,24 412:10,16,20,21,23 413:2 414:20 415:5,8 427:16 439:10 443:8 444:23 459:20 460:2,4,8 466:16 impacted [1] 415:10 impacts [2] 416:4 461:18 implement [2] 295:16 451:15 implemented [1] 455:17 implicates [1] 374:24 implication [2] 332:22 379:25 implies [1] 329:15 imply [1] 436:24 important [18] 299:17 300:12 307:7,13 328:24 340:9 378:18 382:17 383:22 398:25 423:13,25 435:23 445:18 455:15 458:21 460:11,13 improved [1] 294:22 improvements [1] 504:10 inadequate [1] 386:5 inappropriate [2] 370:22 407:25 inc [1] 265:2 incented [1] 464:7 incentive [9] 298:4 451:20,23 452:4,8 453:3,6,15 455:16 incentives [2] 454:9 464:6 inclined [1] 466:9 include [4] 311:1 376:24 398:25 406:2 included [5] 336:4 366:11 369:1</p>	<p>394:24 409:23 includes [1] 294:22 including [2] 360:1 411:20 inconsistently [1] 404:21 incorporate [1] 359:21 incorporating [1] 359:19 incorrect [2] 339:5 441:9 increase [9] 302:13 433:13 439:7 458:9 464:8,14,19 465:6 503:19 increased [3] 428:1 466:8 504:9 increases [1] 298:21 increasing [1] 425:8 increasingly [1] 338:22 incur [1] 460:19 indeed [2] 341:5 368:9 independence [1] 263:20 independent [7] 264:6 297:17,19 306:4 413:23 442:14 448:24 independents [2] 302:4 426:9 indexing [1] 468:20 indicate [5] 322:24 328:2 339:20 377:6 426:13 indicated [5] 324:25 358:19 363:16,23 465:12 indicates [5] 301:16 357:10 377:9 421:6 514:24 indicia [1] 304:23 indicium [1] 399:15 indie [3] 338:1 422:14 448:11 indies [8] 337:21 445:3,7,25 447:9 466:20,21 468:14 indifferent [1] 458:16 individual [3] 421:17 438:18 455:5 individualize [1] 459:2 individualized [1] 461:4 individuals [1] 459:23 induce [1] 298:4 industry [14] 318:13 334:10 335:3 336:16 366:18 418:11,23 419:25 424:12 438:20 441:8 504:7 505:7 506:16 inevitable [1] 345:15 infer [1] 517:4 inference [1] 367:20 inferences [1] 308:25 inferred [1] 517:5 influenced [1] 444:18 inform [2] 328:1 332:20 information [13] 268:14 303:24 304:2 311:11 315:15 321:9 338:3,21 346:19 389:15 462:25 469:1 518:3 informative [8] 294:5 307:10 308:15 309:3 390:2 445:4 447:9 462:11 informed [1] 312:9 informing [2] 389:21,22 infrastructure [2] 399:2 400:18 inherent [1] 386:22 inherently [2] 385:23 387:8</p>	<p>input [1] 453:25 inputs [7] 398:25 399:7,10 400:10,15,15 401:14 inquire [1] 387:10 inquiring [1] 517:24 inquiry [1] 299:20 instead [5] 374:7 376:10,14 388:1 437:11 intensity [2] 317:15 501:13 interactions [1] 295:25 interactive [9] 311:24 324:1 329:2,5,9 331:21 333:22 339:10 340:19 342:4,9,14,20 344:11 345:8 357:8,18 359:1 363:17,20 364:5,14,18,24 365:3,18,24 366:7 367:7,18 370:7,10 371:14 372:2,22 373:20 376:23 378:6,16,23 379:1,19 380:1 381:17 383:5 384:14 388:16,22 389:25 391:14,19 392:8,17 394:17 403:20 404:8,15 406:4 407:1,13 409:23 412:21 415:6,11,22 416:4,17,24 417:1,3 425:22 426:5 427:16 431:17,23 432:4,11,17 433:24 434:6,6 436:10 439:10 444:17,20 501:24 502:8 508:19 509:6 513:23 515:18 interactivity [7] 343:7 381:21 382:5 383:8 385:18 387:5,21 interest [2] 398:8 403:16 interested [1] 375:11 internet [1] 324:3 interpret [3] 362:25 372:5 517:10 interpretation [5] 401:5 421:16 438:16,18,24 interpreting [1] 369:17 interrupt [3] 331:4 369:23 400:3 introduce [1] 303:25 introduced [1] 369:16 inundated [1] 295:19 invalidates [1] 380:5 investigate [1] 321:20 investment [2] 400:24,24 invoke [1] 469:2 involve [6] 342:3,3 445:9,10 458:12 469:1 involved [4] 303:3 321:15 323:9,10 involves [3] 267:12 268:8 311:20 isn't [11] 330:25 373:8 378:1 407:15 443:11 450:22 452:9 464:20 465:16 503:25 512:19 isolate [2] 412:14 415:4 isolating [1] 345:19 issue [16] 294:4 300:8 327:12 369:16 370:17 371:16 373:7 375:18 376:15 379:6 403:17 448:10 451:18 508:10 512:16,18 issues [10] 304:12 321:25 337:10,11 357:3 370:13,20 379:8 405:18 463:9 item [1] 400:8</p>
---	---	--	--

<p>items [2] 319:7 448:3 itself [4] 300:21 311:19 391:25 423:17 iv [86] 303:17 311:7,16,19 312:1,2, 4 314:7 316:6 324:15 329:21 335: 10 338:13,15,19 339:7 340:7,23 341:13,19 342:22 343:22 344:4 345:12,24 355:6 357:7 358:3 359: 5,17 360:1 361:22,24 362:6 365: 14,23 369:17 370:9 371:3 377:25 380:22 381:15 382:21 383:13,21 387:18 391:12 394:17,18 395:12 430:14 450:6,9 454:6 455:14,20 456:16 457:25 458:2,21 459:19 460:12 464:17 498:3,14 499:3,5 500:17,21 503:5,25 504:14 507:2, 12 508:17 509:8 510:5,8,13 512:4, 13,19 513:6 514:9 515:11 516:14</p>	<p>1 420:6 424:24 428:24 441:5 498: 3 499:5 508:18 510:4 512:3 513: 14 514:13 515:25 516:4 517:1 judges' [2] 357:22 369:18 justification [1] 384:1</p> <hr/> <p style="text-align: center;">K</p> <hr/> <p>karen [2] 263:25 530:9 keep [1] 356:1 kendall [1] 264:12 key [19] 311:10 315:22,22 317:25 318:1 328:5 342:2,7 365:1 366:6 371:11 378:15 381:15 405:19 413: 1 415:25 422:18 437:13 458:8 kind [10] 302:2 357:11 367:22 368: 9 371:16 373:3 407:17 455:4 465: 25 506:24 knowing [1] 451:14 knowledge [1] 461:13</p>	<p>led [2] 315:16 510:5 ledger [1] 334:14 left [7] 424:2,6 432:2 435:4,5,16 439:12 left-hand [7] 426:18 435:12,18 438:5 513:12,16 514:19 legal [2] 401:4 402:21 length [3] 355:20 370:21 516:9 lenski [8] 327:16 332:9,24 333:20 373:9,11,17 376:3 lenski's [4] 327:25 330:5 374:18 375:4 lerner [3] 321:24 322:2 501:4 less [20] 306:15,19 327:18 328:12, 19 329:5,8 335:4 364:15 378:8 385:13 398:10 423:9 424:14 430: 13 447:1 453:3,6 468:5 500:24 lesser [1] 341:10 lettered [1] 400:21 level [7] 327:9 346:14 359:13 366: 23,24 381:11 462:17 leveled [1] 338:14 levels [2] 308:16 460:2 library [2] 263:2,18 license [56] 297:20 298:4,18 299: 14 300:5,23 304:13,14,20,21 305: 11,21 306:11,21 307:3,3,21,23,24 308:5,10,14,15,16,20 309:5,8,21 310:8 323:22 341:12 357:13,16 434:13,14 435:11 438:3,7 439:3,6 442:20,25 443:8 444:3,7,9 446:24 447:23 450:16 466:13,22,25 467: 3,6,12,21 licensed [1] 340:11 licenses [25] 294:5,21 295:8 300: 13 305:15 306:3 307:10 309:3,14 319:20 341:18 342:2,14 442:11, 14 443:20 444:14,22 445:2,8 446: 1 447:2 450:6 466:21 468:15 licensing [19] 308:8 318:5,20 323: 13,15 324:12,13,19 325:21 330:13 332:17 335:4,4 366:5 415:20 435: 2,6,13,17 life [1] 439:6 likely [2] 464:14 516:9 limit [1] 331:3 limitation [1] 413:12 limitations [2] 414:5,9 limiting [1] 316:24 line [6] 304:5 328:24 387:10 432:2 445:24 514:19 lines [3] 324:8 427:4 462:12 lineup [1] 302:6 linked [1] 464:19 lion's [5] 316:16 376:20 434:8 446: 25 447:5 list [1] 312:19 listen [6] 316:10 327:17,18 328:8 376:9,14 listened [3] 316:25 319:25 423:9 listener [5] 320:14 334:16 433:15</p>	<p>454:14,24 listeners [6] 303:1 364:15 369:9 458:11,12,15 listening [44] 303:16 320:11 328: 12,21 329:15,17 331:19 333:8,23, 25 334:11 364:6 365:21 372:24 373:18 376:4,9,13,21,23 377:3,11 378:10,16 408:6,6,7 414:21 415:6 416:3,4,24 418:13 432:5,6 434:1 436:16 442:7,8 455:7 459:14 460: 5,8,17 literally [1] 362:22 little [16] 336:6 346:13 362:21 368: 21 378:16 404:1 412:8 420:19 423:6 431:3,4,12 432:1,2 439:18 458:12 lives [1] 439:17 llp [5] 264:16,23 265:7,16,22 loaded [1] 516:25 logic [7] 317:15 326:24 329:13 371:5 388:13 431:21 435:15 logical [1] 369:21 long [3] 317:22 392:24 465:4 longer [2] 343:22 344:4 look [46] 298:10 301:7,23 306:13 307:1,12 313:16 321:15 327:9,9 333:15 345:16 365:5,9 373:22 377:17 378:3 383:3 388:21 389: 12 390:9 395:18 404:18 406:13 416:14,15,25 417:2,2 424:13 429: 8 436:6 437:16,18,21,22 438:22 455:19 498:23 513:4,6,12,20 514: 12 515:23 517:13 looked [15] 301:20 339:1 340:22 342:17 381:18,18 382:2 388:1 412:8 416:1,6 434:8 450:14 510: 17 511:13 looking [32] 301:15 314:25 327:6, 8 328:14 331:6 338:4 358:4 366:7 368:16 379:17 388:15 389:2 406: 16 410:6,10 411:16 414:18 415:9 419:4,5,24 421:7 437:14 438:25 444:23 449:17,17 456:25 457:2 463:18 464:3 looks [10] 299:18 321:23,24 340: 25 357:16 358:5,10 407:6 409:15 410:15 los [1] 264:25 lose [11] 329:2 430:15 436:8,14 453:24 454:14,19,24 455:3 461:9 462:20 loses [1] 439:14 losing [1] 333:24 loss [1] 411:9 lost [7] 333:24 334:10 431:22 452: 24 453:3 454:15 456:18 lot [20] 316:23 317:8 321:24,24 329:10 334:6 359:5 371:5 375:13 377:1,5,13,25 393:3 414:9 429:12 435:23 437:5,9 439:16 love [1] 431:19</p>
<p style="text-align: center;">J</p> <hr/> <p>jackson [1] 265:21 jacob [1] 265:6 janusz [2] 358:21 382:23 jared [1] 264:10 jarring [1] 357:11 jenner [1] 264:16 jesse [1] 263:15 job [1] 294:20 joe [2] 327:15,16 john [1] 265:14 johnson [1] 266:3 joinder [1] 369:16 joint [2] 297:9 529:13 judge [136] 267:3,7,10,11 268:11 297:4,7 303:4,14 310:3 312:3,11, 16 316:2,5,18 317:6 318:22 319:5, 9,11,18 320:15 331:13 336:3,22 337:1,4,11 338:10 343:15 344:16, 19,24 345:3,21 346:2,5,12,15,18, 355:23 359:15 360:7,11,22 361:5, 11 362:8,12,15 363:5 368:13 369: 12,15 372:7 373:6,14 374:17 375: 12 378:7 380:18,24 381:6 383:17 384:3,6,17 385:2,5,12,16,19 386:7 387:12,15,24 389:17,18 390:7 391:8 392:25 393:3 394:3,6,7,8, 11 395:6,14,17 400:3,14,19 401:6 402:5 403:9 409:4,5,6 412:5 422: 3 428:3,7,19 429:23 441:16,22 442:1 446:19 447:3 448:5,14,25 449:5,9,22 450:3 456:7 457:5,11, 14,17 461:20 462:13 463:10 469: 5,13,18,22,25 508:7 517:12,22,25 518:7 judge's [1] 509:8 judges [42] 263:1 296:16 304:3 309:9 311:25 315:7 330:16 332: 23 333:3 341:13 343:21 357:7 358:3 361:22 369:17 370:3,8,24 371:1 379:8 380:16,22 381:16 382:15 383:12 392:16 409:1 412:</p>	<p style="text-align: center;">L</p> <hr/> <p>label [28] 294:22 295:22 296:1 297: 17 300:3,22 301:5,23 306:10,13, 25 308:9 330:13 419:2 426:4 438: 3,25 439:22 444:6 448:24 451:14 453:9 465:22,24 466:5,7 467:7 469:13 label's [3] 306:12 419:20 464:7 labels [18] 294:20 295:4,8,19 300: 12 302:1 304:22 306:4 338:5 364: 15 367:5 424:10 427:25 442:14 446:25 450:16 467:12,21 labels' [1] 302:15 lack [3] 303:15 386:1 508:6 laid [1] 423:1 language [3] 371:8 449:16 517:4 large [7] 356:16 387:9 388:25 404: 4 426:9 440:7 463:8 larger [10] 315:19 334:24,25 338: 14 342:19 381:20 384:16 400:15 431:11 440:6 larson [1] 265:5 last [9] 342:1,25 343:8 365:2 400:7 403:4 417:19 438:4 517:3 late [1] 517:12 later [2] 332:10 341:4 latter [1] 517:9 laughter [3] 363:7 372:9 380:15 launched [1] 345:9 law [1] 402:17 lead [3] 298:21 435:21 437:3 lead-ups [1] 363:14 leading [2] 297:19 362:3 leads [2] 361:1 382:25 learn [2] 294:12 295:11 learning [1] 322:1 least [14] 306:8 312:12 319:12 364: 13,25 369:22 372:6 380:5 424:15 454:25 455:1 467:7 500:7 504:13 leave [8] 268:9 335:13 430:20,25 431:7 432:15,24 433:24 leaving [3] 424:4 429:4 510:8</p>		

<p>low [3] 374:3 386:19,24 lower [28] 306:5 315:21 323:14 324:13,20 404:7,14 425:22 426:4 428:14 429:24,25 431:25 436:6 439:12 443:21,23 444:4 452:11 453:24 464:24 466:23 468:8 499: 9,10,19,23 501:14 lowers [2] 426:21 428:14 luck [1] 372:7 lucky [1] 373:14 lucrative [1] 329:3 lumped [2] 407:12 408:3 lumped-together [1] 406:14 lumps [1] 406:7 lunch [1] 393:6 lys [4] 304:19 307:7 356:9 442:24 lys's [1] 305:7</p> <hr/> <p style="text-align: center;">M</p> <p>made [15] 295:3 310:12 312:4 333: 1 335:10 342:12 356:23 360:2 362:16 378:10 400:7 418:17 440: 20 451:9 467:9 madison [1] 263:19 magnet [3] 307:21,22 442:19 magnitudes [1] 446:15 main [3] 305:4 424:3 437:20 mainly [3] 316:15 317:1 318:19 major [6] 301:5 376:15 417:7 418: 17,19 451:18 majority [1] 337:17 major [6] 302:3 341:17,19 342:1 357:17 359:10 major's [1] 367:18 manges [1] 265:7 manner [1] 458:10 many [12] 314:10 316:10 317:8,12 320:9,10 357:21 414:24 424:23 428:25 432:3 461:8 margaret [1] 265:15 margin [1] 366:17 marginal [1] 318:8 mark [1] 457:15 marked [2] 297:9 456:8 marked/received [1] 529:12 market [41] 304:23 310:22 311:20, 23 318:19 337:25 342:9,11,20,25 343:5,5 344:13 359:4,8,11 363:21 364:24 365:11 366:5,7 367:6,7 368:17,19 369:5,8,10 384:15 386: 2 388:22 390:11,13 392:9 402:9 417:3 420:13 421:19 424:8 443: 14 509:6 marketplace [8] 338:20,23 339:20 340:1 342:15 363:19 390:3 391: 14 markets [2] 365:4 370:22 material [2] 311:12 343:25 materials [1] 338:9 math [4] 355:5 467:10,16 468:10 matter [16] 263:4 268:7,7 294:11</p>	<p>305:21 312:18 317:15 339:6 340: 24 343:14 389:14 402:21 413:23 429:10,11 436:17 matters [2] 295:21 405:4 mature [4] 504:7,13,15,19 mean [26] 300:21 304:6 307:22,23 318:24,25 319:23,24 323:21,25 366:12 383:24 391:25 405:25 422: 4 426:18 427:2,14 434:13 449:1 450:25 451:11 453:18 462:19 501: 24 505:3 meaning [5] 311:16 314:18 320: 12 359:10 364:4 meaningful [1] 460:16 means [3] 307:9 436:8 439:25 meant [5] 319:4,6,10 377:22 391: 25 measurable [1] 450:10 measure [13] 313:11 339:16 410:7 412:11 422:1 433:17 439:22 440: 13 450:14 460:4,7 461:18 498:19 measured [5] 303:15 318:2,23 374:7 409:16 measures [3] 366:4 408:7 460:5 measuring [5] 408:6 419:5 436:22 439:21 466:16 mechanism [3] 364:17 425:6 502: 21 member [1] 469:8 members [1] 343:24 mention [1] 312:4 mentioned [4] 294:3 309:15 466: 16 501:16 mentors [1] 375:14 merlin [8] 341:17,25 343:24 391: 17 464:18,22 465:5,8 merlin/pandora [6] 343:20 508: 20,23 510:14 511:18 512:22 met [3] 371:17,20 380:9 method [3] 388:15 389:9 403:20 methodically [1] 362:19 methodological [2] 337:10 357:3 methodologically [1] 382:23 methodology [10] 311:5 355:5,10 390:18 392:15 413:4 414:3 468: 15,19 509:8 metric [5] 502:7 504:23,23 515:13, 15 metrics [1] 505:4 meyer's [1] 377:8 mid-morning [1] 336:21 mid-tier [7] 342:5,14 343:3,6 344: 10 345:7,11 middle [3] 302:18 333:16 458:5 midst [1] 392:23 might [24] 319:19 335:16 346:1 366:16 368:6 379:2 394:14 402: 21 424:15 428:14 429:22 439:25 451:16 452:12,23 453:24 456:4 457:12 460:19 461:9 465:21 466: 9 469:20 511:1</p>	<p>million [3] 411:10,22 412:5 mind [12] 298:12,25 312:11 317:9 319:12 343:18 378:17 384:25 428: 7,8,18 469:23 mind-bending [2] 431:3,18 mine [2] 457:6,19 minimum [12] 340:20 381:18,19 382:16 383:20 384:8,21 386:4 464:22 465:11 509:15 514:7 minus [3] 302:16,16,17 minutes [4] 304:4 336:23 421:4 441:19 misheard [1] 469:23 mistake [3] 319:17 338:19 403:25 mistakenly [1] 368:17 mix [17] 302:22 365:22 426:3 427: 4 430:9,10 431:7 432:24 433:14 445:8 446:1 451:12 452:13,17 461:10,23 462:15 mode [1] 356:3 model [2] 417:21 438:12 models [1] 420:11 modifications [5] 320:23 321:6 401:23 402:21 403:5 modified [1] 459:22 moment [4] 306:2 410:25 428:18 517:21 moment's [1] 409:14 monetization [2] 503:20 504:9 monetize [1] 505:21 money [9] 317:17 329:8,10 338:4 427:22 434:23 436:10 454:25 465: 1 monitor [2] 459:5,11 monitored [1] 459:15 monitoring [1] 459:14 monopoly [9] 359:13 388:23,25 389:4 391:6,24 392:2 418:21 419: 5 month [20] 314:10,11,14,17,17,20 315:8 316:23 317:12,13 334:17 336:17 360:5 362:1 399:16 418: 12,15 441:8 507:20,22 monthly [1] 455:7 months [3] 267:17 342:1 462:3 morning [3] 267:3,9,13 most [10] 294:19 302:3 327:1,2 369:21 378:10 388:24 434:1 446: 25 516:9 mostly [1] 454:7 motivated [2] 445:4 468:14 motive [1] 450:5 move [19] 311:4 313:20,23 338:16 370:5 376:3 407:7 408:5,7 410:1, 11 412:3 422:22 429:5,16,18 434: 11 456:4 467:18 moved [2] 427:17,18 movement [1] 427:19 moving [2] 326:7,14 much [45] 296:24 303:5 305:12 306:17 317:18 318:6,13,15 319:</p>	<p>23 327:20 328:22 332:21 336:16 337:18 338:4 358:7 361:15 362:3 374:4 377:3 381:12 383:4 384:15 388:5 390:22 391:1 392:14 401:8 405:4 424:14 433:9,17 434:23 436:15 439:12,15,22 445:9,10 446:4,5 447:1 465:1 504:17 510: 20 multi-step [1] 363:4 multicollinear [2] 408:9 410:14 multicollinearity [2] 412:14 413: 8 multiplied [2] 314:15 317:2 multiplying [2] 316:20 507:14 music [89] 264:6,6,7,20 265:12 266:2,4 294:24 295:6,12,20 297: 16,19 302:22 304:8 317:18 318:4, 6,14,16,20 320:9 322:3,8 324:21 325:22 326:1,13,20,20 337:18 341:6 358:7 364:15 366:5 368:24 369:6 372:24 382:6 398:15,20,21 399:6,16,23 415:20 418:14 419: 20 422:5 423:7,9,15,17,20 426:3 427:4 430:12 432:6 433:14 434: 17,19,22 435:14,19,22,24 436:13 437:11 438:7 439:3,8 451:12,15 452:13 458:10,13,16 461:10,23 462:15 463:5,20 464:22 499:13 502:17 506:1 508:10,13,16 music/non-music [1] 383:8 musicians [1] 264:3 must [1] 367:20 must-have [5] 359:10 438:2,4,6, 25 myself [1] 404:5</p> <hr/> <p style="text-align: center;">N</p> <p>n.w [2] 264:17 265:23 namely [5] 335:2 362:23 401:13 407:13 434:6 narrative [1] 297:22 nashville [1] 266:6 natural [5] 428:13 430:10,17,21 437:8 naturally [2] 429:21 430:8 near [2] 463:17 514:18 nearly [2] 386:3 462:11 necessarily [4] 325:14 374:24 387:7 411:15 necessary [6] 342:4 343:25 371: 17 380:8 425:5 427:8 need [42] 268:9 299:8 310:4 320: 22 321:1 322:13 325:18 326:5,18 327:7 329:21 330:23 331:2 346:6 360:20 375:15 384:15 390:17 391: 1 394:12 403:2 411:14 425:17 433:19 437:4,12 445:8,14,15 446: 3,3,13 447:3 448:5,9 451:13 457: 12,14 469:2,14 511:19,23 needed [9] 314:9 329:20 333:1 344:11,12 363:24 399:11 403:5</p>
--	---	---	---

<p>511:3 needlessly ^[1] 355:10 needs ^[5] 398:19 451:20 465:18, 24 469:16 negative ^[9] 411:20,23 412:22 414:20 427:22 431:19 432:19,25 433:21 negatively ^[1] 416:4 negotiated ^[5] 304:22 345:17 444:14 465:9,9 negotiations ^[1] 401:10 neither ^[1] 307:11 never ^[1] 502:8 new ^[18] 264:17 265:9,9,18,18 267:13,15 339:20 340:2 341:24 342:8,10,13 343:8 344:17 365:22 418:9 426:24 next ^[12] 420:15 421:4 428:12 430:18,25 434:11,12 440:14 457:1 468:25 512:10 514:19 nine ^[1] 357:18 nomenclature ^[2] 319:12 421:22 non-binding ^[1] 390:19 non-interactive ^[28] 311:8 313:6,14 316:8 323:20 324:14 331:22 333:8 334:21 342:10 344:21,25 345:5 399:21 406:5 407:1,13 409:22 412:23 415:6,11 498:4,5,8 500:8,23,25 508:14 non-music ^[4] 378:14 382:6 386:13 398:22 non-must-have ^[1] 439:22 non-per-play ^[2] 513:15 514:21 non-price ^[4] 366:11,17,20,21 non-restricted ^[1] 298:9 non-statutory ^[7] 310:7 324:1 342:3 444:1 446:2,5 447:18 noncompetitive ^[3] 363:18 384:14 392:8 none ^[3] 377:19 448:17 516:4 nor ^[1] 307:11 normal ^[3] 295:7 406:9 439:5 normally ^[1] 462:19 note ^[3] 315:3 341:20 516:4 notes ^[1] 530:5 nothing ^[6] 306:25 365:14 385:23 444:10 456:21 512:9 notice ^[3] 334:24 430:22 463:4 notion ^[4] 384:2 420:1,1,2 notwithstanding ^[1] 330:3 number ^[64] 297:9 306:15 308:25 309:11,11,18,22,24 314:5 315:8,15,19 316:24 318:3,20,24,24 319:4,7,14,14,24 320:5,11 331:9 333:16 334:3,5,16,17,24 336:4,15,16 361:15 374:6,13 388:4,5 395:12 399:24 409:16 418:12 420:16 426:9 427:3,6 431:24 436:7 440:8,24 441:11 447:8 456:8,19 500:15,25 505:5,5,23 506:11,19 507:15,24 numbered ^[1] 400:8</p>	<p>numbers ^[16] 303:3 328:4 332:12 333:10 336:13 362:16 381:4 383:3 391:3 419:10,13 439:24 440:3,17,19 468:7</p> <hr/> <p style="text-align: center;">O</p> <p>objected ^[1] 456:5 objection ^[4] 414:13 456:6 508:6 517:2 objectionable ^[1] 517:11 obligated ^[1] 394:21 observation ^[2] 379:5 380:3 observe ^[1] 305:10 obtained ^[1] 411:5 obvious ^[2] 355:20 504:21 obviously ^[4] 361:15 440:19 462:7 500:1 occasion ^[2] 296:8 358:14 occur ^[1] 302:22 occurred ^[1] 392:3 occurring ^[4] 367:6,23 369:8 416:21 offer ^[12] 297:5,6 306:9,10 332:7 357:22 362:3 429:25 433:2 464:7,14 466:10 offering ^[5] 295:7 332:12 392:13 428:9 429:24 offers ^[1] 372:20 offset ^[1] 464:9 often ^[6] 312:18 375:8,8,10 434:21 462:20 okay ^[152] 268:11 296:19 297:14 299:3 301:15 302:22 306:1 308:20 309:12 312:22 313:20,22 314:4 318:3 319:3,5,22 320:1,20 322:10 324:5,23 328:19 332:2 334:11,25 337:8 340:14 346:6 361:6 364:21,25 367:12 369:12 372:18 373:20 374:2 376:16 377:18 379:22 380:13 382:12 387:17,25 388:11,18 393:2 398:7 401:20 403:19 404:1 405:16 408:15 409:13,20 412:4 414:5 415:17 418:3 420:18 422:15 424:21 428:15,20 431:2 432:20 433:2 434:19 435:3 436:9,15,24 442:23 443:2,6,10,23 444:2,12 445:13 446:12 450:9,13,25 451:8,25 452:7 453:22 455:9,19,23 456:1 457:24 458:1,4,20,25 459:10,18 460:1,7,23 463:16,22 464:5 465:16 466:19 467:10,15 468:2 469:5,25 499:1,8,17,25 500:4,7,18 501:18 502:1,1,4,5,11,22,23,25 503:5 504:14 505:2,20 508:2 509:10,16,20,23 510:13 512:19,25 513:5,7,11 514:14,23,24 515:6,23 516:3,13,18,19 older ^[1] 337:20 oligopoly ^[7] 359:9,18,23 360:17 365:15 366:23 388:23 on-line ^[1] 267:16</p>	<p>on-the-ground ^[1] 295:24 once ^[6] 303:12 315:23 320:13 403:16 430:23 505:8 one ^[98] 267:11 294:8 295:14 297:18 302:20,23 303:13 304:7,11 306:14,19 309:15 310:3 316:15 319:25,25,25 320:13,13,13 322:14,15 323:16 324:14 333:1,16 334:8,15 335:21 336:13 340:6,25 342:11 344:24 345:15,16,18,19 355:22 357:17 358:5 360:25 367:15 368:23 371:11 372:11 374:17 375:2 376:1 387:19 390:2,19 393:5 398:10,23 399:1 400:15 401:25 402:22 404:4 407:21,25 408:4 409:20,20,20 410:25 413:15 415:19,24 418:23 419:1,20 424:7 427:9,10,24 428:16 23 429:22 430:4,7,16 432:1 439:12 448:11 452:7 455:6 457:1,1 461:22 464:3 503:23 508:19,19 509:3,10 516:3 one-half ^[1] 508:3 ones ^[3] 295:16 339:11 511:21 only ^[10] 296:11,16 300:22 313:7 326:18 431:18 444:10 460:4 465:9 469:7 open ^[2] 346:14 370:11 opening ^[5] 330:8 335:19 356:21 450:21,22 openly ^[1] 382:9 operate ^[1] 455:12 operating ^[2] 323:22 345:12 operative ^[4] 341:11 515:13,15 516:16 opined ^[2] 503:25 504:14 opines ^[1] 442:24 opinion ^[8] 332:7,13 401:4 442:19 443:3 446:3 450:18 517:4 opinions ^[1] 370:24 opportunity ^[65] 317:24 318:8 322:5 323:13,14 324:6,12,19 325:15,20 326:11,14 327:2,4 329:19 330:12 331:18,24 332:16 333:7 334:11 335:2 415:21 416:1 417:20 418:8,22 419:1,6 420:5,8,21 421:8,15,18,23 422:4,18,20 423:4 425:3,24 426:13 427:19 428:2 429:7,15 431:16,20 432:20,22,25 433:21 434:9 436:2,11 437:3,14 438:13 439:20 440:5,12 441:8 501:7 507:7 opposed ^[8] 375:19 383:20 415:8 439:18 462:8 510:23 515:13 517:5 opposite ^[1] 323:2 optimal ^[2] 452:13 461:10 optimizing ^[1] 458:7 oranges ^[1] 316:21 order ^[18] 303:6 306:5 314:11 317:10 419:9 425:3,13,16 428:5,9 445:10 446:5,16 448:6,9 465:17,25</p>	<p>469:3 ordover ^[3] 358:21 382:23 383:10 ordover's ^[1] 391:3 organization's ^[1] 469:8 oriented ^[1] 404:5 orszag ^[32] 300:9,11 301:1 338:15,18 340:24 341:3 355:9 356:8,16 357:14 362:23 363:20 364:11 367:15 371:19 372:20 373:7 377:14 380:23 381:25 382:22 383:19 385:20 399:24 403:19 422:20 502:12 509:4,11,17 512:2 orszag's ^[16] 343:17 356:22 359:24 361:12 363:3 364:23 365:17 367:1 368:15 380:6 398:6,18 400:9 403:15 501:18 502:6 ostroff ^[1] 264:22 other ^[81] 267:20 299:16,23,25 300:5,6 302:14 304:8 307:5 310:22 311:23 314:23 316:8 323:1 326:2,15 329:11 334:10 337:23 338:4 342:18,21 343:2 357:2,19 360:12,14,15 361:9 363:14 373:11 374:4,10 376:1,18,25 377:10 384:15 388:15 389:15,16,24 398:25 399:4 400:5,11 401:14 403:5 407:9,17,18 416:20 418:14,14 422:10 423:9,23 429:10 430:8,21 434:25 438:11 445:10 446:23 447:21 448:17 449:18 453:5 457:8 460:5 461:16 462:5,19,19 464:16 469:6 511:1,7 512:5 513:24 515:1 others ^[4] 320:9 338:2 448:12 461:5 otherwise ^[11] 268:13 326:22 363:9 367:23 368:6 402:10 404:23 418:13 430:11 452:13 466:9 ourselves ^[1] 317:11 out ^[47] 268:4 296:17 301:23 302:1 307:9,18 325:1,7 330:23 331:2 339:13 345:14,19 363:17 365:17,23 368:6 391:10 394:18 398:23 407:11,18,21 409:25 410:9,14,20,22 412:14 413:6 414:2,8 415:4 424:2,4,6 428:5 446:18 447:4,19 448:2 462:21 463:3 507:6 509:18 510:20 517:18 outcomes ^[1] 335:25 outlined ^[1] 299:14 output ^[2] 422:1 425:8 outset ^[1] 309:16 outside ^[3] 268:15 346:20 518:3 over ^[25] 295:22 302:6 305:10,12,22,23 306:8 307:4 312:22 341:2 342:25 373:25 405:21 407:6 408:8 410:2 411:10 412:9 424:19 433:18 435:6 437:19 462:3 466:6 506:17 overall ^[13] 338:7 378:2 395:2 413:2 414:3,8 418:4 441:4 501:11 502:16,23 504:24 506:10</p>
---	---	--	--

<p>overcome [1] 412:13 overhang [1] 304:14 overrides [1] 448:6 overruled [1] 517:14 overstated [1] 439:19 overview [1] 356:12 overwhelming [1] 337:16 own [4] 267:8 319:12 325:11 420:22</p> <hr/> <p style="text-align: center;">P</p> <hr/> <p>p.m [4] 393:6 394:2 441:20,21 page [49] 301:8 309:6,16,25 310:13 314:1 321:12 323:11 324:25 327:13 331:9 337:7 361:17,21 364:3 370:4 371:10 373:25 374:1 379:9,17,24 380:4 398:3,5,14 399:13 400:2,6 403:11 408:16 409:9 411:16 412:18 416:13 417:12 456:11 458:4,6 459:8 463:14,17 468:11,22 513:10,13 514:4,15 515:24 pages [7] 294:16 311:13 321:9 322:22 411:15 445:21 511:10 paid [17] 331:21,21 333:8 334:21 338:5 377:11 378:5 382:3 383:6 389:23 428:4 434:6 500:9 502:9,16,19 506:10 pairings [1] 357:20 pandora [54] 303:17,20 323:22 327:22,23 328:18 329:5,17 339:17,23 341:4,16,24 342:6,15 343:1,2,9,23 344:9,15,21 345:7,11 391:17 392:6 394:21 420:24 430:15 450:7 454:6 457:25 458:9,21 459:1,6,10,15,19 460:15,19 462:9,19 464:18,21,23 465:1,8 503:10,14 504:9,20 507:1 508:3 pandora's [7] 342:5 394:25 454:4,23 455:14 458:6 503:18 pandora/merlin [13] 311:21 312:5 339:8,14 340:4,12 341:12 344:7 345:23 384:23 385:1,2 388:14 panel [2] 435:8 436:6 paragraph [14] 298:6,9,11 299:5,6,7,9 300:16 338:24 343:16 355:12 400:8 404:3 516:3 parallel [1] 305:12 parameter [1] 414:11 pardon [4] 304:2 323:17 327:12 379:16 part [26] 295:6 297:20 299:7,13,19 307:8 311:21 323:10 326:18 355:21 360:14 371:7 378:13 388:3 399:2 408:11 415:20,24 426:24 431:18 446:1,2 447:19 459:18 504:10 514:17 particular [15] 301:18 330:11 379:14 415:5,22 416:2 418:8 419:10 422:8 427:10 449:24 458:14,17 512:18 514:17 particularly [3] 328:23 357:7 516:</p>	<p>21 particulars [1] 455:8 parties [1] 516:7 passage [2] 338:21 517:16 past [5] 305:23 337:22 338:25 405:21 414:23 path [1] 413:10 patient [2] 362:22 363:6 pattern [2] 375:25 376:1 patterns [8] 327:10,17 424:1 429:1,6,8 paul [1] 265:13 pause [2] 333:11 405:17 paused [1] 517:21 pausing [1] 340:8 pay [31] 314:19 317:13 394:21 443:11 467:1,8,21 499:4,7,9,11,18,23 500:10,14,17,24 501:2,11,11,14 502:24 503:6,14 505:10,25,25 507:1,1 508:3,4 paying [8] 343:2,3 467:2 503:11 505:8,14 506:1 509:18 payment [1] 320:8 payments [2] 505:6 506:16 pays [5] 314:18 326:12 343:23 502:23 504:24 peer [1] 432:21 people [13] 316:9 320:10 326:22 328:8,12 374:8 375:9 377:1 429:5 430:19,22 433:10,23 per [49] 301:20,22,25 311:17 314:8,10,10,11,14,14,15,16,16,17,17,20,20 315:8,8 316:23 317:12,13 322:16 334:17,17 360:5,5 361:25 362:1 387:21 391:22 412:6,7 418:12,15 440:5 441:7,7 500:24 503:20 505:24 506:2 507:3,20,20,21,22,25 508:5 per-performance [1] 343:21 per-play [46] 340:20 381:19 382:16,20 383:14,20 384:8,21 386:4 387:17 388:2,3 389:12,20 390:1 394:17,19,22,23 455:1 500:19 501:23 502:7,8,15 503:7,11,24 504:1,5 505:10,15 506:5 507:12 509:13,15,25 510:21 511:3,21 512:20 514:7 515:11,15 516:8,15 per-subscriber [7] 314:12 335:23 502:17,18 507:2 508:4 515:13 per-user [2] 498:16 500:15 perceive [2] 303:1 512:3 percent [73] 302:7,9 303:7,19 304:6 305:23 306:14 309:14,19 310:11,15,15 311:2 315:2,16 328:17,19 360:2,9,25 361:1,3,3,25 362:11,14 373:19,21 374:7,7,12,14 376:19,19,19,23 377:18 380:25 381:1,24 382:13 383:9 384:22 385:10,10,12,16 386:2,11 387:8,22 388:9,10 389:6,8,12 390:24 391:2,4,5,11 392:17 447:15,16 448:2 467:2,13,</p>	<p>24 468:5,7,7,8,10 percent-of-revenue [2] 361:14 503:22 percentage [19] 308:21,22 314:24 315:4,21,23 382:3 383:7 387:2,3 388:1 390:1 391:7,16 468:4 506:1,3,21 509:21 percentage-of-revenue [27] 315:10 360:8 382:8 383:19 384:7 389:20 394:16,20,24 468:9 503:3,7,14 504:6,22,23 505:9,15 506:15,18 509:12,14,19 511:19,24 515:14 516:5 percentages [1] 362:4 perception [1] 364:22 perfectly [1] 339:15 perform [2] 323:7 407:2 performance [7] 314:16,19 316:7 319:24 320:13 409:19 430:17 performances [34] 301:25 313:6 314:10,14,16 316:11,13,23,25 317:12 318:12,21 319:4,5,13,14,16 409:16,18 412:15 421:24 422:2 426:3 436:10 458:10 498:16 505:1 506:11,13 507:3,15,20,25 508:5 performed [1] 322:21 perhaps [10] 294:19 303:2 336:14 356:22 364:23 370:23 373:11 382:24 416:12 429:16 period [7] 407:10 409:15 411:10 412:6,9 462:3 503:22 permission [1] 369:18 perplexing [3] 356:24 357:4,11 person [2] 319:25 409:20 personal [1] 517:7 perspective [4] 406:7 419:25 424:12 503:19 peter [1] 264:22 phrase [1] 371:23 physical [1] 355:5 physically [2] 313:23 398:12 picked [1] 303:19 picky [1] 458:13 pie [8] 378:15 426:2,24 431:9,12,12 436:14 437:23 piece [3] 296:20 436:19 451:15 pieces [4] 377:5,13 378:3 440:16 pitch [1] 294:21 place [4] 343:23 379:7 424:7 437:16 planning [1] 430:5 play [24] 303:13 314:9 316:1 319:25 320:13 322:16 387:21 388:6 391:23,25 409:20 419:23 424:10,11 429:1,13 432:14,24 433:8 437:7,21 500:24 503:21 507:8 played [19] 294:25 295:6,20 301:25 317:18 318:6,14,16 320:9 324:21 325:22 337:19 368:24 421:24 422:5 423:7,15,21 430:23 player [1] 417:7</p>	<p>playing [3] 303:1 304:7 507:19 playlist [2] 364:17 369:9 playlists [7] 364:12,20 365:19 366:11 368:16 369:1 458:8 plays [56] 298:21 300:2 301:16,20,22 302:8,9,13,15 306:6,16,20 318:9,10,25 319:14,16,21 326:1,12,19 327:3 337:18,22 338:2 365:8 367:4 369:6,7 412:21 416:17 419:20 423:16 425:6,8,17 426:22 427:1 428:1,10 431:15 432:7,10,12 435:25 436:8 437:17 466:8,13 500:15 501:1 502:20 505:6,23 506:2,19 please [31] 267:3 268:15 298:10 299:4,8 305:19 308:19 321:16 324:9 328:6 330:21 337:15 346:20 355:18 381:14 394:3 398:3,17 400:2 403:12 408:21 418:2 426:15 428:19 440:9 441:22 442:1 456:13 458:5 518:3,7 pleasure [1] 392:24 plus [3] 329:17 342:6 345:7 point [54] 294:14 295:3 299:11 305:4 306:1,12 308:1 310:23 322:6 332:9 333:13 342:7,7 344:4 345:14 359:2 370:8 372:20 376:16 378:9,20 379:14 385:22 389:7 398:23 399:14 400:6,7 404:11 405:15 409:25 413:1 418:4 423:12 424:5,14,24 425:18,19 426:1,6 432:12 433:15 437:13 441:18 444:25 455:4 458:8 459:7,16 460:21 465:21 501:5 516:20 pointed [3] 365:23 379:14 394:18 pointing [3] 365:17 449:23 514:15 points [11] 300:6 311:10 342:8,10 362:14 365:1 374:20,25 375:5 398:12 468:4 popular [1] 301:19 portable [1] 316:9 portion [4] 296:14,16 335:15 398:19 portraying [1] 438:12 pose [1] 320:17 position [1] 337:13 positive [2] 413:2 499:6 possibility [1] 419:22 possible [6] 321:14,21 407:16 454:12 461:2 469:21 possibly [2] 326:6 386:14 potential [1] 299:13 potentially [3] 313:12 402:25 452:24 power [3] 390:11,13 453:8 powerful [2] 305:14 378:17 predicate [3] 298:1,11 419:18 predicates [1] 423:1 predicts [1] 331:16 preexisting [1] 263:10 preferences [1] 458:11 preliminaries [1] 267:6</p>
--	--	---	--

<p>preliminary ^[1] 312:18 prepared ^[1] 315:13 presence ^[4] 304:21 364:12 366:21 517:1 present ^[4] 332:14 335:19 430:6 440:21 presented ^[1] 508:24 presenting ^[1] 424:23 presents ^[1] 509:4 president ^[1] 297:16 presumably ^[1] 373:10 pretty ^[14] 305:11 306:17,21 372:25 374:3 376:7 378:17 379:3 394:25 395:8 434:15 447:23 463:7 517:17 prevailing ^[1] 336:5 prevised ^[1] 380:24 previn ^[1] 264:15 previous ^[6] 316:15 332:22 361:20 421:21 426:20 439:13 price ^[34] 322:3,8 358:6,11,12 365:8,10,16 366:9,16 367:3,11,22 368:6,12,18 374:20,24,25 375:5,11 376:13 388:25 390:14,16 399:20 428:15 429:24,25 432:14 433:13 465:9,13 505:22 price-based ^[2] 375:20,25 price-induced ^[1] 375:17 priced ^[1] 452:11 prices ^[4] 358:5 366:19,23 375:10 pricing ^[1] 304:24 primarily ^[1] 327:23 primary ^[2] 362:7 384:1 principle ^[1] 510:11 principles ^[2] 499:8 507:8 prior ^[4] 335:25 342:15 358:16,17 private ^[1] 340:3 privileged ^[1] 518:3 privy ^[2] 346:20 518:2 pro ^[2] 320:8 502:21 probably ^[8] 295:18 303:19 389:2 393:1 421:22 467:14 469:12 499:14 probative ^[2] 304:12 399:15 problem ^[13] 316:21 359:3,18,19,23 360:17 403:2 410:23 412:14 413:7 448:8 455:2 461:25 problems ^[1] 388:22 proceed ^[4] 331:15 441:24 512:6 517:24 proceeded ^[5] 268:16 346:21 395:20 470:1 518:8 proceeding ^[8] 296:11 312:10 358:22 359:6,22 380:2 418:25 530:6 proceedings ^[3] 304:16 335:25 358:18 process ^[1] 467:6 product ^[5] 308:17 310:19,20 311:19 399:12 professor ^[94] 267:5 294:15 304:</p>	<p>19 305:7 307:7 311:12,24 312:3,5 316:6 320:2 325:7 328:25 329:14 330:4,9,15,19 331:8,17 332:11 333:6,18 336:15 337:5 339:11 340:19 343:16 356:8,9,18 358:21 359:16,24 363:1 368:13 372:20 374:12,15 381:16 383:10 385:20 387:20 392:13,19 394:9 404:19,21,23 405:7,10,15,19 407:15 409:14 411:5,7,13 413:14 414:4,25 417:11,20,22 418:6 419:19 421:2,6 424:2 428:3 434:4,16,21 437:19 438:9,13 439:1,25 440:4,11,18,25 441:2,7 442:4,6,24 445:22 450:18 456:3,12 463:12 502:2 517:16 profitable ^[1] 451:24 programmers ^[11] 294:23 295:5,15,19,25 296:1 428:1 430:11 451:12,13 461:10 programming ^[3] 295:13 298:20 399:5 promise ^[1] 466:12 promotion ^[2] 323:7 422:19 promotional ^[2] 412:21,24 prong ^[5] 386:5 390:15 394:16 503:22,24 prongs ^[5] 381:19 383:14 390:13,19 516:5 properly ^[3] 368:22 386:1 437:14 properties ^[1] 506:22 proportional ^[1] 439:15 proportionate ^[1] 302:15 proposal ^[4] 355:6 357:4 382:11 417:24 propose ^[2] 315:16 411:2 proposed ^[4] 389:25 503:6 507:22,24 proposing ^[4] 362:18 506:14,25 508:2 proposition ^[1] 308:2 prospect ^[7] 294:5,6 300:2 465:18 466:4 503:18 504:3 protective ^[1] 469:2 proves ^[1] 308:3 provide ^[4] 360:16 368:11 399:2 407:24 provider ^[1] 359:11 provides ^[3] 399:25 420:19 508:13 providing ^[1] 421:3 provision ^[2] 400:16 464:25 provisions ^[3] 367:17 368:4 511:1 provocative ^[1] 356:20 proxies ^[1] 394:17 proxy ^[1] 399:15 public ^[2] 299:5 382:11 publicly ^[1] 408:20 published ^[1] 267:13 pull ^[3] 307:24 411:25 447:25 pulled ^[1] 448:1 pulling ^[1] 301:11</p>	<p>pulls ^[2] 326:22 442:19 punctuate ^[1] 424:5 pure ^[11] 326:15 391:23,25 426:11,12,18 427:2,14,21 428:22 429:16 purely ^[4] 344:20,25 345:4 401:15 purported ^[1] 411:8 purpose ^[2] 305:15 330:18 purposes ^[6] 332:4,14 388:11 422:8 434:24 445:5 put ^[26] 296:17 297:23 299:4 300:13,25 302:21 303:12 305:1 308:18,19 309:7 311:25 335:22 339:19 341:15 369:21 407:19 413:3 414:9 427:20 439:24 440:3,17 447:1 453:14 463:25 putting ^[2] 309:2 357:2</p> <hr/> <p style="text-align: center;">Q</p> <p>quadrant ^[1] 435:5 qualified ^[1] 453:12 qualitative ^[2] 449:18,23 quality ^[1] 433:14 quantification ^[2] 449:24,25 quantify ^[13] 447:14,17,19,21 448:9,11,16,20,22,25 449:10,11,20 quantitative ^[4] 300:14 301:3 373:3 450:1 quantities ^[4] 304:10 318:18 320:1,2 quantity ^[4] 318:2,7 375:1 422:1 question ^[48] 297:23,23 298:1 300:1,2 305:25 307:6 320:17 333:5 336:9,11 341:1,21 345:15 359:15 361:9 363:6 364:20 367:13 368:22 370:11 371:23 375:7 380:6 385:25 386:21 390:6 394:11 401:13 402:14 424:13 428:23 430:7,14,21 433:6 434:17 441:3,10 445:25 446:14 449:6 499:16 502:22 511:13 516:25 517:3,11 questions ^[11] 338:12 369:15,23 380:25 402:11,12 438:23 442:10 456:3 468:25 517:6 quickly ^[2] 398:9 422:24 quite ^[13] 325:3 360:21 369:2 375:13,21,25 378:13 381:1 388:25 405:17 406:23 469:20 514:11 quo ^[1] 426:19 quote ^[2] 338:23 440:8 quoted ^[1] 371:9 quoting ^[1] 364:2</p> <hr/> <p style="text-align: center;">R</p> <p>radio ^[17] 263:10 264:5 265:2 311:18 313:2 324:3 328:6,18,23 329:7 333:21 373:21 376:22 377:6,10 407:14 434:1 raise ^[2] 433:6 517:2 raised ^[2] 337:10,11 raises ^[1] 505:22 ran ^[2] 410:19 415:1 randi ^[1] 265:4</p>	<p>range ^[5] 315:16 374:16 382:8 440:23 447:12 ransom ^[1] 264:21 rao ^[1] 264:13 rata ^[2] 320:8 502:21 rate ^[159] 305:10,16,22 306:5,5,9,10,11,13,22,22 307:3,4,24 308:5,6,21 309:9,13 310:15 311:2,6,16,16,18,19,22,22 312:1,2,13,13 313:24 314:7,24 315:10,16 316:6,8,22 320:22,23,25 322:3 329:22 334:23 336:5 338:19 339:7,16,21 340:2 343:9 345:22,23 355:6 357:4,9,21 360:5 366:8,8,12,12,15 382:11 383:19,20 384:23 385:3,24 386:17,23 387:7,17,18,19 388:2 389:2,4,5,10,12,20,20 390:1,10,20,22,23 391:6,7,22,23,24,25 392:4,14,18 394:18,19 401:1 417:23 426:22 428:4 430:17 434:18 437:4 442:15,19,20,25 443:7,11,16,17,20 444:8,11,24 447:10 455:1 460:11 464:10,20 465:6 467:14,23 468:4,5,6,9 500:9 502:8,15,23 503:7,7 504:6 505:10,16 506:5,15,19 507:18,22,23,24 508:1,18 510:23,24 511:20,24,25 514:7 516:1,8 rate-making ^[2] 358:15,16 rate-setting ^[2] 436:25 445:18 rates ^[112] 263:7 304:21 305:11,21 308:13,14,16,20 309:4,21 310:20 311:6 317:25 324:15 340:2,20,23 342:13,17,18,25 343:1,1,2,5,8,10,12,21,22 344:2,3,14 345:13,19 358:24,25 359:13 363:17 365:3,7,15,15 366:22 368:11 382:2,8,14,16,25 383:2,6 384:8,14,21 389:22,23 394:22,23 401:9,24 415:17 442:13,25 443:8,15,21 444:4,5,18 464:24 498:4 499:1 500:17 501:23 503:11 504:1,5 507:2,12 509:5,11,13,13,14,15,15,25 510:10,15,21 511:3,12,14,15,18,21 512:2,13,20,21 513:2,22,24 514:25 515:8,11,14,15 516:8,15,16 rather ^[9] 313:2 356:20 381:1 384:8 399:24 400:25 439:17 457:23 503:23 ratio ^[17] 358:2 361:19,22,23 362:5,24 363:2 369:17 370:6,9,21 371:8 379:7,18 380:7 384:2 515:3 rationales ^[1] 371:22 rdio ^[1] 343:10 reach ^[1] 323:8 react ^[1] 368:2 reaction ^[2] 356:21 365:20 read ^[10] 299:8,8,13,19 367:24 371:2 463:3 501:18 513:18 516:21 reading ^[4] 364:7 384:24 404:1 440:9 reads ^[1] 516:3</p>
--	---	---	---

<p>real [6] 295:23 313:7 375:18 388:22 420:12 465:19</p> <p>real-world [1] 427:8</p> <p>realities [1] 338:23</p> <p>reality [1] 295:24</p> <p>really [30] 295:17,21 304:5 314:21 317:18 355:14 368:5,7 373:2 376:8 377:14 380:17 389:13 402:20,24,24 409:13 413:5 416:19,21 417:1 429:13 433:3 434:5 437:10 448:11 455:8 465:24 506:10 517:3</p> <p>reason [21] 323:5 357:5 360:22 363:16 368:11 375:24 376:10 384:6 406:18 408:13 413:18 421:22 433:25 498:14,18 499:1 502:11 507:5,5 512:5 516:22</p> <p>reasonable [6] 440:17,23 447:22 452:6 466:6 517:6</p> <p>reasons [12] 322:25 323:2 360:12,12 407:24 408:3 427:25 445:8,9 446:1,22 466:20</p> <p>rebuttal [39] 296:4 338:16,24 343:17 355:11,17 356:5,12,18,21 360:4 361:8,18 364:3 367:2 369:20 370:5 379:10 380:20 398:4 405:6,9 408:17 411:1,17 412:19 417:13 419:14 420:10 421:1,14 422:12 428:17 430:5 440:11 468:23 501:19 502:6 514:4</p> <p>recall [15] 335:21 336:3 356:25 360:7 364:7 392:5 394:20 465:3,15 498:24 502:5,10 504:17 512:23 515:10</p> <p>received [3] 297:10 456:9 466:22</p> <p>recent [2] 341:4 451:8</p> <p>recess [6] 336:23,24 393:4,6 441:17,20</p> <p>recited [1] 502:12</p> <p>recognize [1] 456:15</p> <p>recognizes [1] 310:7</p> <p>recollection [7] 391:11 395:9 513:21 516:14,20 517:7,17</p> <p>recommend [1] 309:9</p> <p>recommending [2] 311:6 392:6</p> <p>record [65] 268:6 296:18 299:4,9 304:22 313:1 317:13,16 318:3,15 320:7,7 322:4 323:13 324:12,19 325:21 329:1,7,9,16 330:13,19 331:18,19 332:17 333:7 334:9 335:2,3 336:16 339:21 360:15 365:7 367:4 368:23 369:5 378:4 395:16 405:23 411:21 418:11,23 419:1 420:2,21 421:15,17 422:4,10 424:14 429:15 432:7 434:22 438:19 441:8 453:9 458:1 464:6 501:22 502:19 505:7 506:16 516:6 517:8</p> <p>recorded [2] 398:15 458:10</p> <p>recording [1] 453:25</p> <p>recordings [4] 263:9 452:12,17</p>	<p>508:14</p> <p>recounted [1] 294:15</p> <p>recounts [1] 298:14</p> <p>recross [1] 529:2</p> <p>rectangle [2] 431:25 432:3</p> <p>red [3] 409:21 435:25 436:14</p> <p>redirect [1] 529:2</p> <p>reduced [1] 302:15</p> <p>reduction [3] 391:16,21 433:14</p> <p>refer [2] 408:24 468:20</p> <p>reference [6] 294:14 313:21 361:20 375:10 408:16 416:13</p> <p>references [2] 330:4 417:14</p> <p>referred [2] 356:23 442:11</p> <p>referring [1] 364:11</p> <p>refers [1] 404:18</p> <p>reflect [4] 321:14 365:4 368:12 515:1</p> <p>reflected [4] 298:19 340:11 342:13 442:13</p> <p>reflects [3] 301:9 368:18 389:5</p> <p>reformulate [1] 499:15</p> <p>refresh [3] 516:13,19 517:16</p> <p>refreshes [2] 513:21 517:7</p> <p>regard [1] 461:10</p> <p>regarding [4] 309:3 346:19 357:8 447:10</p> <p>regardless [2] 317:17 429:7</p> <p>regards [1] 366:1</p> <p>register [2] 267:14 268:3</p> <p>regression [11] 406:11,13 407:6,23 410:16,19 411:8 415:1,13,16 416:10</p> <p>regressions [2] 320:3 411:6</p> <p>regular [1] 294:21</p> <p>regulated [1] 366:19</p> <p>regulations [4] 267:13,18,25 268:3</p> <p>reitman [1] 337:10</p> <p>reject [1] 515:25</p> <p>rejected [1] 529:12</p> <p>relate [1] 377:21</p> <p>related [13] 267:20 370:19 413:25 414:15 458:7 500:9 502:17 504:25 505:4 506:11,12 507:23,24</p> <p>relates [1] 453:15</p> <p>relating [3] 356:16 405:7 422:23</p> <p>relation [3] 320:19 370:23 413:24</p> <p>relationship [1] 310:21</p> <p>relative [2] 325:9 400:22</p> <p>relatively [2] 458:15 518:5</p> <p>relevance [5] 298:3 299:10 304:2 445:11 446:6</p> <p>relevant [18] 294:19 299:19 312:12 313:11 336:4 342:21 373:16 402:1 418:24 429:9 446:10,13,17,20,20 448:4 449:21 460:14</p> <p>reliable [1] 407:20</p> <p>reliance [2] 330:5 338:15</p> <p>relied [6] 332:8 340:9 341:13 344:3 345:24 384:7</p>	<p>relies [3] 330:10 373:10 404:19</p> <p>relieve [1] 467:7</p> <p>rely [5] 338:19 357:14 363:16 373:9 389:19</p> <p>relying [5] 327:15 360:19 419:11 450:24 515:12</p> <p>remain [1] 469:17</p> <p>remainder [1] 518:4</p> <p>remains [2] 339:15 365:11</p> <p>remember [8] 336:1,2 368:1 384:20 391:20 450:11 457:21 502:1</p> <p>remind [1] 359:9</p> <p>renegotiate [1] 344:13</p> <p>renegotiated [1] 341:16</p> <p>renewal [1] 466:10</p> <p>repeat [3] 344:1 366:3 384:12</p> <p>repeated [1] 330:3</p> <p>repercussions [1] 455:10</p> <p>repertoire [1] 319:8</p> <p>replaced [2] 341:10 345:11</p> <p>replicated [1] 381:23</p> <p>replicates [1] 358:20</p> <p>report [2] 295:15 404:20</p> <p>reported [4] 263:25 328:2 375:19 412:18</p> <p>reporter [1] 530:10</p> <p>reporting [1] 407:22</p> <p>represent [1] 342:8</p> <p>representatives [6] 268:9 296:1 469:7,8,9,14</p> <p>represents [1] 426:3</p> <p>reproduced [1] 296:4</p> <p>required [3] 267:25 303:22 465:2</p> <p>requires [1] 358:4</p> <p>requisite [1] 370:14</p> <p>research [1] 373:10</p> <p>respect [9] 295:22 323:6 330:11 365:14 436:19 445:2 450:5 466:20 515:7</p> <p>respective [1] 466:6</p> <p>respects [1] 421:10</p> <p>respond [11] 300:19 317:6 337:13 338:14 339:3 341:22 356:7 364:21 413:11,17 452:16</p> <p>responding [2] 401:10 421:2</p> <p>response [9] 317:7 345:14 356:18,22 380:24 404:12 433:12,13 438:23</p> <p>responsiveness [1] 460:25</p> <p>rest [2] 356:15 373:22</p> <p>restate [1] 324:9</p> <p>restricted [15] 268:6,14 296:13,21 299:7,18 330:19,25 336:7 395:16 408:18,19,20 469:1 517:22</p> <p>restricted-only [1] 296:18</p> <p>restrictive [1] 299:4</p> <p>result [16] 302:18 308:9,23 335:1,8 366:8 386:22 416:8 427:6,11 439:9 454:14 460:19 464:9 466:13 508:2</p> <p>resulting [1] 368:11</p>	<p>results [14] 307:25 332:1,4,6,24 333:2 387:7 404:24 407:8 413:6 417:11 433:8 453:24 507:9</p> <p>resume [1] 267:5</p> <p>resumed [2] 336:25 441:21</p> <p>retail [5] 358:5,6,11,12 399:20</p> <p>retained [1] 358:17</p> <p>retaining [1] 332:14</p> <p>return [1] 400:23</p> <p>revenue [46] 314:24 315:3,4,9,23 333:24 334:10,12 360:10 361:1,4,25 362:4 380:25 381:1 382:3 383:7,9 387:3 388:1 398:15 405:23 411:21 418:11,15 423:11,24 434:2 439:14 452:24 453:3 454:15,20,22 455:3 459:12 500:1 502:17 505:11 506:2,4,6,17,22 509:21 511:7</p> <p>revenues [10] 326:2 329:2 431:17 453:23 503:2,20 504:25 505:16,18 506:12</p> <p>reversal [2] 411:5 413:6</p> <p>reversed [3] 404:24 416:9 417:11</p> <p>review [1] 296:8</p> <p>reviewed [4] 297:24 338:25 344:16 371:22</p> <p>revision [2] 411:14,25</p> <p>rhapsody [1] 343:10</p> <p>riaa [1] 264:7</p> <p>rich [73] 265:3 267:5 268:5 294:2,14 295:10 296:14,20,23 297:3,5,11,12 303:23 304:1 310:17 311:11,14 312:17 316:4 320:16 321:8,11 322:1 331:7,11,14 335:14,17 336:14,20 337:1,2,3 338:11 346:8,13,17 355:2,19 356:4 362:18 363:8,12,13 369:13 373:23 378:19 381:8 387:10,14,16 391:9 392:22 393:2 394:4,5 395:4,15 398:2 401:3,7,403:10 407:19 409:8 412:12 428:21 441:14 456:6 463:14 508:6 517:2,15</p> <p>right-hand [11] 302:10,17,19 328:16 334:19,20 426:21 431:8 432:1 435:8 515:24</p> <p>rights [11] 312:20 313:4,5 340:3,10 341:1 342:3,4 444:8,9 498:11</p> <p>rmr [1] 263:25</p> <p>roadmap [2] 356:15 420:20</p> <p>rollin [1] 264:21</p> <p>room [4] 268:12 469:6,16 518:2</p> <p>roughly [4] 381:1,5 382:25 386:12</p> <p>round [2] 391:10 468:7</p> <p>routinely [1] 295:4</p> <p>row [3] 328:4,5,7</p> <p>rows [2] 329:11 333:23</p> <p>royalties [5] 298:22 395:2 468:16 501:11 502:9</p> <p>royalty [8] 263:1,6 338:4 340:2 506:10 509:17,22 511:22</p> <p>rubinfeld [17] 311:24 339:11 340:</p>
---	--	--	---

<p>20 387:20 392:13,19 512:20 513:1,14,22 514:6,20,25 515:7,12,19 516:15 rubinfeld's [3] 312:6 381:17 502:3 rule [1] 267:8 rules [1] 267:14 ruling [1] 500:20 run [6] 303:21 330:24 392:24 434:25 459:21 461:12</p>	<p>413:11 415:1,24 423:12 429:18,19 437:20 second-degree [1] 390:16 section [16] 360:3 361:7,18,21 370:6 379:17,23 392:23 398:4,17 399:14 400:1 403:12,14 404:4 405:9 sections [2] 296:17 369:20 see [58] 298:23 301:4,24 307:12 317:8,19 327:9 328:16 329:4,20 330:22 336:8,9 342:19 344:13,14 365:6 368:8 369:4 375:22 376:10 381:11 390:12 399:17 400:9,11 403:25 409:2 416:2 426:24 434:7 435:17 443:16 444:9 445:23 446:10 448:9 451:5,6 457:3 458:5,18 459:19 460:2 461:24 462:15,17 465:24 466:2 469:23 501:21 513:13,21 514:19 515:24 516:11,12,18 seeded [2] 458:14,17 seeing [5] 322:12 368:5 383:11 386:8 392:3 seek [1] 368:24 seem [3] 399:22 450:20 463:7 seems [5] 301:1 307:8 369:21 402:25 517:9 sees [1] 377:9 segment [4] 268:6,10 332:15 417:19 select [1] 458:8 selected [1] 430:11 selectively [1] 458:9 seller [18] 310:21 320:21,25 401:9,16,24 402:4,8,18,22 403:2,6,8 418:25 419:2,3 464:7,13 seller's [1] 464:6 sellers [3] 312:19,25,25 selling [2] 318:4,4 sense [14] 319:7 373:8 377:3 389:8 390:10 394:24 431:13 435:10 444:20 447:13,24 504:2,8,12 sensitive [1] 322:7 sensitivity [1] 440:22 sentence [1] 299:12 separate [6] 344:19 364:20 407:17,21 410:14,22 separating [3] 410:20 413:6 414:2 series [5] 369:14 410:1,1 420:10 510:25 serious [1] 370:13 seriously [1] 380:6 service [89] 313:15 316:9,22 317:12,14 324:14 331:23 337:19 339:10,21,23,24 340:19 342:5,14 344:10,21,23 345:8,12 359:1 363:18 365:3 370:12 371:13,13 374:10 378:13,16,22 381:17 383:5 391:14 394:17 398:20 399:1,1,3,8,24 400:11 418:10 422:5 430:20 438:7 443:11 444:7 451:19,22 452:2,12,16,18,19,22 453:4,15,18,23</p>	<p>454:7,10,11,14,19,24 455:11,11 461:5 465:18 499:10,11,12,19,24 500:9,14,16,23,24 501:9,12 502:16,23 504:24 505:8,14,20,21 508:10 service's [1] 452:8 service-provided [2] 364:12,17 services [109] 263:11 311:9,24 313:3 314:8 316:8 318:20 320:4 324:1 329:11 333:22 342:5,9,20 343:3,6,6,11 345:17 357:8,18 363:20 364:4,5,14,18,24 365:6,17,19,21,24 366:7 367:7,18 370:7,10 371:14 372:2,14,17,22 373:20 376:23 379:1,19 380:1 391:19 392:8,17 399:21 402:6 403:20 404:8,16 405:21 406:5,5 407:1,12,13,14 408:5,7 409:17,22 410:9 411:9,19 412:24 413:3,25 415:7,12,22 416:5 417:3 423:10,24 425:22 426:5 427:16 431:17,23 433:25 434:6 436:10 437:2 439:10 444:17,21 498:5,8,12,15,17 499:2 500:9 501:7,23,24 502:24 503:6 508:19,21 509:6,18 513:23 515:18 session [7] 268:17 346:22 395:21 470:2 517:23 518:9 529:6 sessions [1] 529:8 set [16] 267:14 306:5 311:18 339:9 341:22 342:19,22 355:22 366:14,15 394:22 405:17 418:4 420:10 433:7 517:6 setting [6] 305:16 343:22 357:21 444:1,14 508:18 several [2] 338:14 427:9 shadow [4] 304:13,18 305:14 444:24 shadowing [1] 304:18 shall [3] 411:25 422:22 434:11 shapiro [18] 267:6 312:3 316:6 337:6 343:16 359:16 363:1 368:13 411:25 421:13 422:17 442:4 445:22 450:18 456:3,12 463:12 529:3 shapiro's [3] 294:16 311:12 517:16 share [25] 316:16 337:25 338:1 376:20 377:4 398:14 419:23 422:9 424:15 429:13 431:11 432:9,15,24 434:8 435:20,20 436:9 437:7,8 439:5 446:25 447:5 448:22 465:11 shares [3] 422:9 424:11 437:22 sharing [2] 424:11 511:7 sharp [1] 510:5 sharply [1] 362:6 shift [2] 419:20 433:10 shifted [1] 430:9 shifting [5] 326:6,7 423:23 430:12 437:23</p>	<p>shifts [1] 419:23 short [2] 337:16 465:4 shortage [1] 457:9 shorthand [1] 323:19 shouldn't [1] 509:24 show [14] 336:14 373:17 380:19 405:5,11 408:21 410:21 411:8 425:3 427:12 429:20 440:4 448:15 501:4 showed [3] 333:21 373:20 411:18 showing [3] 372:17 433:24 441:1 showings [1] 372:11 shown [3] 324:10 431:14 435:20 shows [7] 308:4 326:4 373:18 378:4 425:19 432:3 440:1 shrinks [1] 431:9 side [12] 299:5 334:14,20 426:18,21 431:8 432:1 435:13 455:3 464:6,7 469:16 sidebar [1] 296:15 sidley [1] 264:23 sign [8] 295:8 298:4,15,18 307:2 466:21,21 468:14 signature [1] 530:10 signed [2] 297:20 466:3 significance [2] 410:3,8 significant [13] 300:3 308:24 313:12 342:24 390:12 401:14 417:7,19 447:8,8 454:20 462:8 498:19 significantly [2] 334:25 374:6 signing [6] 294:20 300:13,22 308:9 466:12 467:3 signs [1] 418:10 similar [11] 313:5 329:14 343:1,2,12 362:17 374:14 382:24 501:6,7,12 similarity [2] 312:19 358:15 simple [1] 416:9 simply [9] 307:1 314:3 315:2 339:5 372:17 407:11 413:6 439:18 444:23 since [16] 327:22 328:21 331:4 333:12 338:19 340:22 341:19 365:14 380:7 381:13 382:7,7 432:19 456:2 517:21,22 singer [1] 265:4 single [2] 422:4 424:14 sir [6] 311:15 321:12 356:6 363:15 369:24 378:20 sirius [204] 265:2 268:8,13 294:7,23,25 295:25 297:20 298:16,20 300:13 301:4,19 302:6 303:8 304:22 306:7,8 310:8 313:15,24 314:10,15,18 315:20 316:13,25 319:21 320:22 322:16,25 323:14 324:13,16,20 325:22,25 326:12,21,21 327:18,21 328:8,10,12,15,21 329:4,6,15,24 330:13 331:21 332:17 333:7 334:8,14,15 335:4,11 336:17 337:19,21 338:2 358:6,24 360:6 361:19 370:7,12,23 371:14 372:2,</p>
S			
<p>s.e [1] 263:20 sake [1] 421:11 sales [7] 405:11 406:12,17 412:16 415:8 416:3 504:11 sam [1] 264:14 same [50] 306:17 312:25 314:18 317:13,17 320:1 325:8 326:24,25 333:19,22 334:1,20 335:1,6 343:13 345:22 346:2 359:25 361:19,24 362:5 375:18 382:25 383:13 385:5 386:10 387:3 391:1 402:14 407:8,9,10 410:20 422:12 426:4 440:14 444:8,9 446:22 447:22 461:15 468:11 498:12 500:14,25 501:13 502:3 505:25 514:10 sample [4] 381:20 463:9 502:3,4 samples [1] 462:10 sat [3] 383:5 384:13 403:4 satellite [7] 263:9 311:18 313:2 337:19 379:3 407:14 508:15 satellites [3] 400:16,25 402:6 satisfaction [2] 460:3,6 save [2] 454:25 465:1 saving [1] 468:13 saw [6] 323:21 340:3 342:18 376:22 383:4 385:1 saying [23] 297:13 300:7,21 305:9,13 307:1,8,10 361:11,13 364:9 384:18 390:20 404:13 410:5 414:23 427:7 448:21 452:1 502:3 506:9 510:2,3 says [11] 298:14 306:4 333:17 334:9 343:19 365:18 421:14 431:9,19 435:16 514:19 scale [2] 416:18 446:22 scenario [12] 426:12 427:15 428:12,23 429:2 430:18,25 431:1 434:12 436:24 438:11 440:12 scenarios [11] 424:23 425:1,1,2,10 428:16 430:4 437:22 440:4,17 441:6 screen [7] 264:3 331:5,12 333:12,17 409:4 445:23 sdars [6] 263:12 336:5 358:17,21 382:23 445:21 seated [3] 267:4 394:3 441:22 second [21] 299:12 317:20,23 322:6 328:24 330:20 340:16,18 358:8,10 395:11 398:10 400:4 408:12</p>			

<p>21 373:18 374:5,9 376:5,9,13,21 377:2,7,9 378:5,10,22,24,25 379: 19 398:14,20 399:1 400:11 401: 14 404:6,14,25 406:7,12,15,16,19, 24 407:18 409:21 411:20 412:15, 20 414:21 415:5,5,20 416:3,3,20, 24 418:10,24 419:19 420:24 421: 24 422:6 423:7,15,16,21 425:7,17, 21 426:4,22 427:3,25 428:9,14 429:4,4,24 430:9 431:6,8,10,22 432:14,15,17,24 433:10,11,13,20, 24 434:18,21,23 435:11,14,19,21 436:3,13,16 437:23 438:3,7,8 439: 3,3,7,8,17 441:9 442:14 445:3 450:15,19 451:1,9 454:3 456:8 458:25 459:4 460:25 461:3,7,12, 17 464:3 466:11 467:4 468:15 469:1,3,6,17,18 504:15 506:10,25 507:3,16 508:3 529:15 sit [1] 513:4 sitting [2] 312:15 388:14 situation [7] 359:12 388:13,24 419:3 431:5 435:2 436:3 six [1] 342:1 size [1] 319:1 skepticism [1] 300:11 skill [1] 530:4 skin [1] 517:18 skip [1] 424:19 skipped [2] 312:22 437:19 skipping [1] 467:10 slacker [1] 343:11 slice [8] 376:22 426:23,25 432:3 433:22 435:18,25 436:14 slide [27] 294:4 305:2 309:23,24 311:9 313:21 321:16 324:11 356: 11 358:19 359:7 418:4 420:15 421:5,21 422:22 424:17 425:14, 15,18 426:12 429:20 431:2 434: 12 437:25 438:4 439:13 slides [2] 418:5 425:20 sliding [1] 446:22 slightly [4] 356:3 371:2 388:20 412:24 small [4] 338:6 429:16 462:3 463: 5 smaller [5] 315:5 337:21 426:9 431:12 439:23 so-called [2] 304:13 412:14 solely [1] 319:1 somebody [4] 336:12 376:8,12 463:4 somehow [4] 317:3 339:13 445:9 446:4 sometimes [1] 338:3 somewhat [4] 315:14 323:10 406: 6 431:9 song [6] 303:13 304:7 319:6,25 320:13 430:23 songs [8] 301:25 318:3,24,25 319: 13 368:25 507:9,19</p>	<p>sony [5] 264:20 302:3 422:13 426: 8 440:14 sorry [19] 296:12 323:18 331:4 345:3 358:9 379:13 383:17 394:6 404:1 419:17 442:9 453:20 456: 18 457:3,3 469:19 505:12 509:1 517:12 sort [13] 316:21 338:3 372:15 379: 5 385:19 386:10 387:3 400:4 407: 3 424:10 432:21 458:5 462:21 sound [7] 263:8 414:19 452:12,17 453:25 466:2 508:14 soundexchange [14] 264:2 296:5 307:2 310:10 328:25 331:1 338:9 358:17,22 373:12 447:20 467:1, 22 469:19 sounds [3] 387:24 464:16 512:23 source [1] 514:11 space [2] 341:6 502:8 speaks [1] 300:20 specific [1] 423:6 specifically [4] 373:25 401:10 414:11 512:24 specification [1] 417:9 specifics [1] 454:21 spent [2] 359:5 421:25 spinning [1] 301:21 spins [2] 302:16 319:21 spoken [1] 294:9 spotify [18] 326:23 329:3 364:14 368:25 369:8 377:2 417:4 425:23 426:6 432:8 433:10,18,20 436:5,8, 17 439:14,15 spotify's [1] 432:11 square [1] 266:4 stable [1] 504:18 staff [1] 298:20 stand [1] 355:24 standard [1] 410:23 start [11] 298:8 317:19 370:3 371: 17 387:2 391:3 423:22 430:2 435: 1 442:10 503:10 started [9] 361:21 365:1 382:13,15 383:13 385:9 387:25 506:25 509: 12 starting [14] 297:21 302:8 359:2 370:8 385:24 390:9 391:6,24 417: 1 425:17,19 426:1,6 445:23 state [3] 380:4 404:4 504:21 stated [1] 510:21 statement [3] 449:4 450:21,22 statements [2] 509:17,22 states [7] 263:1 264:3 298:15,17 357:6 403:19 417:5 stating [3] 368:14,14 378:9 station [1] 303:9 stations [2] 458:13,16 statistically [1] 412:25 status [1] 426:19 statute [3] 400:20 401:5 402:12 statutorily [1] 324:21</p>	<p>statutory [47] 304:14,14,21 305:10, 22 306:5,11,13,18,22 307:4,21,23 308:5,15,16,21 309:4,13 310:14 311:2,7 313:5 323:22 340:3 341: 12 391:22 442:15,19,24 443:7,10, 16,17,19 444:5,11,14,18,24 446: 24 466:25 467:13,23 468:4,5,6 stay [3] 306:21 316:3 325:10 staying [1] 379:4 steer [22] 294:8 301:4 302:7 322: 25 364:14,19 365:18 450:19 451: 2,4,10 452:3,8 453:4,6 455:16 459:22 460:15 464:22,23 465:2, 18 steered [1] 430:16 steering [121] 294:6,6 298:5 299:1 300:12,15,24 301:17,22 303:7,25 304:6 306:3,23,24 307:6,12,25 308:6,15,17,23,24 321:21 322:9, 20 323:4 326:5,8 327:1,4 359:20, 21 360:2,13,21,23 361:1,13 362:9, 10,17 363:24 368:16,18 381:22 384:18 385:7,11 386:10,17 387:4 389:3 391:12,18 392:6 407:18 419:23 420:1 423:16 424:7,9 426: 11,12,18 427:2,14 428:5,22 429: 13 430:19 431:6 432:21 437:10 445:4,10 446:2,4,24 447:7 448:17, 21,22 449:10,11 450:5,7,10,15 451:15,19 452:11,22,23 453:2,15, 22 454:3,9,13,18,24 455:18 458: 12,15,24 459:5,11,16,20,25 460:2, 19 461:1 464:5 465:23 466:4 501: 6,16 507:7 510:20 steering-induced [1] 465:17 steers [1] 461:9 stenographic [1] 530:5 step [2] 314:23 437:20 stepped [1] 324:8 steps [9] 360:1 371:5 381:4,23 382:1 383:4 386:20,25 388:7 steven [1] 264:9 stifles [1] 368:7 still [11] 308:13 337:21 362:2 365: 15 366:19 392:23 433:3 446:12 449:20 452:3 454:6 stomach [1] 393:4 stop [1] 380:10 stopped [3] 376:8,12 455:6 story [2] 369:22 465:4 straight [3] 328:3 340:23 441:18 straightforward [2] 355:15 369: 19 strategy [1] 344:15 streaming [19] 329:2,5,9 405:11, 20,21 406:1,2,4,8,15,20,25 411:9, 19,23 412:9 413:14 415:11 streams [1] 461:4 street [2] 264:24 265:23 stretch [1] 355:24 strickler [89] 263:16 303:4,14 310:</p>	<p>3 312:3,12,16 316:2,5,18 317:6 319:11,18 320:15 337:5,11 338: 10 343:15 344:16,19,24 345:3,21 346:2,5,12,15 359:15 360:7,11,22 361:5,11 362:8,12,15 363:5 368: 13 369:12,15 373:6,14 374:17 375:12 378:7 383:17 384:3,6,17 385:2,5,12,16,19 386:7 387:12,15, 24 389:17 390:7 391:8 394:7,8,11 395:6,14,17 400:3,14,19 401:6 402:5 403:9 409:4,6 412:5 446:19 447:3 448:5,14,25 449:5,9,22 450: 3 457:11 461:20 462:13 463:10 strickler's [1] 380:24 strictly [1] 422:7 striking [2] 411:4 413:5 strong [1] 503:16 strongly [1] 412:20 strongly-indicated [1] 416:10 structure [4] 314:25 370:4 506:15 516:1 structured [1] 369:14 studies [1] 373:17 study [5] 373:4 374:18,19 375:4 460:16 stuff [2] 429:9 457:8 styled [1] 434:12 sub [11] 314:14,16,17 315:8 360:5 361:25 440:6 441:7 505:24 506:2 507:22 sub-bullet [1] 359:7 subject [5] 268:7,7 298:3 373:4 459:24 submitted [1] 296:5 subs [13] 427:3,6,6,11,17 430:1 431:10,22 432:4 433:18 435:22 436:4 439:8 subscribe [6] 374:9,10 376:5,14 377:2,2 subscriber [17] 311:17 314:11,20 334:9,17 336:17 418:9,13,24 441: 9 455:5 462:17,20 507:3,20,25 508:5 subscribers [23] 320:11 326:13, 21 331:20 423:21,23 430:15 431: 6 432:11,15,23 436:7,16 454:19 460:25 461:8 462:2,16 501:10,14 505:3,5 508:15 subscribers' [1] 364:5 subscribing [1] 461:24 subscription [1] 455:6 subscription [53] 263:11 311:8, 22 312:2,13 313:3,14 314:8,19 322:14 323:15,21 324:13,22 325: 23 326:25 327:21 330:14 332:18 333:9 334:22 335:5 339:7,17,24 343:6 345:13 358:11,25 374:9 377:11,12,23 385:3 399:21 404:8,15 454:11,18,23 455:11 498:5,7,16 499:2 500:8,13,24 501:22 502:16 503:2 505:22 506:7 508:20</p>
--	--	--	---

<p>subscriptions ^[1] 439:15 substantial ^[1] 405:22 substitutability ^[1] 374:19 substitute ^[3] 377:7 432:17 433:20 substitutes ^[3] 375:22,23 413:15 substituting ^[4] 328:22 329:4,6 415:21 substitution ^[20] 320:3 323:6 326:9,19 327:10,17,19 328:14 333:24 422:19 424:1 427:18 428:25 429:6 430:3 434:4 437:2,6,9,13 substitution/promotion ^[3] 321:22 322:6 324:6 substitutional ^[2] 412:22 414:1 sufficient ^[3] 386:15 448:15,15 sufficiently ^[6] 371:12,25 372:12 374:22 377:20,21 suggest ^[4] 268:2 392:17 405:17 516:7 suggested ^[1] 268:1 suggesting ^[1] 390:18 suggestion ^[1] 367:2 suite ^[3] 264:17,24 266:5 sullivan ^[1] 265:14 summarize ^[3] 325:18 379:9 403:17 summary ^[2] 311:10 421:12 superseded ^[3] 341:10 344:6,7 superseding ^[1] 344:17 supplanted ^[1] 504:6 supplies ^[1] 336:10 support ^[2] 364:2 449:25 supported ^[2] 340:25 360:14 suppose ^[2] 306:1 435:1 survey ^[37] 327:15,22,25 328:3 330:5,9 332:1,12,13,20,24 333:2,20 335:8 373:9,11,15,18 374:6 375:9,13,19 377:18 404:20 419:11,13 429:9 431:23 433:8,16,19 436:17 462:14,17,25 463:2,8 surveys ^[4] 332:8 428:23 462:21 463:3 suspect ^[1] 324:24 sustained ^[1] 508:7 suzanne ^[1] 263:14 switch ^[3] 374:8 375:9 433:18 switched ^[1] 463:19 switching ^[7] 374:8 375:16,16,17,20,25 376:1 sx ^[1] 469:23 synonymously ^[1] 319:16 synopsis ^[1] 398:16 system ^[2] 267:16,19</p> <hr/> <p style="text-align: center;">T</p> <p>tab ^[3] 296:2 456:21 457:5 table ^[31] 301:7,16 309:25 325:8 327:11,13 330:19 331:7,16 332:19 333:6,20 335:9,9,18 336:10,13 337:6,17 338:7 373:20 411:12,14</p>	<p>412:1,2 413:19 426:20 434:7 440:10,14 510:17 tables ^[1] 422:11 tad ^[1] 441:16 takeaway ^[1] 441:4 talked ^[13] 295:18 315:5 326:17 328:20 365:12 382:4 420:23 426:20 427:5 435:23 446:22 468:18 499:5 talks ^[2] 434:21 438:20 taller ^[1] 432:1 tantamount ^[1] 382:22 target ^[2] 322:16 371:13 teaches ^[1] 322:3 tease ^[2] 407:21 463:3 technical ^[6] 450:19 451:2,16,18,21 452:2 technological ^[1] 451:9 television ^[2] 264:4 508:15 tells ^[3] 305:13 365:13 432:20 tend ^[2] 311:1 412:3 term ^[4] 319:4,15 323:25 516:8 terms ^[30] 263:7 302:25 306:8 308:19 327:2,3 338:6 339:6,12 340:1 342:15 366:17 374:8 375:21 377:15 382:1 383:3 388:3 391:7 401:9 408:9 413:8 414:14 452:24 453:3,23 462:10,10 511:2,8 terrestrial ^[7] 328:23 329:7 373:21 376:22 377:6,10 434:1 test ^[4] 371:25 410:17 416:2 460:24 tested ^[3] 307:14,14 411:11 testified ^[5] 315:12 329:24 338:18 343:18 447:6 testifies ^[1] 334:7 testify ^[3] 296:21 299:3 341:3 testifying ^[2] 300:23 392:5 testimony ^[116] 294:11,16 295:2 296:4,9,13 297:21 298:3 300:16,20 301:8 307:16,20 309:1,7,16,17 310:1 311:13 313:11 314:1 315:13 318:23 321:5,7,10,13 322:23 323:12 325:1,2,4,8 327:14 330:15,20 331:8 332:11 335:15 337:7 338:17,24 341:7 343:17 346:19 355:11,18,22 356:6,8,12,15,19,21,22 360:4,15 361:8,18 364:1,3 366:3 367:1,2,25 369:20 370:5 377:8 379:10 395:12 398:4 403:12 405:7,8,10,20 408:2,17 409:6 411:1,13,17 412:19 417:13,19 418:7,17 419:14 420:4,10,22 421:1,13,14 422:12,23 423:2 430:5 438:20 440:11 442:12,18 449:14 455:20 456:3,16 457:25 458:2 459:9 463:13 468:23 498:24 501:19 502:6 514:5,9 testing ^[1] 343:4 tests ^[2] 410:21,24 tethered ^[1] 442:21</p>	<p>text ^[1] 403:25 theme ^[1] 405:19 theory ^[5] 321:23 322:2 364:13 440:1 441:1 there's ^[39] 299:7 305:20 316:20,24 317:8,8 321:21 322:13 324:24 326:5,6,14 327:4 331:19 333:1 336:15 340:2,16 342:24 345:4,5 359:3 361:18 362:13 364:25 365:10,13,16 368:18 370:6 371:11 374:22 375:24 377:13 378:8 385:23 386:7,8 388:24 therefore ^[12] 298:21 323:15 324:14 326:23 386:14 404:8,16 408:8 423:10 433:1 500:13 503:20 they've ^[4] 302:12 339:23 341:10 345:7 thick ^[1] 517:18 thin ^[1] 372:21 thinking ^[9] 326:5 391:23 393:4 401:8,21,22 423:13 463:18 464:5 thinks ^[1] 464:8 third ^[4] 305:4 311:5 400:1 404:3 third-party ^[1] 500:2 though ^[6] 335:18 344:14 375:17 386:9 469:3 506:2 threads ^[1] 309:7 three ^[13] 303:12 304:7 344:22 345:17,20 357:17 398:9 407:12 408:5 413:2,7 430:24 517:1 threshold ^[4] 370:17 372:3,16 379:6 throughout ^[2] 316:12 423:2 throw ^[1] 307:9 tick ^[1] 312:18 tier ^[1] 345:22 tiers ^[2] 344:23,24 ties ^[1] 417:23 title ^[1] 301:15 tn ^[1] 266:6 today ^[9] 324:11 356:15 378:23 422:3 423:2 445:2 463:15 468:19 517:23 todd ^[1] 265:5 together ^[21] 309:2,7 311:25 345:18 369:22 377:5 378:4 384:24,25 399:8 406:15 407:12 408:4,8 410:1,11 411:19,20 413:3 442:21 462:14 toof ^[1] 265:21 took ^[15] 299:13 301:18 314:7,7,9 381:16 384:20 388:8 407:9 413:10 417:1 424:11 447:19 448:2 509:17 top ^[7] 374:1 379:24 380:4 425:21 432:3 435:5 463:17 topic ^[1] 369:15 total ^[4] 334:2 357:19 431:14 505:6 tough ^[1] 393:3 toward ^[3] 302:7 437:23 464:22</p>	<p>towards ^[8] 301:5 303:7 333:16 364:15 430:12 452:11 513:13,16 track ^[10] 306:22 307:4,5 308:14,20 309:4 409:20 425:25 437:12 510:4 tracked ^[1] 305:22 tracking ^[2] 307:9,11 transcript ^[1] 530:4 transitional ^[1] 504:1 translate ^[1] 453:8 translated ^[1] 499:10 translates ^[1] 499:23 transmission ^[1] 263:8 transmissions ^[1] 311:8 trepp ^[1] 264:11 trial ^[6] 268:16 296:2 346:21 395:20 470:1 518:8 tricky ^[1] 392:1 tries ^[1] 423:14 triggered ^[3] 390:3,15 516:6 trouble ^[1] 336:7 true ^[25] 300:4 305:24 306:24 341:23 365:20,22,23 378:1 380:18 391:1 410:6,10 414:6 432:18 450:17 451:6 453:21 464:4,20 465:7,16 502:4 503:21 512:19 530:3 try ^[8] 369:22 379:2 415:4 424:15 461:16 462:7 467:15,18 trying ^[14] 295:5 343:18 356:2 365:2 371:4 372:4 386:16 405:15 412:3,11 414:23 416:23 450:11 467:17 turn ^[16] 311:9 337:6 355:17 356:17 398:3 400:1 405:6 416:16 417:18 437:25 456:11 458:4 463:12 511:15 513:10 515:23 turner ^[1] 264:12 turning ^[1] 356:11 turns ^[1] 325:7 twice ^[2] 357:10 402:14 two ^[27] 306:20 321:13 322:12 327:7 329:11 357:24 358:13 364:25 370:10,19,22 372:11,14 373:17 375:1 381:4 382:17 390:13 395:8 398:25 408:3 429:21 437:2 498:20 500:11 501:7 508:18 type ^[16] 299:20 316:19 322:4 323:16 325:9 327:19 331:23 375:9,12,18 382:25 398:24 433:2 434:3 446:22 461:3 types ^[11] 295:4 333:25 342:4 343:11 372:11 407:12 408:5 409:17 413:13 437:2 501:7 typically ^[1] 390:3 typo ^[1] 325:5</p> <hr/> <p style="text-align: center;">U</p> <p>ultimate ^[3] 308:1 309:11 382:11 ultimately ^[7] 298:21 315:9 320:6 332:23 369:7 394:21 425:4 um-hum ^[1] 361:5</p>
--	--	---	--

<p>unable ^[1] 408:1 uncomfortable ^[1] 346:13 under ^[31] 296:2 322:16 323:22 335:24 341:12 343:23 345:12 371: 8 392:4 398:18 401:15 402:12 403:19 418:25 421:12 428:22 429: 1 440:12,23 455:1 456:21 466:25 500:17 503:3 504:23 507:2 510: 15 511:20 515:17,17,18 undercut ^[1] 368:5 underlay ^[1] 311:21 underlie ^[1] 342:22 underlies ^[1] 325:14 underlying ^[5] 318:11,17 322:11 334:23 500:21 undermine ^[1] 309:5 underneath ^[1] 438:22 understand ^[28] 296:3 299:24 305:6,9,13 316:18 364:9 365:2 368:22 374:18 383:21 387:1,2 402:20 405:14,25 424:6 438:12 443:3 445:11,15,15 446:6 449:8 453:12 463:3 500:20 509:16 understanding ^[9] 296:10 330:25 363:25 398:11 445:17 466:14,24 469:10,11 understood ^[2] 366:13 379:7 undertaken ^[1] 321:3 undertaking ^[1] 357:14 unfortunately ^[1] 450:22 uniform ^[4] 447:23 448:12,13 515: 20 uninformative ^[1] 305:15 united ^[3] 263:1 264:3 417:5 units ^[3] 318:2,11,18 universal ^[5] 264:6 302:2 422:13 426:7 440:15 universe ^[1] 435:4 unless ^[3] 448:12 451:23 452:3 unnecessary ^[1] 367:19 unpack ^[1] 308:11 unravel ^[2] 445:14,16 unregulated ^[1] 443:14 untangle ^[4] 445:9 446:4,14 447: 13 untangling ^[2] 446:20 447:4 until ^[2] 416:18 453:12 up ^[67] 294:20 296:17 298:9 299:4 301:11 305:2,11,11,22 306:22 307:23,24 312:1 330:18,21 332: 23 333:24 334:16 335:11,18,22 337:24 346:7 357:9 361:2,3,16 373:22 374:13 375:8 376:13 379: 24 382:12 385:14,17 386:20 390: 21 398:21 402:23 407:7 409:10 411:25 418:10 419:16 425:21 429: 21 430:14 432:15 433:4,5 439:11 442:20 445:20 447:25 448:1,3 462:16 467:23 505:4 506:6,8,16 507:21 509:2 512:21 514:1,16 updated ^[1] 502:4</p>	<p>upper ^[4] 426:2 435:18,25 438:5 upstream ^[19] 326:6,8,11 327:1,4 368:19 369:5,10 423:16,19 424:1, 3,4 437:6,9,16 499:13,14,23 upward ^[1] 404:9 usage ^[3] 318:25 406:9 413:25 useful ^[4] 375:13,21 434:25 447: 13 user ^[1] 499:7 user's ^[3] 499:9,18 500:10 users ^[3] 452:16,25 499:4 uses ^[6] 320:2 358:12 367:21 390: 19 422:20 507:3 using ^[29] 319:3,15 323:19,25 337: 25 342:11 356:25 358:1 374:14 375:4 386:3 399:21 402:16 403: 20 413:3 415:19,23,24 422:7 441: 1 507:12 509:11 510:10,14 512:2 513:1 515:8 516:16 517:15 usual ^[1] 399:9 utilized ^[1] 394:19 utilizing ^[1] 400:25</p> <hr/> <p style="text-align: center;">V</p> <p>validity ^[3] 304:23 332:4,5 valuable ^[2] 369:7 399:8 value ^[18] 304:12 398:19,21,24 399:6,10,15,23 400:10 402:16 414:2 448:6,17,18,20,22 449:10, 11 values ^[1] 448:23 variable ^[3] 406:14,14 415:10 variables ^[6] 407:7 408:4 410:20 413:7,24 414:15 variance ^[1] 362:16 variation ^[1] 426:10 variations ^[1] 427:9 variety ^[1] 511:7 various ^[14] 304:15,15 311:20 356: 7 357:20 369:20 409:17 427:25 428:23 433:8 440:4 445:3 513:15 514:20 vary ^[3] 376:11 505:10,16 varying ^[2] 402:2 505:18 verify ^[2] 465:24 466:2 version ^[3] 414:7,7,14 versus ^[6] 330:13 332:17 333:8 343:19 376:12 499:6 via ^[1] 368:16 video ^[1] 409:23 view ^[15] 299:17,25 306:12 355:16 362:6 372:19 375:12 380:8 389: 14 402:2 418:17 424:14 432:12 433:15 465:21 viewed ^[1] 516:8 viewing ^[2] 378:1 452:6 views ^[2] 332:10 335:24 violating ^[1] 346:5 visible ^[1] 409:2 volume ^[8] 263:24 464:8,14,19 465:6,10,11,13</p>	<p>vying ^[1] 369:5</p> <hr/> <p style="text-align: center;">W</p> <p>wait ^[6] 268:15 346:20 449:7 461: 23 462:15 518:3 walk ^[8] 322:18 356:17 362:22 369: 19 431:1 435:15 466:17 467:16 walking ^[1] 371:6 wanted ^[2] 296:25 344:10 wants ^[4] 345:16 366:6 434:17 517:24 warner ^[64] 264:6 301:17 302:3,7, 8,13 303:7,13 304:7 312:9 326:1, 12,15,16,20,20,23 327:3 421:23 422:7 423:5,6,14,16,17,22 425:6, 16 426:8,21,23,25,25 427:21 428: 5,8 429:24 430:12,12,23 431:11, 13,15 432:16 433:1 434:17 435:2, 11,16,18,22,24,25 436:8,14 437:7, 23 438:6,6 439:2,8,14 440:12 463: 19 warner's ^[7] 326:2 423:10 431:17 432:9,12 439:4,5 warning ^[1] 431:4 warranted ^[2] 403:21 404:10 warren ^[1] 264:15 washington ^[3] 263:21 264:18 265:24 way ^[56] 294:24 295:7 303:12,17 313:3 322:14 325:9 326:15 328: 14 329:14 335:9 339:19 343:4 344:23 361:19,24 362:5 364:13 368:14 371:18 374:16 378:9 384: 10 386:6 392:1 401:21,22 404:11, 23,23 407:19 410:15,20 427:20 428:12 432:22 433:12,23 441:3 447:4,22 449:19 451:13,25 452:6 453:14 457:22 459:3,5,21 461:15, 18 463:25 501:5 512:6,12 ways ^[8] 304:15 333:23 368:23 382:17 418:14 425:11 455:12 459: 22 web ^[90] 303:17 311:7,16,19 312:1, 2,4 313:2 314:7 316:6 324:15 329: 21 335:10 338:13,15,19 339:7 340:7,23 341:13,19 342:22 343: 22 344:3 345:12,24 355:6 357:7 358:3 359:5,17 360:1 361:22,24 362:6 365:14,23 368:9 369:17 370:9 371:3 377:25 380:22 381: 15 382:21 383:13,21 384:12 387: 18 391:12 394:16,18 395:12 430: 14 450:6,9 454:6 455:14,20 456: 16 457:25 458:2,21 459:19 460: 12 464:17 498:3,14 499:3,5 500: 17,21 503:5,25 504:12,14 507:2, 12 508:17 509:8 510:5,8,13 512:4, 13,19 513:6 514:9 515:10 516:14 webcaster ^[8] 323:25 324:22 325: 24 326:25 327:22 330:14 332:18 339:17</p>	<p>webcasters ^[10] 312:2 314:19 322:15 323:1,15,21 334:23 335:5 358:11 504:19 webcasting ^[5] 311:23 333:9 358: 11 370:10 504:7 weight ^[4] 300:25 341:16 414:9 447:1 weighted ^[4] 309:20 333:18 334:2 514:6 weil ^[1] 265:7 welcome ^[1] 450:25 whatever ^[10] 321:1 360:22 386: 19 391:4 414:13 431:24 439:10 457:15 462:23 467:5 wheeler-frothingham ^[1] 265:15 whereas ^[2] 316:13,24 whereupon ^[6] 268:16 346:21 393:6 395:20 470:1 518:8 whether ^[34] 307:12 320:23 322: 12,13 329:21 332:23 335:7,8 336: 4 341:21 342:19 345:9 364:19,19 365:3 367:10,10 370:14 374:22 386:21,23 389:18,19 395:1 414:6 430:15 434:17 438:3 447:15 449: 1 450:14 459:11 511:3 517:6 whichever ^[3] 302:20 333:2 335:8 white ^[6] 294:9,19 298:15,16 299: 14 449:19 who's ^[1] 300:23 whole ^[10] 335:3 368:9 369:14 383: 15 414:3 435:25 438:20 441:11 443:25 505:7 wholly ^[1] 392:8 wide ^[1] 440:23 will ^[61] 267:15 268:4,10 306:9,11, 14 308:9 315:9 316:23 322:4 331: 2 332:3 355:19 359:18 369:7 372: 8 394:12 395:10 400:24 403:21 421:8,21,23 423:5 425:23,25 426: 5 428:17 429:25 430:1,3 431:22 432:5,6,7 434:23 435:20,21,22 436:7,8 439:1,16 440:2 443:11,23 452:7 461:8 463:24 464:7,9,13 465:18 466:13 468:1 469:3 499: 14 500:14 501:11 506:16 518:4 willig ^[28] 320:2 328:25 329:14 330:4,10 333:6,18 356:8 404:21, 24 405:15 407:16 411:5,7 413:14 414:4,25 417:22 421:2 422:17 424:2 433:4 434:16,21 437:19 438:9,13 440:18 willig's ^[24] 325:7 330:15,19 331:8, 17 332:11,19 336:15 356:18 404: 19 405:7,10,20 409:15 411:13 417:11,20 418:6 419:19 434:5 440:4,11 441:2,7 willing ^[20] 306:4,9,10 310:20 320: 21,25 362:21 363:6 401:9,15,24 402:3,7,18,22 403:1,5,7 418:25 419:2 willingness ^[11] 499:3,7,9,11,18,</p>
---	--	---	--

<p>23 500:10 501:1,2,11,14 withhold [2] 434:19 435:12 within [5] 344:20 395:2 400:21 402:7,10 without [7] 301:17 334:3 346:5 375:10 413:10 460:16 505:22 witness [80] 294:18 296:11 303:10, 18,25 310:6 312:11 316:16 317:5, 7 319:3,6,10,15,22 335:16 344:5, 18,22 345:1,4,25 346:4,10 356:1 359:25 360:9,18,24 361:6,17 362: 10,13 368:20 372:10 373:13,15 375:7 378:12 380:19,20 383:23 384:5,11,19 385:4,6,14,17,21 387: 17,25 390:4,8 394:10 395:7 400: 13,17 401:8 402:15 409:7 412:7 428:6,20 446:21 447:6 448:8,19 449:3,7,13 450:1 457:7,12,13,18 461:22 462:18 469:24 529:2 witness' [1] 362:24 wonder [1] 439:25 word [6] 341:11 356:25 367:21 372:12 451:2 465:21 words [7] 310:22 342:13 377:23 389:24 407:9,17 438:11 work [9] 301:9 314:13 323:10 360: 3 369:24 406:22 407:3,3 420:20 workable [3] 359:12 367:16 420:3 workably [6] 359:4 363:21 366:1,4, 24 367:6 worked [3] 307:18 325:1 389:11 working [1] 370:2 works [3] 318:11 320:18 425:4 world [2] 375:19 420:12 world's [1] 297:18 worse-than-monopoly [1] 359: 19 worthy [1] 409:13 wound [1] 467:23 wow [1] 416:25 wrapping [1] 379:5 writes [1] 343:19 written [74] 294:16 296:4 300:15 301:8 307:15 309:6,17 311:13 313:11 314:1 315:13 321:4,7,13 322:22 323:12 324:25 325:2,3,7 327:14 330:20 331:8 338:24 343: 17 355:11 356:5,7,21 360:4 361:7, 18 364:3 367:1,1 370:4 379:9 395: 11 405:9,20 408:2,17 411:1,13,17 412:19 417:13 418:7 419:13 420: 4,10,22 421:1,13,14 422:12 424: 16 428:17 430:4 438:19 440:11 442:12 455:20 456:16 457:24 458: 2 459:8 463:13 468:23 498:23 501:18 502:6 514:4,9 wrote [1] 371:3</p> <hr/> <p style="text-align: center;">X</p> <hr/> <p>xm [185] 265:2 268:8,13 294:25 295:25 297:20 298:16 300:13 301:</p>	<p>4,19 302:6 303:8 304:22 306:7 310:8 313:15,24 314:10,15,18 315:20 316:13,25 319:21 320:22 322:16,25 323:14 324:13,16,20 325:22,25 326:21,21 327:18,21 328:8,10,13,16,21 329:4,6,15 330: 13 331:21 332:17 333:7 334:8,14, 15 335:4,11 336:17 337:19,21 338:3 358:6,24 360:6 361:20 370: 7,12,23 371:15 372:2,21 373:19 374:5,9 376:5,9,13,21 377:2,7,9 378:5,10,22,24,25 379:19 398:14 399:1 401:14 404:6,14 406:7,12, 15,16,19 407:18 409:21 411:20 412:15,20 414:21 415:5,5,20 416: 3,20,24 418:24 420:24 421:24 422:6 423:7,15,16,21 425:7,17,21 426:4,22 427:3,25 428:9 429:4,4, 24 430:9 431:6,8,10,22 432:14,15, 24 433:10,11,13,20,24 434:18,22, 23 435:11,14,20,22 436:3,13,16 437:23 438:3,7,8 439:3,4,7,8,17 441:9 442:14 445:3 450:15,19 451:1,9 456:8 458:25 459:5 460: 25 461:3,7,12,17 464:3 466:11 467:4 469:1,4,6,17 504:15 506:10, 25 507:3,16 508:3 xm's [14] 294:7,23 298:20 306:8 329:24 398:20 400:11 404:25 406: 24 418:10 419:19 428:14 454:3 468:15</p> <hr/> <p style="text-align: center;">Y</p> <hr/> <p>year [6] 311:3 342:1,1 411:22 412: 6,7 years [6] 305:24 337:22 342:25 343:8 405:22 504:20 yellow [9] 432:9 436:9,11,15,19 437:4 439:11,21,21 yesterday [13] 315:6,12 318:2 325: 16 326:17 335:19 365:12 421:25 423:2 424:22 426:17 427:21 468: 19 yielded [1] 511:22 york [5] 264:17 265:9,9,18,18 young [1] 345:9 yourself [3] 388:18 394:14 435:10</p> <hr/> <p style="text-align: center;">Z</p> <hr/> <p>zero [12] 326:14 412:25 416:18 426:13 427:19 429:7,15 432:22 437:7 449:2,12 499:6</p>
---	---