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UNITED STATES COPYRIGHT ROYALTY JUDGES

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IN THE MATTER OF:        )
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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)              )
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OPEN SESSIONS

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BEFORE: THE HONORABLE SUZANNE BARNETT
THE HONORABLE JESSE M. FEDER
THE HONORABLE DAVID R. STRICKLER

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VOLUME II

Reported by: Karen Brynteson, RMR, CRR, FAPR

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P R O C E E D I N G S

(9:08 a.m.)

JUDGE BARNETT: Good morning. Please be seated.

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

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

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

The regulations govern that -- the filing through the electronic filing system. They also govern other things related to the filing of documents with the CRB, format, contents, file formats for documents in electronic form. You're all familiar with the fact that we have guidelines for electronic documents. Those guidelines are now regulations. So we've -- they're required. They're not just suggested.

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

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

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

(Whereupon, the trial proceeded in confidential session.)

O P E N   S E S S I O N

BY MR. RICH:

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

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

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

Q. And what did you learn from those discussions?

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

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

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

BY MR. RICH:

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

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

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

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

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

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

Q. Have you had occasion to review that testimony?

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

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

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

MR. HANDZO: Okay.

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

MR. HANDZO: That's fine.

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

MR. HANDZO: I just wanted to make sure

you're aware of that.

THE CLERK: 47 has not yet been admitted.

MR. RICH: Not yet been admitted?

JUDGE BARNETT: Right.

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

MR. HANDZO: I'll accept that offer.

JUDGE BARNETT: Exhibit 47 is now admitted.

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

MR. RICH: Thank you.

BY MR. RICH:

Q.   You were saying.

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

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

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

A.   Oh, I apologize.

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

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

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

A. Correct.

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

Do you see that?

A. Yes.

Q. Is that in your mind the essence of

steering?

A. Exactly.

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

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

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

And let me say, just to be clear, because of the other benefits he's talking about, I acknowledge -- completely accept and understand there are other benefits. In my view, the -- the question I'm asking, and I think it's the right question, is was the prospect of additional plays a significant benefit to the label?

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

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

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

Are you familiar with that assertion?

A. I am.

Q. How do you respond to that criticism?

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

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

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

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

A. Yes, I have.

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

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

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

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

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

Broken out by label. So if you look at that first column at the bottom, you can see they played 389 songs, performances per day. And that's broken out into the different -- different labels in kind of what you would expect. Universal is the most, and then Sony, among the Majors, then Warner, and independents are there as well.

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

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

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

It's not dramatic, I would think -- I would say, in terms of the -- what this channel is actually playing or how listeners would perceive it, but that's perhaps in the eye of the beholder. Here are the numbers of what would be involved.

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

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

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

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

BY MR. RICH:

Q. What information --

THE WITNESS: -- to introduce steering.

BY MR. RICH:

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

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

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

Am I correct?

A. Yes, the shadow is shadowing us.

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

Are you familiar with that criticism?

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

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

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

Q. I gather you disagree?

A. I do.

Q. Please explain why.

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

The question is what to make of that.

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

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

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

Now, it's also true if steering had nothing to do with it and this was just -- the label was simply saying, look, I'm going to avoid the SoundExchange administrative fee, so I'll sign a direct license, again the direct license rate would track the statutory rate over time.

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

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

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

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

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

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

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

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

A. Yes. Let me put it --

Q. Put it in more elegant terms, please.

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

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

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

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

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

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

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

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

Q. Thank you.

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

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

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

BY MR. RICH:

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

A. No, I think the -- I would think about this as would tend to include the 801(b) factors to the extent that the statutory rate of 11 percent or this year does so.

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

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

BY MR. RICH:

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

A. So the Web IV rate is itself the product of various market agreements for -- well, involves in part the Pandora/Merlin agreement that underlay that rate; of course, the rate for subscription webcasting and then some other market agreements, interactive services, that Professor Rubinfeld used, and the Judges then put all that together and came up with the Web IV rate. And we're now talking about the Web IV rate for subscription webcasters.

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

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

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

JUDGE STRICKLER: Thank you.

BY MR. RICH:

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

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

So I would say -- so the -- if we compare the buyers and sellers, we have the same sellers, the record companies; a different buyer here, we have satellite radio rather than web casters. We're talking subscription services either way.

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

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

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

Q. Yes.

A. Yeah.

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

A. Okay.

Q. Let's move to how you physically went about calculating the appropriate rate for Sirius XM from this benchmark. And that's covered in your written direct testimony beginning at page 51 through 55, although not all of that is devoted simply to this calculation.

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

Q. Right.

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

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

The other step is to convert that into a percentage of revenue because that's the rate structure that I'm looking at here. And that then depends on the ARPU. At an ARPU of $10.72, the $1.03, simply divided it into 10.72, is 9.6 percent of revenue. And I just note here that if you had a higher ARPU, the corresponding percentage of revenue would be smaller, as I think we talked about yesterday.

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

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

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

Q. So how do the 801(b) factors come into play with this benchmark?

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

MR. RICH: Sure.

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

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

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

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

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

THE WITNESS: Yes, I am.

JUDGE STRICKLER: How do you respond?

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

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

The second thing I'll say -- and we're going to come back to this, I think, at different times, and I'm happy to take as long as you want right now, Your Honor. But the second thing is I think about cost and -- opportunity cost, we -- all the experts agree that's the key driver of rates or a key driver. And so as I was -- as I emphasized yesterday, the quantity and the units to be measured are number of songs. Okay? That's what the record companies are selling. They're selling music, licensing, and being compensated, actually, based on how much their music is played. That's the quantity.

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

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

JUDGE BARNETT: I think earlier in your testimony, you said the thing to be measured is number of songs. Did you mean to say number of plays or usage of those songs? Because, I mean, if we're basing it solely on the size of the catalogue of each of the --

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

JUDGE BARNETT: Performances. Okay.

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

JUDGE BARNETT: Thank you.

THE WITNESS: So that's what I meant.

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

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

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

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

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

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

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

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

JUDGE STRICKLER: Thank you.

BY MR. RICH:

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

A.   Okay. So this benchmarking approach would derive for us a willing buyer/willing seller rate for Sirius XM. And then we need to consider whether modifications of that rate are called for, to the extent that the 801(b) factors differed from a willing buyer/willing seller rate. So that would need to be done in addition to whatever I do here through this benchmarking exercise.

Q. And have you undertaken that analysis?

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

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

BY MR. RICH:

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

Am I correct?

A. Yes, that's right.

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

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

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

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

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

Q. Okay.

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

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

A. So there I indicate that there are some reasons to believe Sirius XM can steer to a greater degree than -- degree than webcasters and some other reasons to believe the opposite. And I don't think it's clear either direction. And I don't make any adjustment on this basis of steering for that reason.

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

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

Q. Pardon me.

A. Oh, I'm sorry.

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

A. Yes.

Q. Thank you.

A. So I'm using the term "webcaster" to mean non-statutory as distinct from interactive services.

Q. Thank you.

A. Or Internet radio --

Q. Thank you.

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

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

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

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

A. Okay. So --

Q. I suspect there's another appendix.

A. So, as indicated on page 55 of my written direct testimony, I worked this out in some detail in Appendix D to my written direct testimony. The demonstrative here is not quite right. It's written direct testimony Appendix D, not C.

Q. Thank you, that's a typo.

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

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

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

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

So, again, we're asking if Sirius XM

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The second line is also important. SoundExchange and Professor Willig especially emphasize how costly it is for a record company if they lose revenues from interactive streaming such as Spotify because that's so lucrative for them. And so here we see that Sirius XM is substituting less for interactive streaming than Pandora.

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

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

Q. Now --

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

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

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

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

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

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

A. Yes, I did.

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

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

Q. And if you feel the need to call out any -- I know you're going to run through what's restricted and what isn't on our understanding and counsel for SoundExchange can correct us, but if you feel you need to call out any data, we will appropriately limit the discussion.

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

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

MR. HANDZO: Great, thank you.

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

JUDGE BARNETT: Yes.

BY MR. RICH:

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

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

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

is all based on the Dhar survey results.
Q. Okay. And I take it the -- your analysis of this that follows will accept, for discussion purposes, the validity of the Dhar results.
Do you generally accept the validity of those results?
A. I don't offer an opinion on the -- the different surveys experts. I have relied on Mr. Lenski for -- for this point we're making right now. And later actually when we talk about my views on Professor Willig's testimony, I'm going to just accept the Dhar survey numbers, but I'm not offering an opinion on the battle among the survey experts.
Q. For present purposes, that is, retaining the focus of this segment of the discussion on the comparative opportunity costs determined for a record company licensing Sirius XM versus a subscription webcaster, does any of the data on Table 2 of Mr. Willig's analysis drawing on the Dhar survey inform that conclusion?
A. Yes, very much so. Let me add to my previous answer, the implication is what I'm going through here holds up whether the Judges ultimately accept the Lenski or the Dhar survey results.
The -- my conclusion here, that is

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

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

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

A. Oh, thank you. Good point.

Q. Thank you.

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

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

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

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

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

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

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

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

Q. Thank you. Before we leave this --

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

BY MR. RICH:

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

A. Yes, I was.

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

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

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

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

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

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

Q. Thank you.

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

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

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

JUDGE BARNETT: Mr. Rich?
MR. RICH: Thank you.
BY MR. RICH:
Q. We were given a bit of homework by Judge Strickler at the break, or you were, Professor Shapiro. Can you turn to Table 1 in your direct testimony on page 37.
A. Okay.
Q. And have you had a chance to consult with Mr. Reitman about the issues raised, methodological issues raised by Judge Strickler?
A. Yes, I have.
Q. Are you in a position to respond?
A. I am.
Q. Please do.
A. So the short answer is the overwhelming majority of the -- what was done here in this table is based on plays, that is, how much the music is actually played on Sirius XM satellite service.
For some of the older contracts for the smaller Indies, Sirius XM did not have data still or did not have data on those plays from past years. So in that -- in those cases, we used other data that he had to come up with an estimate. In some cases, in a few cases using the market share, that

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

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

JUDGE STRICKLER: Thank you.

BY MR. RICH:

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

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

Have you reviewed that in the past?

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

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

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

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

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

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

Q. Can I --

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

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

A. Absolutely.

Q. Okay.

A. Yes.

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

A. So the second branch would be what about the interactive service agreements that Professor Rubinfeld used and the minimum per-play rates in those agreements? And we have actually -- have looked at that and that has not changed either since Web IV, those rates, that is. So just as a straight factual matter, this assertion by Mr. Orszag is not supported when one actually looks at the contracts in force for the rights in question and how things have changed over time.

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

Are you familiar with that testimony?

A. I am.

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

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

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

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

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

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

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

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

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

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

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

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

Q. As a matter of --

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

to repeat here.

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

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

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

JUDGE STRICKLER: Have you reviewed that new superseding agreement?

THE WITNESS: Yes, I have.

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

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

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

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

JUDGE STRICKLER: Sorry.

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

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

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

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

sure what might be confidential here, so --

JUDGE STRICKLER: Can we say same or different --

THE WITNESS: Yes.

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

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

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

JUDGE STRICKLER: Hang on.

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

JUDGE STRICKLER: Can we close the courtroom then?

MR. RICH: Sure.

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

(Whereupon, the trial proceeded in confidential session.)

O P E N   S E S S I O N

BY MR. RICH:

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

A. Yes.

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

Do you agree with that characterization?

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

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

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

JUDGE BARNETT: Yes, thank you.

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

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

BY MR. RICH:

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

A. Yes.

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

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

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

Do you recall using that word?

A. I do.
Q. Why -- putting aside the other methodological issues we'll go through, why do you find his rate proposal perplexing?
A. Well, the reason I said that is that he states that he's following closely the approach that the Judges adopted in Web IV, and particularly regarding the use of interactive services benchmark, and yet he ends up with a rate that's more than twice as high as that benchmark indicates.
So that's kind of perplexing or jarring to me. And that's why I said it.
Q. What body of license agreements does Mr. Orszag rely upon in undertaking his benchmarking?
A. So he looks at a group of license agreements between the three Majors, on the one hand, and nine different interactive services on the other hand, for a total of 27 agreements for the various pairings.
Q. And how many approaches to rate setting from these benchmarks does he offer for the Judges' consideration?
A. He has two approaches.
Q. Can you briefly describe those?

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

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

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

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

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

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

interactive service agreements?
A. Well, the fundamental -- a starting point of the problem is there's a -- that benchmark is not based on a workably competitive market. And we -- we spent a lot of time on this in the Web IV proceeding.
This is the sub-bullet here on slide 15. That market, where these agreements are drawn from, is a complementary oligopoly. And just to remind everybody, meaning each of the Majors is a must-have provider in that market, and that creates a situation that's very far from workable competition and rates that are at the monopoly level, if not higher.
JUDGE STRICKLER: A question for you, Professor Shapiro.
In Web IV, we adjusted for the complementary oligopoly problem, if you will, the worse-than-monopoly problem, by incorporating a steering adjustment.
If we were to incorporate a steering adjustment in this proceeding, would that eliminate the complementary oligopoly problem that you identify in Professor or Dr. Orszag's approach?
THE WITNESS: So if you follow the same

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

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

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

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

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

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

THE WITNESS: Well, if you didn't make one -- I just told you that making a 12 percent steering adjustment leads to 9.9 percent of revenue. So if you didn't do that, you'd bump that up about 12 percent and so you would end up around 11 percent of revenue, if you're following me there.

JUDGE STRICKLER: Um-hum.

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

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

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

So if you apply ratio equivalency here in exactly the same way as you did it in Web IV, then you'd get this 9.9 percent of revenue, $1.06 per sub per month. And then -- so that's where that was.

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

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

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

JUDGE STRICKLER: So why --

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

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

MR. RICH: We were -- we were proposing methodically to go through that because it is -- it is a complex area of the analysis, Your Honor. And if you're -- if you are willing to be a little patient, we're going to walk literally through the answers to that, namely, how Mr. Orszag applied his conception of ratio equivalency, this witness' critique of it against what we interpret you did, and then applying what Professor Shapiro believes to be the correct application of ratio equivalency getting you to the 9.9, not to Mr. Orszag's. It's a multi-step analysis.

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

(Laughter).

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

MR. HANDZO: I'll go for that.

MR. RICH: I'm sure.

BY MR. RICH:

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

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

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

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

Do you recall reading that?

A. I do.

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

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

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

A. Okay. So there's, I think, at least two key points here. First, which I started to get into in my last answer, we're trying to understand whether the rates from the interactive service markets reflect competition.

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

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

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

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

Q.   And why is that element of what he

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

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

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

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

Q. Do you -- did you find anywhere in

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

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

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

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

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

Did you read that assertion in his testimony?

A. Yes, I did. And I remember that.
Q. How do you react as an antitrust economist to that?
A. I think the anti-steering provisions that we're seeing really undercut or further disable price competition that might not otherwise break out anyhow, but it really further stifles it.
So I -- I see them in this context with, indeed, a whole kind of web of these anti-steering agreements as anticompetitive, and certainly did not provide any reason to think that the resulting rates reflect the forces of price competition.
JUDGE STRICKLER: Professor Shapiro, would another way of stating what you're stating here in your critique of -- of Mr. Orszag's approach be that he's looking at steering via playlists in the downstream market and mistakenly concluding that that reflects there's steering and price competition in the upstream market?
THE WITNESS: No, I don't think that's my criticism. I think -- but let me say a little more to make sure I understand your question properly.
One of the ways that record companies seek to have their -- their music played more, let's say Spotify, is to have their -- their songs

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

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

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

JUDGE STRICKLER: Okay. Thank you.

BY MR. RICH:

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

A. Yes, it does.

Q. Can you direct us to where you're going to be working from?
A. Well, let me start, just to so the Judges know the structure of this, at page 13 of my written rebuttal testimony, and I'll move us forward. So there's a section here, "Ratio Equivalency" Does Not Apply to Sirius XM and Interactive Services.
So as a starting point, what the Judges did in Web IV was apply ratio equivalency as between interactive services and webcasting, basically, two form -- this is this open question. Does it even apply to this distinct Service, which is Sirius XM?
There are some, I can say, serious issues about whether the requisite cross-elasticity of demand --
Q. Why don't -- why don't we take that threshold issue, which is --
A. Do you want to do that?
Q. I apologize for collapsing two related but distinct issues, which is you have critiqued at length the application of ratio equivalency between those two markets as -- as inappropriate here in relation to Sirius XM, and perhaps you could advise the Judges as to your opinions as to why that is the case.

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

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

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

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

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

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

Is the test of -- sufficiently high that there exists some degree of competition between Sirius XM and interactive services or is the threshold different, in your estimation?

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

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

(Laughter).

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

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

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

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

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

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

A. No.

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

THE WITNESS: That's a very good guess.

JUDGE STRICKLER: Lucky.

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

BY MR. RICH:

Q. And you discuss it in this context specifically at the bottom of page 14 over to the top of page 15.

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

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

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

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

And you're making a determination as to whether or not there's a sufficiently high cross-elasticity of demand, but cross-elasticity of demand, of course, necessarily implicates price points, changes in price as well as changes in quantity, for the -- for the two goods that are crossed to one another.

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

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

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

But if there's a reason to believe that the price-based switching pattern is quite different than the other switching pattern, then one should account for that. Here I would accept that because Mr. Lenski is asking about where would you move your listening, that could give a different answer than what would you subscribe to if Sirius XM were more expensive.

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

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

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

So -- and we all have other things we

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

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

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

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

I don't think we have -- the functional convergence that you had in Web IV, a lot of evidence about that isn't true here. So I'm viewing it more holistically, and I don't think overall, when you look at all these pieces of evidence together, that the record shows a high cross-elasticity between Sirius XM and paid interactive.

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

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

BY MR. RICH:

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

A. Change in the Sirius XM?

Q. Sirius XM, that brings them closer to the functionality of interactive services?

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

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

A. Right. So --

Q. What do you conclude?

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

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

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

A. That's right. And the --

Q. Okay. And --

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

Q. Right. What would be the implication of that for application of the interactive services benchmark in this proceeding, if the analysis -- if that observation were to carry the day?

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

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

A. I do go on.

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

(Laughter)

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

JUDGE FEDER: It's true.

THE WITNESS: So -- so I want to show, as a rebuttal witness here, that even if you use this approach, if you do it faithfully to how it was done by the Judges in Web IV, you get a very different answer than Mr. Orszag got, and this is what we previewed in response to Judge Strickler's questions, that you would get 9.9 percent of revenue rather than his roughly 24 percent of revenue, quite a big difference, which is then going to come down to how do you actually do this? When you actually take the numbers and do the steps, it's two and a half times, roughly, difference. And I think this is what the Judge was asking about earlier, how does that happen?

BY MR. RICH:

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

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

Q. Please do.

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

And that's the steps that I've replicated here. And that's what gets to the 9.9 percent. Mr. Orszag has not done that. It's just not what he did in terms of the steps of arithmetic.

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

Q. The ultimate rate proposal is public.

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

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

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

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

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

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

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

Q. So --

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

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

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

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

THE WITNESS: Yes.

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

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

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

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

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

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

THE WITNESS: 21.

JUDGE STRICKLER: Same area. Yeah.

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

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

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

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

JUDGE STRICKLER: 48 percent?

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

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

THE WITNESS: You get 24. That's what he gets. So my point is, if you want to do something like that, there's nothing inherently wrong with starting with that rate if you do the right exercise, but the question then is going to become how are you properly going to adjust for the lack of competition in that market? 12 percent is not nearly enough if you're using that arithmetic.

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

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

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

So the question is not whether -- if the result was too high, if it fails some inherent gut feeling as to whether the rate should be too high or too low, there has to be something either right or wrong about the steps. So I'm not sure I understand. Maybe it's my failing, but I don't understand why, when you start with a percentage of revenue and make the same sort of percentage adjustment for steering, and assuming there is also an adjustment for interactivity, which I didn't ask you about yet, why we should be -- why we should necessarily assume that the rate that results, 24 percent, as you just said, is inherently wrong just because it's too large?

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

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

MR. RICH: Sure.

JUDGE STRICKLER: And then be my guest.

MR. RICH: Sure.

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

JUDGE STRICKLER: That sounds right.

THE WITNESS: Okay. If you had started

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

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

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

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

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

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

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

JUDGE STRICKLER: When you're making a determination, whether as an economist or judge, as to whether or not you're going to rely on the percentage-of-revenue rate or a per-play rate, is it informing -- I'll ask you as the economist -- is it informing to you as to where the rates are essentially -- where the rates actually paid? In other words, it's a greater-of formula, say, in the proposed benchmark in the interactive area, and it's the greater-of percentage of or, say, per-play rate. Is it informative to you as to which one of those is typically triggered in the marketplace?

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

JUDGE STRICKLER: Yes.

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

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

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

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

JUDGE STRICKLER: Thank you.

BY MR. RICH:

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

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

And I would add that that was -- remember there, the reduction was in comparison with what was like the statutory rate, which was the per -- the pure play rate. And so I think the thinking would be we're not starting from a monopoly rate. The pure play rate is itself meant to be -- I mean, it's tricky because of the way it came about, but not a monopoly rate, we hope, and so we're adjusting from that and we're seeing the discounting that occurred under that rate through the force of competition.

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

A. That's correct. In fact --

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

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

And, actually, Professor Rubinfeld wasn't either.

Q. Thank you.

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

JUDGE BARNETT: I think we should

probably break. Co.

MR. RICH: Okay.

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

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

A F T E R N O O N   S E S S I O N

(1:22 p.m.)

JUDGE BARNETT: Please be seated.

Mr. Rich?

MR. RICH: Thank you.

JUDGE BARNETT: I'm sorry, before you go on, Judge Strickler?

JUDGE STRICKLER: Good afternoon, Professor.

THE WITNESS: Good afternoon.

JUDGE STRICKLER: I have a question for you, and I don't think that we will need to close the courtroom for this, but, if we do, either counsel or yourself might be able to advise us.

We were talking about the difference between the percentage-of-revenue prong in the Web IV proxies for interactive service and the per-play rate. And, as you correctly pointed out in Web IV, we utilized a per-play rate.

Do you recall what percentage-of-revenue Pandora ultimately was obligated to pay because of the per-play rates that we set?

I know that per-play rates, or percentage-of-revenue is in a general sense included in Pandora's 10-K, so I am pretty sure that that is not confidential, but whether it is broken down as to different royalties within the overall, that I don't know.

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

JUDGE STRICKLER: Absolutely.

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

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

JUDGE STRICKLER: Thank you.

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

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

(Whereupon, the trial proceeded in confidential session.)

O P E N   S E S S I O N

BY MR. RICH:

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

A. Okay.

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

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

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

And I point out here that if one is going to get into this type of allocation of value, it is very important to also include two other inputs that go into the service, Sirius XM service. One is the infrastructure that they provide as part of their service, the convenience that comes with that, the equipment and so forth, and the other would be their efforts at programming and curation, which adds to the value of the music.

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

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

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

Do you see that?

A.   Yes, that's right.

Q.   So, briefly, what is that?

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

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

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

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

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

THE WITNESS: I do.

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

THE WITNESS: Correct, the infrastructure.

JUDGE STRICKLER: Aren't those factors that the statute directs us to consider as the -- within the four enumerated factors or lettered factors A through D in 801(b)(1) relative costs and contributions or maybe even arguably fair return on investment, if you will, investment in the satellites, rather than utilizing those factors to first establish a rate against which to apply those factors?

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

JUDGE STRICKLER: Thank you. Absolutely.

MR. RICH: Thank you.

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

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

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

When you finish that exercise -- so I have a criticism here, okay. When you finish that exercise, then the way I am thinking about it, and hopefully this is the way you are thinking about it, you then have to decide what modifications to the 801 -- to the willing buyer/willing seller rates you want to make based on the four 801(b) factors, one of which is relevant contribution. Now, there is varying and so forth, so I view those as distinct.

I am just addressing willing buyer/willing seller here.

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

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

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

I don't really have -- I don't really know. It seems to me you could decide potentially we have already accounted for it, willing buyer/willing seller, no problem, we don't need to do anything else. That I don't think is what was done last time, SAT II, or you could decide there is some other modifications needed to go beyond willing buyer/willing seller.

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

JUDGE STRICKLER: Thank you.

BY MR. RICH:

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

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

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

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

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

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

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

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

When you use them consistently in exactly the way, otherwise identical to the way Professor Willig did, the results are reversed. We find that Sirius XM's elasticity of demand is higher. And so if there would be any adjustment, it would be downward.

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

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

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

A. Yes.

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

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

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

Q. And what do you understand him to mean or

define by streaming?
A. So in -- he defines streaming to include basically what we -- what I think we have all been calling streaming, which would be interactive services, non-interactive services.
And then, somewhat confusingly from my perspective, he lumps Sirius XM in with that in calling it streaming.
That I don't think is the normal usage, so -- but that is his, so there you go.
Q. Does his regression demonstrate the impact of Sirius XM alone on download sales?
A. No. What his regression does is look at this aggregate variable or lumped-together variable of the growth of streaming and Sirius XM together, not looking at the impact of Sirius XM alone, again, on download sales.
Q. Is there reason to believe that the impact of Sirius XM alone is consistent with the impact of streaming in the aggregate as he identifies it?
A. Well, based on my work, we know that that is not the case, and the impact is quite different, that is, Sirius XM's impact on downloads is very different than the impact of streaming, that is,

interactive and non-interactive services.

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

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

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

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

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

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

unable to do that?
A. Yes. In his written direct testimony, he explained -- he gave two reasons for why he lumped the variables together. One was he asserted that the three different types of services are -- move -- again, we're measuring their listening, listening on the services, that those listening measures move very closely together over time, and so, therefore, in econometric terms, are highly multicollinear.
Q. And did you examine that contention on his part?
A. Just to be clear, he did have a second reason, but we're --
Q. Let's focus on this first.
A. Okay. So I --
Q. With reference in this case to page 29 of your written rebuttal testimony in Figure 1.
A. Thank you. This is restricted or not, but I am not sure. But it may be restricted.
Q. Yes on the restricted. Do not publicly show the chart, please.
A. But I want to make sure --
Q. Thank you.
A. I want to refer to the chart.
Q. Yes.

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

JUDGE STRICKLER: Not on the screen.

JUDGE BARNETT: Not yet.

JUDGE STRICKLER: We have the testimony.

THE WITNESS: We just have to get there.

BY MR. RICH:

Q. Page 29, Figure 1.

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

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

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

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

So first I would just point out these

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

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

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

Q. And did you further test this empirically?

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

These are -- hold on one moment. This is all in Appendix B to my written rebuttal testimony, which I don't propose we go there, but that's where it is.

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

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

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

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

Q. Shall we pull up the Shapiro revision of

Table 1 for the Judges? Would that be helpful?
A. It is a great table but I think we're trying to move things along, so I tend to think not.
Q. Okay. Go ahead.
JUDGE STRICKLER: Was that 813 million dollars per year or for the cumulative period?
THE WITNESS: Per year. What he has done takes a little while. He has looked at the growth in streaming over a five-year period, or from 2010 to 2016, and then what's the impact on an annual basis of that is what he is trying to measure.
BY MR. RICH:
Q. And when you were able to overcome the so-called multicollinearity problem and isolate out the correlation between performances on Sirius XM and impact on download sales, what were you able to conclude?
A. So this is reported on page 30 of my written rebuttal testimony. And I found that the impact of Sirius XM on downloads was strongly promotional. The impact of interactive plays on the downloads was negative, that is, substitutional.
And the impact of non-interactive services was very slightly promotional, but not statistically different from zero.

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

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

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

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

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

A. Yes. Thank you.

So this is explained in more detail in Appendix B. Basically there are some -- as an econometric matter, the fact that these independent variables may have some relation -- the different services and the usage of them may be related due to substitutional effects does not take away from the value of separating them out.

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

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

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

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

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

Q. Now, is it accurate that Professor Willig

ran a second regression analysis?
A. Yes, that's correct.
Q. What was that attempting to demonstrate?
A. Well, there he did try to isolate out Sirius XM and the impact of Sirius XM in particular on listening on interactive and non-interactive services.
Q. As opposed to impact on download sales?
A. Exactly. So he is looking at a different variable that is being impacted, what we would call streaming, actually, interactive and non-interactive services.
Q. And did you examine this regression analysis?
A. Yeah, so he again -- well, I should say the first regression analysis, in the end, he doesn't use it for his rates. Okay? It is more background.
This one I examined, he is using this as part of his claim that licensing music to Sirius XM has an opportunity cost by substituting for interactive services in particular. So that's how he is using this.
So this second one he is using as part of his key element of his analysis, which is

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

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

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

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

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

On the other hand, Sirius XM, the growth is really occurring -- well, through around 2009, and then there is continuing growth but it is flatter. So if you are trying to explain the effect of Sirius XM listening on the interactive, the first thing you look at and say: Wow, what happened with interactive, starting in 2011, it really took off?

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

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

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

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

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

Q. Appendix B?

A. -- Appendix B.

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

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

A. Yes.

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

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

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

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

Q. What is that major fundamental conceptual error?

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

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

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

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

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

A. Sorry.

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

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

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

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

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

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

Q. What number is that?

A. 17.

Q. 17. Okay.

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

And then I go into considerably more

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

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

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

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

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

And yesterday we spent some time talking about the quantity measure or output as performances, we clarified the definition of that with the Chief Judge earlier today, and so that's what I mean, a single record company's opportunity cost of having its music played more on a service, and we're going to focus on Sirius XM.

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

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

Q. Okay.

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

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

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

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

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

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

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

So it is very important to talk about the upstream and downstream substitution patterns. Professor Willig has completely left out the upstream, and that's the main event.

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

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

Q. How does slide 19 advance this conception?

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

Q. Okay.

A. -- yesterday and we have covered that.

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

A. I think we're going to have four

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

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

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

Q. And what does your baseline tell us?

A. So in order to talk about --

Q. Slide 20.

A. Slide 20. Thank you.

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

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

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

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

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

A. That's correct.

Q. Please explain.

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

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

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

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

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

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

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

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

And this, of course, is one of the reasons why various labels are contacting Sirius XM programmers to get their plays increased. There is no opportunity cost to them when that happens.

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

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

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

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

JUDGE FEDER: Please.

THE WITNESS: Okay.

BY MR. RICH:

Q. But under this first pure steering scenario, one question: Do the various surveys that the Judges are going to be immersed in, in not too many days from now, getting at substitution patterns, do they come into play at all under this scenario?

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

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

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

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

A. So before we even show that slide, let me tell you there are two things that naturally come up if you think about this case. One you might ask -- well, like you asked, Judge Feder, which is, well, if Warner is offering a lower price, maybe Sirius XM will offer a lower price, too, because their costs have gone down and maybe they will get more subs. So we start to have some downstream action, if you will, substitution.

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

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

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

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

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

Q. Walk us through that scenario.
A. Okay. So that is slide 22. So this could be a little mind-bending here so I am giving you a little warning.

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

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

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

Well, if you think through the logic, Sirius XM lost some subs. Some of them will go to interactive services. That's where the survey evidence comes in. Whatever the number is, that's depicted here in that the rectangle on the lower right-hand side is a little taller than the one on the left, and that dark black line there, the little slice at the top of the rectangle shows how many more interactive subs there are there.

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

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

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

Since it is a boost, that's a negative opportunity cost. Okay? So this tells us that, first off, the peer steering craze is not some sort of extreme way off of the edge with zero opportunity cost. If we have this effect where subscribers leave Sirius XM because the play share mix has changed, we get a negative opportunity cost and, therefore, it is even more attractive for Warner to make this type of offer. Okay?

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

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

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

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

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

By the way, I should say when people leave Sirius XM, I am just showing interactive services. We know, have every reason to believe, most of the listening would go to terrestrial radio, and that doesn't generate any revenue.

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

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

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

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

Both -- I have been talking about -- well, Professor Willig often talks about if Sirius XM -- if the record companies deny their music to Sirius XM, how much more money they will make elsewhere. I think for the purposes of this illustration, it is useful to run this in the other direction, which is suppose you start with a situation where Warner is not licensing and they choose to do so. Okay?

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

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

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

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

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

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

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

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

A. That's right.

Q. Measuring that?

A. That's right.

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

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

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

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

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

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

does this depict?

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

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

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

A. He --

Q. Your interpretation of it.

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

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

Professor Farrell will talk more about this.

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

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

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

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

Now, I haven't put numbers on that yet so you might wonder what that means. Professor Farrell shows -- has some equations and general theory. He will talk about what a big difference that is.

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

And let me just quote the right number.

Q. Where are you reading from, please?

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

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

And Professor Farrell goes further by

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

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

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

Q. Thank you.

MR. RICH: That concludes my direct examination.

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

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

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

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

JUDGE BARNETT: Yes, please.

CROSS-EXAMINATION

BY MR. HANDZO:

Q. Good afternoon, Professor Shapiro.

A. Good afternoon, Mr. Handzo.

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

A. You have been listening for a while.

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

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

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

A. I do.

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

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

Q. Okay. And you have heard or you are aware that Professor Lys opines that the statutory rate essentially drives the direct license rates down, right?

A. Okay.

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

A. Yes.

Q. Okay. But you both agree, don't you, that the existence of the statutory rate has an impact on the direct license rates, right?

A. I think so.

Q. Okay. So, for example, the statutory rate is a ceiling on what a service will pay, isn't it?

A. Yes, it is.

Q. And even if in an unregulated market there would have been agreements at rates above the statutory rate, you won't see them where there is a statutory rate, correct?

A. I think that's correct.

Q. Conversely, where there is a statutory rate, direct licenses, if they exist, are always going to be at lower rates, right?

A. They can't be above, that's correct.

Q. Okay. So they will always be lower if they are there?

A. Well, I assume this whole discussion is setting aside non-statutory benefits, for example.

Q. Okay. Let's go with that. You would agree in that circumstance that the direct license rates are always going to be lower than the statutory rates, correct?

A. So if a -- if a label is agreeing to license -- excuse me. If a service is agreeing -- would not agree to the same rights at a higher rate, so if we see a license for the same rights with nothing else changing, it could only be at or below the statutory rate.

Q. Okay. So that's something that you have to take into account when you are considering direct licenses that are negotiated in a statutory setting, right?

A. Yes.

Q. Now, the interactive services are not as influenced by statutory rates. Would you agree?

A. I would. I do.

Q. And so in that sense the interactive services are a better benchmark than direct licenses, aren't they?

A. Simply looking at that factor, the impact or shadow of the statutory rate, I would agree with that point.

Q. And you also, I think, agreed earlier today that with respect to the direct licenses between Sirius XM and various Indies, if they were not motivated by steering, they are not informative for the purposes of this case, correct?

A. That's what I said. That's correct.

Q. And if Indies entered into direct licenses for a mix of reasons, we would need to somehow untangle how much of those reasons involve steering and how much involve other things in order to understand their relevance, wouldn't we?

A. No.

Q. Okay. Wouldn't you agree that to the extent that we can unravel them, we need to understand -- need to do that to understand them?

A. Well, the more you can unravel, I guess, you would have a greater understanding, but that may or may not be important for the rate-setting exercise.

Q. Let me ask you -- can we bring up the SDARS deposition, pages 120 and 121 -- let me ask you, Professor Shapiro, you have your deposition in this case on the screen. And you see starting at line 17, I asked you:

"Question: If Indies entered into direct licenses for a mix of reasons, part of which is steering and part of which is some non-statutory benefit, do we need -- in your opinion, do we need to somehow untangle how much was steering and how much is non-statutory benefits in order to understand the relevance of that agreement to this analysis?"

And your answer was "yes." And then following that: To the extent that we can, it's relevant. Do you see that?

A. I do.

Q. Okay. Do you still agree with that?

A. Yes, it is relevant. We don't need to -- what was the question exactly -- untangle the magnitudes, I thought you asked about earlier, in order to, to use these agreements, but it is certainly relevant, good to know, if you can figure it out.

JUDGE STRICKLER: How would it be relevant? How would the untangling be relevant?

THE WITNESS: Right. So for the exactly same sliding scale type of reasons we talked about earlier, if you thought that the other benefits of the statutory license is not steering explain the lion's share of the discount for most of the labels who entered into them, then you put much less weight on these direct licenses.

JUDGE STRICKLER: And why don't you need to do the untangling to find out which way the lion's share goes?

THE WITNESS: So what I testified to is if we -- if you conclude that the steering was a significant benefit for a significant number of these -- of the Indies, then that's informative regarding the competitive rate, and that's how I have used them.

There is going to be a range then in the sense -- it would be useful, if you could untangle and quantify the differences, you would know then whether you are at 9.87 percent, my calculation, or maybe it should be 10.2 percent, if you could quantify more of the benefits that were associated with non-statutory benefits.

I took out the part I could quantify, which were the SoundExchange administrative fees. If you could quantify more of these other benefits in the same way, it would be reasonable, and that was pretty uniform or general across the license, it would be -- make sense to adjust for that, too, and that would pull things up.

I did an adjustment that pulled up from 9.42 percent to 9.87. If you took out more of these items, you could get that 9.87 drifting up a bit further. It would be relevant.

JUDGE STRICKLER: But you need evidence as to the value of those overrides in order to do the calculation?

THE WITNESS: Yes, that's the problem. You see, in order to quantify it, you need evidence. And then you would also have the issue about, if you could quantify it for one Indie, does it really apply to others, unless it is something uniform. The administrative fee is uniform.

JUDGE STRICKLER: So you felt there was sufficient ability or sufficient evidence to show how to quantify the administrative fee and also the value of steering, but none of the other elements of value?

THE WITNESS: Well, definitely administrative fee. I cannot quantify the value of steering. I am attributing -- I'm saying there is a value of steering but I can't quantify it as a share of the values that -- of the benefits that an independent label is getting.

JUDGE STRICKLER: If you can't quantify

it, does that mean you can't say whether it is or is not zero?

THE WITNESS: No, it is a different statement.

JUDGE STRICKLER: I know. That's why I am asking a different question.

THE WITNESS: Oh, wait. Maybe I didn't understand. So --

JUDGE STRICKLER: You said you can't quantify the value of steering. If you can't quantify the value of steering, how do you know it is not zero?

THE WITNESS: Well, take Mr. Barros' testimony, for example, from Concord, the evidence we have. He is acknowledging that was -- I don't know exactly what his language was -- a benefit. And so I am looking at that evidence. I am looking at the other evidence that is more qualitative from Mr. White, for example. And I don't have a way to quantify it, but I still think that evidence is relevant.

JUDGE STRICKLER: So you think qualitative evidence is an arrow pointing in a particular direction, but quantification, there is just no evidence to support quantification?

THE WITNESS: I don't have quantitative evidence that I could use for further adjustment.

JUDGE STRICKLER: Thank you.

BY MR. HANDZO:

Q. Now, with respect to steering as a motive for direct licenses, in Web IV, you had empirical evidence of steering by Pandora, did you not?

A. Yes, we did.

Q. Okay. And you also in Web IV had measurable evidence of steering by iHeart, right?

A. I am trying to remember. Yes, that's correct.

Q. Okay. But in this case you have not looked at any empirical data to measure whether and to what degree Sirius XM is steering in favor of direct license labels; is that right?

A. That is true.

Q. Now, in your opinion, Professor Shapiro, Sirius XM has the technical ability to steer, right?

A. I think I said that and you seem to emphasize it in your opening statement.

Q. Unfortunately my opening statement isn't evidence, so.

A. Well, I wasn't relying on it.

Q. Okay. I mean, you are welcome to.

A. I do believe that Sirius XM has the -- what was the word -- the technical ability to steer.

Q. And, in fact, it has always had that ability to steer, hasn't it?

A. I don't see why not. I haven't gone back in time. I don't see why that wouldn't be true, but I don't know for a fact.

Q. Okay. But there is no recent technological change that has made Sirius XM able to steer now when it wasn't able before, right?

A. No, I don't think so. I mean, this is human programmers, you know, deciding mix of music. What you need is the programmers have to have a way of knowing which label is associated with which piece of music so they could implement steering.

That's not a technical thing. It might be easier now than it used to be, but that's not a -- that's not a major technical issue.

Q. So for a service to engage in steering, it needs to have the economic incentive as well as the technical ability, correct?

A. I wouldn't expect a service to do so unless it had the economic incentive and was profitable to do so.

Q. Okay. I think that's another way of

saying what I just said, but let me make sure.

If a service has the technical ability to steer, it is still not going to do it unless it also has the economic incentive, right?

A. I would accept that as a good -- as a reasonable way of viewing things.

Q. Okay. And one of the things that will affect a service's incentive to steer is the cost of doing so. Isn't that right?

A. Yes.

Q. And by steering towards lower priced sound recordings, a service might depart from what would otherwise be the optimal mix of music for it, correct?

A. Yes.

Q. And if users of the service respond to that change in the mix of sound recordings by decreasing use of the service or ceasing use entirely, that can be a cost to the service. Would you agree?

A. I would.

Q. So when a service considers steering, it has to think about what steering might cost it in terms of lost revenue from potentially dissatisfied users; is that right?

A. That's fair.
Q. And the higher the cost of steering, in terms of lost revenue, the less incentive the service has to steer. Do you agree?
A. Other things equal, yes.
Q. And the less the incentive to steer, because of the cost of doing so, that would translate into greater bargaining power for the record label; is that right?
A. I guess it is going to depend on the exact context. I am not going to disagree, but let me give a qualified yes until I understand more what the bargaining context is.
Q. Well, to put it another way, the incentive of a service to engage in steering relates directly to the elasticity of demand for the buyer, right?
A. The service, you mean, as being the buyer there?
Q. Yes, sorry, that's right.
A. That is true, yes.
Q. Okay. And so if steering is costly for a service in terms of the consumer revenues that it might lose, that results in a lower elasticity of demand for the sound recording input; is that

correct?

A. That's fair, yes.

Q. Now, Sirius XM's costs of steering may be different from Pandora's, would you agree?

A. Yes.

Q. And Pandora was in Web IV and is still mostly an ad-supported service, right?

A. Yes.

Q. And the steering incentives may be different for an ad-supported service compared to a subscription service, correct?

A. That is possible.

Q. So if steering causes an ad-supported service to lose listener hours, that could result in some lost advertising revenue, for example; is that right?

A. Yes.

Q. But if steering causes a subscription service to lose subscribers, that could be a more significant revenue hit, couldn't it?

A. Well, this all depends on the specifics. There would be no revenue hit, for example, to Pandora's ad-supported -- excuse me, subscription service, if steering caused them to lose listener hours, and they would actually save money, at least under a per-play rate, at least they used to be, while that is different, it is more of a problem on the ad side because they lose ad revenue, and then you could imagine kind of if you get to the point for some -- for an individual subscriber where they stopped subscribing, that is a bigger deal than one listening hour, but that is more of a monthly thing, so it really depends on the particulars.

Q. Okay. But we can agree, can't we, that the financial repercussions for an ad-supported service and a subscription service are going to operate in different ways?

A. I agree with that.

Q. Now, in Web IV, you considered Pandora's use of its algorithms as important to its ability and incentive to steer, didn't you?

A. Yes. This is how they implemented the steering experiment, for example.

Q. Okay. And I am going to ask you to look at your written direct testimony in Web IV, which I believe you should have there and it is Exhibit 669, I believe.

A. Okay.

Q. Do you have that with you?

A. I do.

Q. Okay.
MR. HANDZO: And since I am going to ask Professor Shapiro some questions about his testimony there, I guess I might as well move it into evidence. I believe it is not objected to.
MR. RICH: No objection.
JUDGE BARNETT: 669 is admitted.
(Sirius XM Exhibit Number 669 was marked and received into evidence.)
BY MR. HANDZO:
Q. Can you turn to page 16 of that exhibit, Professor Shapiro?
A. Can you say that again, please?
Q. Sure. Actually, before I go there, I guess I should just confirm, do you recognize this as your written direct testimony from the Web IV case?
A. I have lost it now, I'm sorry. Tell me the exhibit number again?
Q. It is 669.
A. There is nothing here under the tab for 669.
Q. We may have camouflaged it as Exhibit 304.
A. I am looking.

Q. I think it is the next one after the one you were just looking at.
A. I'm sorry. I'm sorry. I just don't see it here.
JUDGE FEDER: It is the fifth tab in mine.
THE WITNESS: After that comes 301, 2, 3, and then some other stuff. So --
MR. HANDZO: We have no shortage of copies.
JUDGE STRICKLER: Before you go to the witness, the clerk might need to talk to you about what you are giving the witness.
JUDGE BARNETT: She is going to need to mark whatever --
THE CLERK: 669?
JUDGE BARNETT: 669.
THE WITNESS: I think everybody's binder has it except mine.
BY MR. HANDZO:
Q. We just assumed you would remember.
A. We could do it that way. I think he would rather not.
Thank you. Okay. I now have my written direct testimony from Web IV on behalf of Pandora.

Q. Okay. And just for the record, that is your written direct testimony from Web IV, right?

A. Yes, it is.

Q. Okay. So if you would turn to page 16, please. And do you see sort of in the middle of the page there is -- you say "Pandora's flexibility is directly related to its use of an optimizing algorithm to select playlists. The key point is that Pandora can selectively increase and decrease performances of recorded music in a manner that is highly attuned to the preferences of listeners. This may involve little or no steering for listeners who are picky about their music or on stations seeded with particular artists, along with a great deal of steering for listeners who are relatively indifferent to the music they hear, or on stations seeded by particular artists."

Do you see that?

A. I do.

Q. Okay. And that was something you considered important for Pandora in Web IV, wasn't it?

A. I think that it was -- contributed to their steering ability, yes.

Q. Okay. Now, Sirius XM does not have the

flexibility that Pandora had, does it?
A. They can't individualize things like that in that way, that's correct.
Q. And they can't -- "they" being Sirius XM -- can't monitor the effects of steering the way Pandora could, right?
A. That's correct. This is a point I make explicitly on page 57 of my written direct testimony.
Q. Okay. So Pandora through its use of its algorithms was able to monitor whether steering was causing any dissatisfaction in costing it revenue?
A. Well, that's what we did in the experiment by monitoring the effect on listening hours. I don't know how Pandora monitored the effects of steering after that point because I have not -- well, I just don't know.
Q. Okay. So you used that algorithm as part of your experiment with Pandora in Web IV to see what the impact of steering was, right?
A. Yes. The way the experiment was run was the algorithm was modified to steer in certain ways, and that was for the individuals who were the subject of the experiment, and then there were control groups for which no such steering was done.

Q. Okay. And that experiment was done to see what the impact of different levels of steering would be on customer satisfaction and use, right?
A. Well, we were only able to measure impact on listening hours, not other measures of customer satisfaction.
Q. Okay. But you were able to measure the impact on listening hours, right?
A. Yes.
Q. And you thought that experiment was very important to determining a competitive rate in the Web IV case, didn't you?
A. I thought that it was important to demonstrate -- it was certainly helpful, relevant to demonstrate that Pandora could steer certain amounts we were able to study without any meaningful adverse effect on listening hours.
Q. So you were able to assess what costs Pandora might incur as a result of steering through this experiment, right?
A. That was the point and we were able to assess that to some degree, yes.
Q. Okay. And in this case, there are no experiments or no experiments have been done to test the responsiveness of Sirius XM subscribers to

steering, right?
A. That's correct. It is not possible to do this type of experiment for Sirius XM because they don't have individualized streams, they can't change the service for some consumers and not others, so we couldn't do a controlled experiment in this case.
Q. So Sirius XM does not have any experiments that will tell it how many subscribers it might lose if it steers away from what its programmers regard as the optimal mix of music, would you agree?
A. Sirius XM has not run such experiments to the best of my knowledge. And I should say, again, experiments, you can't do a controlled experiment in the same way.
There are other things they could try to do. This is not something I believe that Sirius XM has explored to measure these impacts in the way we're talking about.
JUDGE STRICKLER: What could they have done?
THE WITNESS: Well, one thing you could do is change the mix of your music, wait a while, see if -- what has happened to, say, subscribership. The problem with that is it is not a controlled

experiment.

If the subscribers go down, let's say, a small amount over a period of a few months, it would be very hard to know was that because of this or some other thing that happened.

And so I haven't thought of anything else they could try to do, and obviously that would be a significant thing for the company, as opposed to the Pandora experiment, which is, you know, very confined in terms of samples -- in terms of what was done. And it wouldn't be nearly as informative. But you could do something along those lines.

JUDGE STRICKLER: Could you combine what you just said together with a survey so that you change the mix of music, you wait, see if there is a change in subscribers, and then follow up with a survey to see why the subscriber level decreased?

THE WITNESS: Yes, you could certainly -- I mean, normally Pandora like other, any other company, when they lose a subscriber they often want to find out why and they do surveys, these sort of things.

So you could certainly combine whatever data you would have on actual ads and drops with some survey information.

You know, I think it would be very hard just from -- I am not a survey expert, but from what surveys I read and understand -- to even tease out if somebody -- did you even notice there was a change in the music, if it is a small amount, did it have anything to do with you, when did you drop?

Those would seem to be pretty hard things to get at in a survey, but maybe with a large enough sample. There is issues there.

JUDGE STRICKLER: Thank you.

BY MR. HANDZO:

Q. Professor Shapiro, let me ask you to turn to your written direct testimony in this case, and at page 39, which I think is where Rich asked you about earlier today.

A. Okay.

Q. And on page 39 near the top you talk about looking at the Hits 1 channel and thinking about what would happen if you switched Warner music, I think?

A. Yes, that's correct.

Q. Okay. But to be clear, that's not an experiment. That's just a thought experiment, if you will? It is illustrative, right?

A. Illustrative I think is a good way to put it, yes.

Q. And in this illustration you were just looking at one channel, not across Sirius XM?

A. That's true.

Q. Okay. Now, thinking about the steering incentives from the seller's side, from the record label's side, the seller will be incented to offer a discount if it thinks that the volume increase it gets as a result will more than offset the discounted rate, right?

A. That's correct.

Q. Is it fair to say that the more confident the seller is that it will get the anticipated increase in volume, the more likely it is to offer the discount?

A. That sounds fair, other things equal.

Q. Now, in Web IV, there was a direct contractual agreement between Merlin and Pandora that linked the increase in volume to the decrease in rate. Isn't that true?

A. There was a commitment by Pandora to steer to a minimum degree toward Merlin music.

Q. Right. So if Pandora didn't steer to that degree, it didn't get the lower rates, right?

A. There was a provision that handled that, but basically Pandora would not save as much money if they didn't steer the required amount, as I recall.

Q. Right. So to make a long story short, Merlin was assured by its contract of getting an increase in volume for a decrease in rate, right?

A. That's true. That is correct.

Q. So Merlin and Pandora in their contract negotiated not only the price, they negotiated volume as well?

A. It was a minimum share of volume commitment, and then that's as indicated, yes.

Q. Right. And so those price and volume commitments were then embodied in the contract?

A. That's what I recall.

Q. Okay. Now, it is true, isn't it, that in order for steering-induced competition to take hold, the prospect that a service will steer needs to be real, right?

A. Yes, it has to be -- maybe credible would be a good word I might use, from the point of view of the label.

Q. Right. So some amount of actual steering that a label can see and verify really needs to happen in order for that kind of competition to take off, doesn't it?

A. Well, see and verify sound more like after you have signed a contract. I guess I would say the prospect of steering could very well convince a label to agree to a discount and then over time it would be reasonable to, a respective label to check and be convinced that they were getting some increased plays in exchange for the discount. Otherwise they might not be inclined to offer it at a renewal date.

Q. Now, in this case Sirius XM doesn't actually make any promise that signing a direct license will result in more plays. Is that your understanding?

A. It is.

Q. You mentioned measuring the impact of administrative costs. I just want to walk through that briefly, if I can.

A. Okay.

Q. With respect to the reasons why Indies sign direct licenses, all of the Indies that sign the direct license received a benefit in the form of lower administrative costs, right?

A. My understanding is that they -- well, under the statutory license, they would all have to pay the SoundExchange administrative fee of 4.6 percent, and they all avoid paying that fee by signing the direct license.

Q. Right. So, in effect, Sirius XM absorbs whatever administrative costs there are of administering through the license process, right?

A. At least they relieve the label of having to pay that fee. That's what I know. And that's why I have made the correction -- adjustment.

Q. Okay. And skipping all of the math, on average, taking into account the administrative fee, is it right that direct license labels as a group were giving a 6 percent discount from the statutory rate? I probably said that wrong.

A. Okay. Do you want to try again then?

Q. Well, let's walk through the math then. I was trying to avoid it.

A. Try again and I would be happy to move forward. I didn't get it.

Q. If you take into account the fact that direct license labels were avoiding having to pay the SoundExchange administrative fee, in effect the average discount below the statutory rate wound up being about 6 percent, right?

A. I think that's right. I think that's

right. I will go with that.
Q. Okay. And just to be clear, because I got confused about this before, it is not a discount of 6 percentage points below the statutory rate, it is 6 percent less than the statutory rate?
A. Right. So if the statutory rate were 10 percent for round numbers, it would be 6 percent of that, which would be .6 percent lower percentage-of-revenue rate that they would agree to.
Q. Right, or 9.4 percent, as I do the math?
A. Good. We're on the same page.
Q. Thank you. You agree, don't you, that apart from saving the administrative fee, it appears that some Indies were motivated to sign direct licenses by Sirius XM's methodology for calculating royalties?
A. Yes.
Q. And I think you talked about that methodology earlier either today or yesterday, but can we refer to that as indexing?
A. We can and we do.
Q. All right. And that's explained on page 42 of your written rebuttal testimony, right?
A. Yes, that's correct.
Q. I think some of my next questions may

involve Sirius XM restricted information, I'm afraid, so I may need to invoke the protective order, though I don't think it will apply to Sirius XM folks.

JUDGE BARNETT: Okay. Anyone in the hearing room who, other than Sirius XM representatives -- and these are only the organization's representatives, right, no member representatives?

MR. HANDZO: If I am understanding you -- well, I am not sure I am understanding you, that's probably because --

JUDGE BARNETT: Are there label representatives who need to be excluded?

MR. HANDZO: Yes, I think anybody on our side of the room needs to be excluded. It is just the Sirius XM folks that can remain.

JUDGE BARNETT: Oh, you said Sirius. I'm sorry, I thought you said SoundExchange.

MR. HANDZO: I might have. It is quite possible.

JUDGE BARNETT: No, you didn't. I misheard. I just see SX in my mind.

THE WITNESS: You are not alone in that.

JUDGE BARNETT: Okay. Thank you.

(Whereupon, the trial proceeded in confidential session.)

O P E N   S E S S I O N

BY MR. HANDZO:

Q. Now, in Web IV, the Judges established different rates for ad-supported non-interactive and subscription non-interactive services, right?

A. Yes.

Q. And the ad-supported and subscription services in that case were both non-interactive, right?

A. Yes.

Q. And the functionality of the rights that both services were getting was the same, correct?

A. That's correct.

Q. And in Web IV, there was no reason to think that the ad-supported services used any fewer performances per-user than the subscription services, right?

A. I think there was reason to believe that.

Q. Did you measure any significant difference between the two?

A. I think we did. I am not certain.

Q. You are not sure?

A. I could look through my written direct testimony here. I don't recall right now for sure, no.

Q. Okay. The reason for the different rates between ad-supported and subscription services in Web IV was that there was a different willingness to pay by users, right?

A. Yes, I think in Web IV the Judges talked about some bifurcation based on positive versus zero and user willingness to pay.

Q. Okay. So through the principles of derived demand, the user's lower willingness to pay for an ad-supported service translated into a lower willingness to pay by the service, right?

A. For the service, that's different than for the music. Talking upstream or downstream?

Q. I will probably get upstream and downstream wrong, so let me reformulate the question.

A. Okay.

Q. The user's willingness to pay, which is downstream, is lower for the ad-supported service, right?

A. Correct.

Q. And through derived demand, that translates into a lower willingness to pay upstream by the service, right?

A. Okay. I am with you so far. The

advertising revenue obviously comes in here as a third-party, not -- but go on. I think you are right so far.

Q. Okay. That's -- what I just said is correct?

A. I think so.

Q. Okay. So at least as between ad-supported and subscription non-interactive services, the rate paid by the service is related to the downstream user's willingness to pay, right?

A. As between these two categories, I think that is -- that is fair.

Q. Therefore, all else equal, a subscription service will pay more, even if it has the same number of plays per-user compared to an ad-supported service?

A. Under the Web IV rates, they do pay more.

Q. Okay.

A. Per-play.

Q. I understand that that's the ruling of Web IV, but I want to get to the underlying analysis. It is correct, is it not, that an ad-supported service, non-interactive, is going to pay less per play than a subscription service non-interactive, even if they have the same number of plays, because there is a willingness, different willingness to pay downstream?

A. I think that's correct. That's what the -- that's what my analysis would show and Lerner equation, all that, I think does point that way, assuming there is a similar steering ability between the two types of services and similar opportunity cost, that's correct.

Q. So you would agree that a service that appeals to a group of subscribers with a higher willingness to pay will pay overall higher royalties than another service that has similar functionality and same intensity of use but appeals to a group of subscribers with a lower willingness to pay?

A. I think if everything else is equal, you haven't mentioned steering, but if everything else is equal, I think that's correct.

Q. Okay. You have read Mr. Orszag's written rebuttal testimony, right?

A. I have.

Q. And you see that he found that about half of the record company agreements with subscription services don't even have per-play rates?

A. With interactive services, you mean?

Q. Yes.

A. Okay. Okay. I didn't remember that exactly. I had that figure from Doctor -- Professor Rubinfeld's sample. And you are saying the same is true in the updated sample, okay.

Q. Okay. And do you recall from Mr. Orszag's written rebuttal testimony that even for those agreements that had a per-play metric in the interactive space, that per-play rate almost never determines the royalties paid?

A. I recall that.

Q. Okay. Do you have any reason to disagree with those facts as recited by Mr. Orszag?

A. No.

Q. So in those contracts where, let's say, the contracts where there is no per-play rate, the overall amount paid by the subscription service for music is related to the per-subscriber revenue, not to the per-subscriber consumption, right?

A. No. What the record companies paid is always based on the amount of plays because of the pro rata mechanism.

Q. Okay. And my question was what the service pays overall, okay? So the rate that the services pay --

A. Okay.

Q. -- is going to be based on its subscription revenues, not on its consumption?

A. Well, under percentage-of-revenue formula, that has to be correct by definition.

Q. Okay. And in the Web IV case, you proposed that the Services would pay a greater of per-play rate or a percentage-of-revenue rate, correct?

A. Yes.

Q. And you expected that Pandora would start off paying the per-play rates, right?

A. Yes.

Q. But you expected that as time went on, Pandora would pay on a percentage-of-revenue basis; is that right?

A. I think that's a bit too strong. I think, I think that there were -- that was the prospect or maybe the hope from Pandora's perspective, that they would increase their monetization and, therefore, grow their revenues per play basically, and so that if that were true after some period of time, the percent-of-revenue prong would become the binding one rather than the per-play prong.

Q. Isn't it right that in Web IV you opined that the per-play rates would be transitional?

A. In the sense I just described, that was, I think, again, the hope or a prospect, not a certainty.

Q. And you thought that the per-play rates would be supplanted by a percentage-of-revenue rate when the webcasting industry became more mature?

A. In the sense I just described with increased monetization, which was Pandora was in the -- in the -- making improvements in that as part of their algorithms and ad sales. And that would -- in that sense of the web -- of their business, at least, becoming more mature, yes.

Q. Okay. And, in fact, you opined in Web IV that Sirius XM was just such a mature business, right?

A. I don't recall that, but it is much more stable, I think that's fair. I would call that mature compared with certainly the webcasters as of a couple of years ago or Pandora.

Q. So to state the obvious, and I think you may have just said this, but a percentage-of-revenue metric -- under a percentage-of-revenue metric overall the amount the Service pays is directly related to its revenues, not to its consumption of performances?

A. Not to the -- okay. That's fair. I mean, as you get more subscribers, both of those metrics go up. So they are related but if you fix the number of subscribers and change the number of plays, that wouldn't affect the payments in total to the record industry as a whole.

Q. And once a Service began paying on a percentage-of-revenue basis, actually the effective per-play rate they'd pay would vary as a function of revenue earned, right?

A. I'm sorry, I was distracted. Could you just say it again? I apologize.

Q. Sure. From a Service that is paying on a percentage-of-revenue basis, the effective per-play rate is going to vary as a function of the revenues earned, right?

A. What is varying to cause the revenues to change? It depends.

Q. Okay. Well, let's just say the service becomes better able to monetize its service, it raises its subscription price, for example, without changing the number of plays.

A. Well, then on a per sub basis, you would pay the same amount -- excuse me, you would pay more for the music because you are paying percentage of revenue, even though the plays per sub haven't changed. That's by definition a percentage of revenue.

Q. Right. So the effective per-play rate is going to change as the revenue goes up, right?

A. Yes, that's right, as the subscription fee goes up.

Q. Now, in this case you are saying that the overall royalty paid by Sirius XM should be really directly related to the number of performances and not directly related to the revenues earned from those performances; is that fair?

A. No, because I am proposing a percentage-of-revenue rate structure, so their payments to the record industry will go up with the revenue over time, as it has been.

Q. But you get to that percentage-of-revenue rate by applying the number of plays, right?

A. Well, that's my benchmarking approach, yes. So then we convert it to percentage of revenue, so it has all the properties you have just described.

Q. So just to kind of circle back to where I may have started, you are proposing that Sirius XM pay about half of what Pandora I would pay on a per-subscriber basis under the Web IV rates because Sirius XM uses fewer performances per subscriber, right?

A. That's not the reason, no. The reason is because that's what comes out of my benchmarking approach. That's based on steering and opportunity cost principles. It is not because they play fewer songs. It is because that's what results from benchmarking.

Q. All right. Now I am confused. You are using the Web IV per-play rates, right?

A. Yes.

Q. You are just multiplying that by the number of performances you have calculated for Sirius XM, correct?

A. Correct.

Q. That's how you get to your rate, right?

A. Right. If they were playing more songs, performances per subscriber per month, my benchmarking exercise would end up with a higher per sub per month rate. That would be proposed.

Q. So your rate is directly related, your proposed rate is directly related to the number of performances per subscriber, right?

A. Yes, the $4.69 rate that I estimated.
Q. Okay. And as a result you are proposing that Sirius XM pay one-half of what Pandora I would pay on a per-subscriber basis because it has fewer performances per subscriber, correct?
MR. RICH: Objection, lack of foundation.
JUDGE BARNETT: Sustained.
BY MR. HANDZO:
Q. Let me just ask, are you familiar with the Music Choice service that's at issue in this case?
A. No.
Q. Are you aware that Music Choice provides sound recordings on a non-interactive basis to satellite television subscribers?
A. No, with apologies to Music Choice.
Q. You discussed earlier that in Web IV, the Judges used two benchmarks for their rate setting. One was the interactive services agreements; and one was the Merlin/Pandora agreement for subscription services. Right?
A. Yes.
Q. And the Merlin/Pandora agreement was the benchmark that you presented, correct?
A. Correct.

Q. And when you -- I'm sorry. Let me back up.

Before I go there, one of your criticisms of Mr. Orszag in this case is that he presents an analysis based on the effective rates in the interactive services market, right?

A. My criticism is that he did not follow the Judge's methodology in Web IV. That's the criticism.

Q. Okay. And one aspect of that criticism is that Mr. Orszag was using effective rates, right?

A. He started with the percentage-of-revenue rates there, not the per-play rates. The percentage-of-revenue rates were generally the effective rates, not the minimum per-play rates.

Q. Okay. Well, you understand that Mr. Orszag actually took the royalty statements and just figured out what Services were paying effectively on a percentage-of-revenue basis, right?

A. Okay. Which -- and that was the basis, it was percentage of revenue that were driving those royalty statements.

Q. Okay. And so your criticism is that he shouldn't have done that, he should have used the contractor headline per-play rates from those

agreements, right?
A. I'm just saying what he did do. I am not telling what he should have done. I am just saying what he did do, did not track what the Judges did in Web IV, and that led to a sharp departure. He claims he is following what they did, and I don't believe that is accurate.
Q. Leaving aside the Web IV decision, is there anything wrong in a benchmarking exercise with using effective rates?
A. Not as a general principle. It depends on how you do it.
Q. Okay. And, in fact, in your Web IV analysis using the Merlin/Pandora agreement, you calculated effective rates under that agreement, correct?
A. I did. The table we looked at earlier, for example.
Q. Right. So, for example, you went through that agreement and you figured out how much steering would affect the per-play rates stated in the contract, right?
A. The effective rate as opposed to the headline rate, yes.
Q. Yes. And you also went through a series

of other provisions in the contract that might have changed the economic terms of the deal to consider whether you needed to change the per-play rates, right?

A. That's correct.

Q. So, for example, the contract had guarantees, revenue sharing, a variety of other terms, right?

A. Yes.

Q. And in your Appendix D in 19 pages, you went through and determined how all of those would affect the effective rates, right?

A. I looked -- I considered that question.

Q. And you adjusted the headline rates to turn them into effective rates, didn't you?

A. I did.

Q. Now, am I right that in calculating effective rates in the Merlin/Pandora agreement, you didn't need to consider the percentage-of-revenue rate in that agreement because under the greater-of formula the per-play rates were the ones that yielded the highest royalty at the time?

A. That's correct. I didn't need to apply the percentage-of-revenue rate to calculate the effective rate because it was not binding.

Q. You have said that, you know, your criticism of Mr. Orszag in using effective rates is that it is not what you perceive the Judges to have done in Web IV.

Do you have any other reason, economic basis why that's not an appropriate way to proceed?

A. In general or for what he did?

Q. In general.

A. In general, no. There is nothing wrong with that. It all depends on what you do next.

Q. So your criticism of him comes down to the fact that you don't think that that's the way the rates were calculated in Web IV?

A. It is not.

Q. And that's the basis for your criticism on this issue, correct?

A. It is a big difference. Yes, that is my criticism on this particular issue.

Q. Okay. Now, isn't it true that in Web IV Dr. Rubinfeld adjusted the headline per-play rates to come up with effective rates, just as you did with the Merlin/Pandora deal?

A. That sounds right, but I don't recall specifically.

Q. But -- okay.

So Dr. Rubinfeld was in effect using effective rates, wasn't he?
A. I am not sure. I would have to go back and look, as I sit here right now.
Q. Okay. Well, let's -- I am going to ask you to look at the Web IV decision.
A. Okay.
Q. Which I think you may have.
A. I do have. It is here.
Q. Let me ask you to turn to page 26338.
A. Okay.
Q. And if you look at the left-hand column of the page towards the bottom, do you see that the Judges there describe Dr. Rubinfeld identifying various forms of non-per-play consideration?
A. Left-hand column towards the bottom?
Q. Yes.
A. Go on. Do you want me to read it for a while? What do you want to do?
Q. I just want to have you take a look at it and see if that refreshes your recollection that Dr. Rubinfeld, in fact, adjusted the headline rates from those interactive services to make them into effective rates taking into account other consideration in the agreements?

A. I'm not sure. I just have to catch up with you.
Q. Sure. Take your time.
A. On page 15 of my written rebuttal testimony, this describes what happened here and what Dr. Rubinfeld did was derived from the weighted average minimum per-play rate that he found in these contracts. And there is a cite there to his corrected written direct testimony in Web IV.
And this here also is citing that same source. So I am not quite with you here.
Q. All right. Well, let's just look at what the Judges said.
A. Okay.
Q. The page I was pointing to, right?
A. That's fair. I am just catching up. Which particular part of what they said then?
Q. Right. Down near the bottom of the left-hand column you see the line that says, "next Dr. Rubinfeld identified the various forms of non-per-play consideration" and it goes on from there.
A. Okay.
Q. Okay? And so that indicates that Dr. Rubinfeld actually adjusted the headline rates

to reflect other forms of compensation in the agreement, right?
A. This is for his ratio equivalency denominator here.
Q. Right.
A. Okay. That's --
Q. So in that respect, Dr. Rubinfeld was using effective rates, wasn't he?
A. I am not sure.
Q. Do you recall that at the time of the Web IV hearing, the per-play rates in the contracts that Dr. Rubinfeld was relying on were, in fact, the operative metric as opposed to per-subscriber or percentage-of-revenue rates?
A. Per-play rates were the operative metric?
Q. Yes.
A. Under what? Under which agreements?
Q. Under the interactive services agreements that Dr. Rubinfeld used as his benchmark.
A. I am not sure that was uniform across all of his agreements. I don't know that. I am not sure.
Q. Okay. Let me ask you to look at, turn to page 26325. In the right-hand column you see the heading "the Judges reject the adoption of a

greater-of rate structure"?
A. I do.
Q. Okay. And one paragraph down it reads, "The Judges first note that none of the percentage-of-revenue prongs in the greater-of agreements in the record has been triggered, which may suggest that the parties to those agreements viewed the per-play rates as the rate term that would most likely apply for the length of the agreement."
Do you see that?
A. I see that.
Q. Okay. So does that refresh your recollection that at the time of Web IV, the effective per-play rates that Dr. Rubinfeld was using were, in fact, the operative rates in the agreements?
A. Okay. I see that.
Q. Okay. And does that refresh your recollection on that point?
A. Not particularly but I read it.
Q. You don't have any reason to disagree with it?
A. No, certainly not.
Q. Loaded question when I ask it in the

presence of the three Judges?

MR. RICH: May I raise an objection to that last question? Your Honor, it is really asking him to infer from language in the opinion what Your Honors inferred from the evidence as opposed to what was a reasonable set of questions, which is whether it refreshes his personal recollection of the record.

It seems to me the latter is appropriate. The former is just asking him to interpret you, to which I think it is an objectionable question.

JUDGE BARNETT: I'm sorry, it is late in the day. I am having to look at this again. Overruled.

Mr. Rich, I think that he is just using that passage to refresh Professor Shapiro's recollection, although I can say we have pretty thick skin, we can -- if you can dish it out, we can take it.

BY MR. HANDZO:

Q. Since we are paused for the moment, Judge, since I was about to go into restricted session, I am not going to finish today, so just inquiring how the Court wants to proceed.

JUDGE BARNETT: You don't want to know.

Let's just go ahead. Anyone who is in the hearing room currently who is not privy to confidential privileged information, please wait outside. And will this be for the remainder of --

MR. HANDZO: It won't. It is relatively brief, I think.

JUDGE BARNETT: Briefly, please.

(Whereupon, the trial proceeded in confidential session.)

C O N T E N T S

E X H I B I T S

CERTIFICATE

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.

4/21/17

Date

Signature of the Court Reporter

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