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In re:) CONSOLIDATED PROCEEDING
DISTRIBUTION OF CABLE) NO. 16-CRB-0009-CD
ROYALTY FUNDS) (2014-17)

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[PUBLIC TRANSCRIPT]

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

2 (10:00 a.m.)

3 THE CLERK: It's 10:00 o'clock. Let's
4 raise the curtain.

5 (Recording in progress.)

6 MR. SACK: The curtain is raised. We are
7 in public session, Your Honor.

8 CHIEF JUDGE SHAW: Good morning,
9 everyone. Welcome to day two of our hearing in the
10 matter of Distribution of Cable Royalty Funds,
11 Consolidated Proceeding No. 16-CRB-0009 CD,
12 (2014-2017).

13 And we are on the public record. And I
14 don't know if we need to do this every day, I'll ask
15 around and find out, but this is the first day of
16 witness testimony.

17 By the way, the opening statements
18 yesterday were wonderful. Thank you very much. I
19 appreciated them. I'm sure I'm not alone in that.

20 But I think that maybe we'll have
21 appearances for the parties. And we'll use our
22 customary sequence here, beginning with Public TV.

23 MR. DOVE: Yes, this is Ronald Dove on
24 behalf of Public Television. And with me this
25 morning are Dustin Cho and also Scott Griffin from

1 Public Television.

2 CHIEF JUDGE SHAW: Thank you.

3 And the Joint Sports Claimants?

4 MR. CANTOR: Yes. Good morning, Your
5 Honor. Dan Cantor for the Joint Sports Claimants.
6 With me is my colleague Michael Kientzle.

7 CHIEF JUDGE SHAW: Thank you.

8 And the Settling Devotional Claimants.

9 MR. MacLEAN: Good morning, Your Honor.
10 Matthew MacLean from Pillsbury Winthrop Shaw Pittman
11 for the Settling Devotional Claimants. With me are
12 my colleagues Jessica Nyman, Michael Warley, and
13 Caroline Block. And from the law firm of Lutzker &
14 Lutzker, Arnold Lutzker and Benjamin Sternberg.

15 CHIEF JUDGE SHAW: Thank you.

16 The Canadian Claimants Group.

17 MR. COSENTINO: Good morning, Your Honor.
18 Victor Cosentino. With me this morning is Michelle
19 Moy and my colleague Kendall Satterfield.

20 CHIEF JUDGE SHAW: Thank you.

21 And the Commercial Television?

22 MR. ERVIN: Good morning, Your Honor.
23 Dave Ervin on behalf of the Commercial Television
24 Claimants. With me this morning is my colleague
25 Preetha Chakrabarti.

1 CHIEF JUDGE SHAW: Thank you.

2 And the Program Suppliers.

3 MR. OLANIRAN: Good morning, Your Honor.

4 Greg Olaniran with Mitchell Silberberg & Knupp.

5 With me this morning are my colleagues Lucy

6 Plovnick, Jake Albertson, and Chloe George.

7 CHIEF JUDGE SHAW: Thank you.

8 Welcome to you all.

9 Let me inquire before we call the first
10 witness if there are any housekeeping or similar
11 matters to take care of this morning before we get
12 started with anything else.

13 MR. DOVE: Your Honors, Public Television
14 has one housekeeping matter relating to the
15 introduction of certain exhibits into evidence for
16 use in this morning's direct.

17 CHIEF JUDGE SHAW: All right.

18 MR. DOVE: Public Television Claimants
19 would like to move for admission en masse of Exhibit
20 Nos. 3019, 3020, and 3022 through 3034. All of
21 these documents were produced by Dr. Johnson in
22 response to Your Honors' Order 24 and clearly fall
23 within the scope of Dr. Johnson's testimony and the
24 rebuttals to that testimony.

25 We've notified the parties, and there are

1 no objections.

2 CHIEF JUDGE SHAW: Very good. Then those
3 are received.

4 (Exhibit Numbers 3019, 3020, and 3022
5 through 3034 were received into evidence.)

6 MR. DOVE: Thank you, Your Honor.

7 CHIEF JUDGE SHAW: All right. Well, as
8 long as the ball is in your court, you can call your
9 first witness.

10 MR. DOVE: Your Honor, the Public
11 Television Claimants would like to call Dr. John
12 Johnson.

13 MR. SACK: We are promoting him
14 momentarily. Stand by.

15 CHIEF JUDGE SHAW: Good morning,
16 Mr. Johnson. Can you hear me?

17 THE WITNESS: Yes, I can.

18 MR. SACK: There can only be one
19 microphone on in a room at any time.

20 THE WITNESS: How about now?

21 CHIEF JUDGE SHAW: A little better.

22 MR. SACK: Can you please speak,
23 Mr. Johnson, so we can get a mic check?

24 THE WITNESS: Testing, testing, testing.

25 MR. SACK: Judges, are you able to hear

1 that?

2 JUDGE RUWE: Yes.

3 CHIEF JUDGE SHAW: All right. Well,
4 welcome, Mr. Johnson. We have some protocols in
5 place for all the witnesses, and I'm sure your
6 attorneys have spoken with you about these things in
7 general, but it does say that the Chief Judge will
8 remind the witness that he or she may not
9 communicate with anyone other than through the Zoom
10 webinar while testifying. It's a lot like being in
11 a regular courtroom, except it's virtual here.

12 THE WITNESS: I understand. Thank you,
13 sir.

14 CHIEF JUDGE SHAW: Thank you. And I'm
15 going to swear you in.
16 Whereupon--

17 JOHN HENRY JOHNSON, IV,
18 having been first duly sworn/affirmed, was examined
19 and testified as follows:

20 THE WITNESS: I do.

21 CHIEF JUDGE SHAW: Thank you very much.

22 And we're back on the record, and I'll
23 just turn the witness over to counsel.

24 DIRECT EXAMINATION

25 BY MR. DOVE:

1 Q. Good morning, Dr. Johnson.

2 A. Good morning.

3 Q. Would you please state and spell your
4 full name for the record.

5 A. John Henry Johnson, IV, J-o-h-n,
6 H-e-n-r-y, J-o-h-n-s-o-n, I-V.

7 Q. And, Dr. Johnson, would you please
8 describe your educational background.

9 A. Yes. I have a Ph.D. in economics from
10 the Massachusetts Institute of Technology, and I
11 have a Bachelor's degree in economics with a minor
12 in English literature from the University of
13 Rochester in Rochester, New York.

14 Q. And what is your current professional
15 position?

16 A. Currently, I am the CEO and a partner at
17 Edgeworth Economics, a consulting firm in
18 Washington, D.C. I am also an adjunct professor at
19 the McCourt School of Public Policy at Georgetown
20 University.

21 Q. And what kind of work do you do at
22 Edgeworth Economics?

23 A. Well, at Edgeworth, I am a professional
24 economist and an econometrician, which means that I
25 have generally worked on different types of

1 engagements where I deal with complicated economic
2 issues, particularly those that have large, varying
3 data sets. I am an expert in economics and
4 statistics, and so I am able to answer questions
5 that are meaningful in sort of a practical,
6 real-world sense.

7 Q. And can you give some examples of cases
8 where a client asked you to study a complex
9 data-intensive problem?

10 A. Sure. I have two in mind that I can
11 share. The first is an engagement I did for the
12 National Football League Players Association. I was
13 retained by DeMaurice Smith, the head of the union,
14 to help develop an econometric model that had to
15 deal with injuries to players.

16 The econometric model that myself and my
17 colleagues developed at Edgeworth looked at data on
18 all of the various plays that occurred and
19 particularly tried to focus on where was the highest
20 incidence of injury. The results of our econometric
21 study showed that, in fact, the highest instance of
22 injuries occur on the kickoffs.

23 And so as part of the negotiation with
24 the NFL, our study was used as the basis to change
25 the kickoff and to move it back. Some football fans

1 might be upset with that, but in terms of helping
2 players with injuries, that actually is a real-world
3 example.

4 Another example of work I did was for
5 Etihad Airways, where I studied a large volume of
6 flight data and passenger data with a particular
7 focus on what's called the Open Skies program and
8 whether or not, in the face of increasing
9 competition, there were increased travel to the
10 Asian subcontinent through the gateway where Etihad
11 Airways function. And I found despite increased
12 competition, there was actually more flights to the
13 Asian subcontinent by looking at very large volumes
14 of flight data.

15 Q. And can you give an overview of the
16 experiences that have shaped how you think about
17 problems as an economist?

18 A. Yes. Well, I've been very fortunate
19 during my 20-plus-year career to have quite a few
20 formative experiences, starting at MIT. I was very
21 fortunate to study under a Nobel laureate, Joshua
22 Angrist, who is one of the most foremost
23 econometricians in the world. I was his research
24 assistant. He was my thesis advisor. I worked with
25 him, stayed in good touch with him over the years.

1 After my time at MIT, I tried my hand at
2 academia. I was an assistant professor at the
3 University of Illinois in Urbana-Champaign, where I
4 authored peer-reviewed research, I served as a
5 thesis advisor, I taught classes on labor economics,
6 on econometric methodologies. I found being a
7 professor a little bit lonely, quite frankly, and so
8 after that, I decided to move into the consulting
9 world, where I have spent a large part of the rest
10 of my career.

11 In that role, I've been a consultant on
12 econometric issues to a wide range of commercial
13 clients. I have been accepted as an expert witness
14 in econometrics and statistics and economics in
15 numerous federal district courts, where I've offered
16 opinions on econometric models.

17 In addition, though, I've also tried to
18 engage as a teacher in a number of different ways.
19 One is I continue to teach at Georgetown University
20 as an adjunct professor. Last semester, I taught a
21 course on antitrust and public policy. Next
22 semester, I'm teaching a brand-new course on
23 aggressive enforcement of public policy. So I
24 continue to teach students. I have been a thesis
25 advisor at Georgetown for Master's students.

1 And then I've also tried to take my skill
2 set to a more practical real-world audience. Two
3 particular things of note there is, one, I authored
4 a book, more of a popular press book, Everydata:
5 The Misinformation Hidden in the Little Data You
6 Consume Every Day, available on Amazon.

7 But, basically, that is a book that
8 speaks to how do people consume the large volume of
9 data that they see in advertising, in the news, in
10 the media. I actually gave a TEDx talk on how
11 misleading the headlines can be.

12 And then the other thing I've done which
13 I'm also quite proud of is I am an instructor on
14 LinkedIn Learning on an online class called Data
15 Analytics for Business Professionals. My class,
16 which covers the basics of how businesspeople can
17 think about interpreting data, has been taken by
18 more than 230,000 students worldwide.

19 So I've engaged in the profession and I
20 am trying, as an economist, I view my role to
21 explain complicated economic concepts simply, to
22 understand the strengths and weaknesses of
23 methodologies, and to make these real-world problems
24 help answer those with a skill set I've been
25 fortunate to develop over the years.

1 Q. Thank you, Dr. Johnson.

2 Have you previously provided expert
3 testimony on issues in the cable industry?

4 A. Yes, I have.

5 Q. And what sort of work have you done
6 there?

7 A. Well, there's sort of two broad
8 categories of work. One involves a series of
9 antitrust cases against Charter Communications, but
10 it involved the pricing of set-top boxes in the
11 Louisiana area, where I offered testimony on
12 pricing, on overbuilders, on modeling of basically
13 how that pricing worked, and it was about time and
14 bundling allegations.

15 And then the second stream of work that I
16 have worked involved what I would call wage and
17 hours disputes. In those cases, for AT&T, for
18 Comcast, for Verizon, I had very large volumes of
19 GPS data where I could actually track truck drivers
20 and technicians and see, in the face of meal break
21 claims, where were they stopping their trucks in the
22 course of the day.

23 Q. Have you prepared written testimony for
24 these proceedings?

25 A. Yes, I have.

1 Q. And do you have clean copies of that
2 testimony in front of you?

3 A. Yes, I do.

4 Q. And are those Exhibit Numbers 7300 for
5 your written direct testimony and 7303 for your
6 written rebuttal testimony?

7 A. Yes, it is.

8 Q. And do you have any changes this morning
9 to that written testimony?

10 A. No.

11 Q. Dr. Johnson, what were you asked to do in
12 this case?

13 A. So in this case, I was asked to develop
14 an econometric model to assist the Copyright Royalty
15 Judges in the allocation of the Section 111
16 royalties among six claimant groups, the Joint
17 Sports Claimants, the Commercial Television
18 Claimants, the Public Television Claimants, Canadian
19 Claimants, Settling Devotional Claimants, and the
20 Program Suppliers.

21 Q. And did you reach any opinions in
22 connection with that assignment?

23 A. Yes, I did.

24 Q. And at a high level, what did you
25 conclude from your analysis?

1 A. Well, first, in studying the period at
2 issue here, between 2014 and 2017, one of the things
3 I determined is that the WGN conversion to a cable
4 network in 2015 was a major shift in the industry,
5 and that affected the distant signal landscape.

6 Now, despite that change, I also
7 determined that the Waldfogel-type regression model,
8 such as one adopted in the prior proceeding, can be
9 reliably used to simulate a hypothetical marketplace
10 for the 2014 to 2017 period.

11 Now, I didn't just blankly accept the
12 econometric model from the prior proceeding, but I
13 undertook a thorough investigation so I could
14 understand exactly how the model worked and to try
15 to address issues that were raised by the panel in
16 the prior proceeding about the model. The
17 regression model that I put forward here reflects
18 several key improvements on the model the Judges
19 adopted in the prior proceeding.

20 And then, finally, as you all know, there
21 are many, many experts in this proceeding with many,
22 many opinions. I have reviewed the opinions that
23 are relevant about my work. None of the opinions of
24 those experts undermine the reliability of my model.

25 Q. Dr. Johnson, we'll get into more details

1 on the specific -- excuse me, we'll get into more
2 details in a moment, but at a high level, what is a
3 Waldfogel regression? I mean, why is it called
4 Waldfogel?

5 A. So a Waldfogel regression is named after
6 Joel Waldfogel. He is currently a professor at the
7 University of Minnesota. He's an econometrician.
8 So he's the first person to present that type of
9 model, as I understand it, in the history of these
10 proceedings, and so it has now become known as the
11 Waldfogel-type regression.

12 Q. And what was your conclusion as to the
13 viability of using a Waldfogel-type model in this
14 proceeding?

15 A. Well, a Waldfogel-type model, one that
16 relates royalties to claimant minutes, is a valuable
17 tool and has value here as we're trying to construct
18 this hypothetical marketplace and follow a relative
19 marketplace value scheme.

20 Q. And I believe you may have already
21 mentioned this, but just to make sure, what other
22 materials did you review in developing your
23 opinions?

24 A. Well, I started with the prior decision
25 and the expert reports of Dr. Crawford and several

1 of the other experts, the econometrics experts,
2 Dr. Israel, Dr. George, Dr. Bennett. I also then
3 conducted an analysis of the industry.

4 I obviously relied on all the sources in
5 my reports, and then I relied on a very large volume
6 of data that my team and I collected, developed,
7 processed, and then ultimately my expertise as an
8 econometrician and the various analyses I conducted
9 to determine what were the factors that drive the
10 Waldfogel-style regression in this context and what
11 is the best estimate of damages -- I'm sorry -- of
12 royalties in this proceeding, given the constraints
13 of there is no actual marketplace.

14 Q. And did you also review other expert
15 witnesses' written testimony in this proceeding?

16 A. Yes, I did.

17 Q. And what was your overall takeaway from
18 that review?

19 A. Again, there's a lot of different
20 opinions of -- a wide range of opinions. I have
21 prepared to discuss what those opinions are. I've
22 discussed those various critiques, discussed areas
23 of agreement and then areas of disagreement and then
24 areas where I just simply think there's no merit at
25 all. But, overall, none of those opinions undermine

1 the reliability of my model or the approach I have
2 taken here.

3 JUDGE STRICKLER: Excuse me, Mr. Dove.

4 Dr. Johnson, this is Judge Strickler.

5 Good morning, sir. How are you?

6 THE WITNESS: Good. How are you, sir?

7 JUDGE STRICKLER: Fine, thank you. I
8 have a question for you.

9 You mentioned a moment ago that among the
10 materials that you considered were materials related
11 to the Crawford regression. Is that right?

12 THE WITNESS: Yes.

13 JUDGE STRICKLER: And among those
14 materials, were there materials that had been
15 provided to the -- initially to the Settling
16 Devotional Claimants in the satellite proceeding for
17 2010 to 2013 that had been made known to you or
18 provided to you in order for you to conduct your
19 analysis, either to prepare your direct, to consider
20 whether to change your direct, or to prepare your
21 rebuttal testimony?

22 THE WITNESS: No, sir. Public Television
23 is not a party to those proceedings, and so I had no
24 access to any of those materials.

25 I also did not have access to the

1 2010-2013 data sets that Dr. Crawford used in this
2 proceeding. I had to start from scratch and assess
3 his model on the face of the data I had here and the
4 testing I did that would allow me to determine that
5 the types of claims that the Settling Devotional
6 Claimants have been making about Dr. Crawford's
7 model have no merit.

8 JUDGE STRICKLER: I see. So, just so I'm
9 clear, those materials were never things that you
10 had reviewed for the purposes of preparing or
11 thinking about revising any of your testimony?

12 THE WITNESS: That's correct, sir.
13 Public Television does not have access to any of
14 those materials. They're not a party, as I
15 understand it, to that proceeding.

16 JUDGE STRICKLER: Thank you, Dr. Johnson.
17 BY MR. DOVE:

18 Q. Dr. Johnson, could you please give us a
19 roadmap of how you will walk us through the process
20 of reaching your conclusions?

21 A. Yes. So I divided my testimony into
22 three parts today. First, I want to start with an
23 introduction to key economic concepts, a basic
24 primer on the cable industry, thinking about
25 relevant decisionmakers here, an explanation of the

1 royalty obligations and how the basic formula,
2 statutory formula works.

3 Then I want to get into the heart of my
4 affirmative analysis, the economic analysis of
5 royalty allocation. As part of that, I'm going to
6 walk the panel through the entire process from
7 beginning to end, what I will call and you'll hear
8 the phrase "iterative process," what was the
9 thinking from the beginning of my engagement to the
10 end about exactly how I assessed and developed my
11 econometric model, how the data was prepared, how
12 the model was formulated. I'm going to take you
13 through all of the details so you can understand and
14 probe my thinking process and how I arrived at my
15 results.

16 Then in the third part of my testimony,
17 I'm going to offer an assessment of the other
18 experts' opinions. As I said before, there's a wide
19 range of opinions. I'm going to discuss some of the
20 economic theories, some of the areas of
21 disagreement, some of the areas of agreement, and
22 testing of my model, and, ultimately, what my
23 opinions are with respect to those opinions.

24 Q. Thank you, Dr. Johnson.

25 Let's start with the introduction to key

1 economic concepts. For the non-economists among us,
2 could you give an introduction to the economic
3 concepts that we need to understand for this
4 analysis?

5 A. Sure. So let's start at the beginning,
6 all right? So we're here -- in this proceeding
7 today, we're going to talk a lot about distant
8 signals, but let's just sort of step back one level.

9 What we're really interested in is cable
10 companies sell bundles of channels to their
11 subscribers. When we use the phrase "cable
12 companies," and we'll get into a little more detail
13 later, we're talking about Comcast, Verizon, Time
14 Warner, Cox, also known as multi-system operators.
15 These cable companies, what they do is they bundle
16 various combinations of channels together as
17 lineups.

18 There are broadly two types of channels.
19 The first are what we'll call the national cable
20 channels, CNN, ESPN, HBO. That's one type of
21 channel you would see covered, carried. And then
22 the other types of channels are called over-the-air,
23 OTA, broadcast channels. Over-the-air channels are
24 generally those that you think of with local
25 origination, WLIW-21, DCW-50.

1 Now, the cable companies are bundling
2 these different channels, both national and
3 over-the-air, together and then they sell them to
4 their subscribers at different service tiers.

5 Q. And what are the channels that are
6 relevant to this proceeding, Dr. Johnson?

7 A. So in this proceeding, we're going to be
8 focused particularly on the over-the-air channels,
9 the over-the-air broadcast channels, but more
10 explicitly those that are carried distantly by the
11 cable companies.

12 Q. And what is a distant channel?

13 A. Okay. So, basically, the idea is,
14 depending on where a signal originates and where
15 their subscribers are located, a signal is either
16 local or distant. The idea of over-the-air
17 broadcast comes from that which can be picked up by
18 the antenna at your house.

19 So there's a service area in which
20 retransmission of a station is considered local.
21 And so, for example, WDCW-DT, Washington, D.C., is
22 an over-the-air channel. And there's a local
23 service area. This is a channel that I can get at
24 my house in Northern Virginia, for example, just off
25 the antenna. But the cable company can choose to

1 not only have that signal locally but then for it to
2 be retransmitted to subscribers outside of that
3 local service area.

4 And when we talk about that type of
5 retransmission to subscribers outside the local
6 area, that's what we call distant retransmission.

7 Q. So you've talked about cable companies
8 bundling different combinations of channels for
9 subscribers. What do these bundles of distant
10 channels look like from the subscribers'
11 perspective?

12 A. Okay. So if you were to think about the
13 bundles, I have here an example of what I call the
14 old style TV Guide, a little booklet I used to look
15 at when I was a kid. But this is basically an
16 excerpt of three different types of over-the-air
17 channels. WDCA Fox 5 Plus, WDCW, and PBS, WETA PBS.

18 So I talked about before that the cable
19 channels pick whether to retransmit an entire
20 station locally or distantly. This proceeding,
21 though, is about how do we compensate the copyright
22 holders for the programming that's carried on those
23 channels.

24 So, for example, if you look at W DCA Fox
25 5, on this particular sample, you've got the movie

1 "Bull," you've got the TV show "Modern Family," and
2 you've got the TV show "Family Feud." Each of those
3 are a program that is provided or copyright is held
4 by the program supplier. Now, the Fox 5 news at
5 5:00 o'clock is actually a program that is -- the
6 copyright is held by Commercial Television
7 providers.

8 If you look at a different channel like
9 the CW, you might see HBCU game of the week and that
10 is a Sports Claimant holding, but the pregame show
11 is actually not sports programming. That's
12 categorized as Program Suppliers. There is one set
13 of stations, those that are PBS affiliates, where
14 all of the programming is the copyright is held by
15 Public Television.

16 The point of this is that each channel
17 represents a cable bundle, which is in itself a
18 bundle of programming. So here the task at hand is
19 how do we take these bundles and how do we allocate
20 the appropriate value to the copyright holders,
21 given the choices that cable companies make?

22 Q. And from an economic perspective, how do
23 cable companies make decisions about which channels
24 to carry distantly?

25 A. Okay. As I said before, the cable -- the

1 term "cable television company," I mentioned the
2 MSO. When you colloquially talk about cable, you
3 might say, oh, Verizon is my cable company. Well,
4 Verizon is a multi-system operator, but to actually
5 understand channel lineups and distant signal
6 decisions, you have to go a little deeper.

7 Verizon has a series of what are called
8 MSO subsidiaries. An example of MSO subsidiaries,
9 Verizon New York, Verizon Virginia. Now, under the
10 surface of those, however, are cable system
11 operators. You'll see this acronym, CSO. And so,
12 for example, under Verizon Virginia, there is one
13 CSO for the Washington, D.C. area, there's another
14 CSO for the Richmond, Virginia area, and there's yet
15 a third CSO for the Norfolk, Virginia area.

16 Now, these CSOs, under the surface of
17 those are subscriber groups.

18 Q. And let me just stop you there just to
19 define that term. I mean, does each cable system
20 operator, Dr. Johnson, carry the same distant
21 channels to all of its subscribers?

22 A. No, it does not. So the reason why the
23 subscriber group is important here is because it is
24 at the subscriber group that we see the variation in
25 the channel lineups. In other words, different

1 subscriber groups can carry different sets of
2 distant -- of signals on channels distantly. So let
3 me get into the details, I think it helps with the
4 example here for Washington, D.C.

5 As I said, I live in Northern Virginia.
6 I would fall into subscriber group 3, Arlington
7 County, D.C., Fairfax County. That represents one
8 set of channel lineups that can be carried
9 distantly. But the channel lineup for
10 Fredericksburg City and Spotsylvania County is
11 potentially different. Stafford County is
12 different. Culpeper County is different. And what
13 you see is, under the surface of a CSO, you have
14 different potential choices with respect to what is
15 the channel lineup they are carrying locally or
16 distantly.

17 This idea of trying to get at the heart
18 of both the variation in the observed observations
19 about distant carriage and the decision-making is
20 going to be critical to the approach that I'm going
21 to apply in this manner.

22 JUDGE STRICKLER: Dr. Johnson, I have a
23 question. Excuse me, Mr. Dove.

24 You just said a moment ago that you could
25 look at these subscriber groups and you could

1 determine which signals were sent locally or
2 distantly. Do you also come across subscriber
3 groups in which a signal was sent locally and
4 distantly, that is to say, there were both local
5 viewers and distant viewers within a subscriber
6 group?

7 THE WITNESS: So I think, Your Honor, if
8 I'm understanding your question correctly, it is
9 possible that you can have -- I think definitionally
10 if it's carried local, that signal can't be distant
11 for that subscriber group. However, you could have
12 a local signal and a different signal that's distant
13 from a different locale.

14 JUDGE STRICKLER: And it could be the
15 identical signal, the identical channel lineup, some
16 of the recipients are local, and some of them are
17 distant? Is that what you're saying is possible?

18 THE WITNESS: It's possible. However,
19 that phenomenon actually does not occur that often.
20 There are a number of results in my report on that
21 type of whether duplication exists at that level.
22 And, in fact, the amount of duplication actually is
23 quite small. I'll talk about that a little bit more
24 later.

25 JUDGE STRICKLER: You will be talking

1 about that. So you don't have, at least at this
2 point -- and I'm not going to ask you to search your
3 memory and I'll wait for Mr. Dove to ask you, if you
4 don't have it at hand. When you say it doesn't
5 happen often, how often does it happen or will you
6 need to wait until we get into your testimony a
7 little more?

8 THE WITNESS: My rough recollection is
9 it's about 20 percent, is the duplication rate. But
10 I will talk about it at length in a section on
11 duplication.

12 There are several analyses in my report
13 on this issue, but basically two things I would just
14 say, not to jump ahead, is that I actually did a
15 fairly exhaustive search on what duplication amounts
16 actually are across these local versus distant
17 streams. And they are, as I said, relatively small.
18 But also, because of the nature of the modeling I am
19 doing here, the average relative value will account
20 for that issue, but, again, I'll get into a lot more
21 detail later, Your Honor, but I just -- that's the
22 general gist of what I'm thinking on that issue.

23 JUDGE STRICKLER: I appreciate that. And
24 just so I'm clear with your use of phrases,
25 duplication rate means a -- or duplication, concept

1 of duplication, as you've just used it, means a
2 signal that's sent out both to distant and to local
3 cable subscribers who are -- who may be contiguous
4 and get the same exact signal? Is that a fair
5 definition as to what you mean?

6 THE WITNESS: I think it is. I'm going
7 to go through it in detail because it's a little
8 more complicated because you have to match up
9 different types of programming at the same time.
10 But, in general, that is correct, but I do have a
11 whole section on that later, and I will address it
12 in full detail. And then if you still have
13 questions, Your Honor, I'll be happy to try to
14 clarify again.

15 JUDGE STRICKLER: Thank you, Mr. Johnson.
16 Thank you, Mr. Dove.

17 MR. DOVE: Thank you, Your Honor.

18 BY MR. DOVE:

19 Q. And just to clarify, and I think you may
20 have said this earlier, Dr. Johnson, but can a
21 signal be local to one subscriber group and distant
22 to another subscriber group?

23 A. Yes, it can.

24 Q. Okay. Now, Dr. Johnson, you drew a
25 distinction earlier between national cable channels

1 and over-the-air channels. What are some key
2 differences between them?

3 A. Well, I think let's start with just sort
4 of the nature of how negotiations work. There is an
5 economic marketplace that determines the value for
6 the national cable channels. So let's take sort of
7 a fairly simple demonstrative. The seller of the
8 product is the national cable channel. They are
9 selling their channel lineups.

10 The buyer is the cable company. In this
11 case we will say Verizon at the highest level. What
12 is it that they, the seller, is selling? They are
13 selling programming, certain content and a certain
14 volume of content to the cable company.

15 What is the cable company paying? They
16 are negotiating an affiliate's fees, price times
17 quantity, there's what it is that we will pay you.
18 So that negotiation can directly occur such that we
19 can observe this national cable channel marketplace.

20 Q. And then so you have talked about
21 national cable channels or cable networks. What are
22 the other channels that are relevant? What are the
23 channels that are actually relevant to this
24 proceeding?

25 A. Well, the relevant channels here are the

1 over-the-air channels. Particularly the distant
2 content on those channels.

3 Q. So in that case, let's now focus on -- on
4 those over-the-air broadcast channels.

5 How is an over-the-air channel
6 compensated for its programming?

7 A. Here is where -- here's why we're here
8 today. Thinking back to the same exact sort of
9 framework, we have a seller, the channel, let's say
10 it is CW, WDCW, the buyer of the cable company,
11 Verizon. The product that is being sold is the
12 programming, a certain volume of programming and
13 content on that channel.

14 But instead of there being a direct
15 negotiation we have the Section 111 rules that
16 instead have royalties paid as a result of a
17 statutory formula to the Copyright Office.

18 So in lieu of a marketplace where they
19 actually negotiate with each other, we have this
20 statute which determines how much is paid into a
21 royalty pool.

22 Q. And, again, what is the purpose of this
23 proceeding? What are we trying to do?

24 A. Well, given that there is no actual
25 marketplace, the panel as I understand it has been

1 tasked with allocating the royalties in the pool
2 under a hypothetical marketplace standard where we
3 are trying to recreate what can we learn from this
4 actual world and how can we apply that to determine
5 the copyright holder royalty allocation.

6 Q. And given that there is no negotiation
7 with the individual channels, how do cable companies
8 determine their obligation for the distant
9 programming that they do carry?

10 A. Okay. So I thought -- the way they do it
11 is on the basis of a formula. And there are details
12 in my report on the formula, but I thought, since I
13 think it is complicated formula, I am going to try
14 to explain it with sort of an example.

15 We're going to use the phrase "statement
16 of accounts" during the course of the proceedings.
17 I am sure you will hear about this if you haven't
18 heard about it already. And these are the files
19 that the cable companies actually fill out which
20 details their distant carriage decisions.

21 These statement of accounts record
22 decisions at the subscriber group level. And so
23 here is an example from my Verizon Virginia LLC, and
24 I am looking at the Fredericksburg City and
25 Spotsylvania County statement of account.

1 What you will see if you were to look at
2 the statement of account, it looks like this which I
3 have blown up here on the left-hand side.

4 Q. Let's look at that box. What's in the
5 call sign column and what's in the DSE column? What
6 is in the -- yeah, the call sign column and what's
7 in the DSE column?

8 A. Okay. So the call signs represent the
9 over-the-air broadcast channel that is being carried
10 distantly to subscribers in the Fredericksburg City
11 and Spotsylvania County subscriber group. This is
12 the consistent lineup that all of those subscribers
13 have of over-the-air channels carried distantly.

14 Q. And then what does the DSE column
15 represent?

16 A. So the DSE is something called the
17 distant signal equivalents. It is a part of the
18 statutory formula. There are values in the
19 statutory formula, a value of 1 is assigned to
20 independent stations. And a value of .25 is
21 assigned to broadcast and to non-commercial
22 educational stations.

23 So you can see here, for example,
24 WZDC-CD, the first call sign has a DSE value of 1.
25 That is an independent station. WMPT is a Public

1 Television station. That has a DSE of .25.

2 Q. And what do these DSE values indicate, if
3 anything, about the value of the programming on a
4 given channel?

5 A. Well, DSE values don't tell you anything
6 about the value. What they tell you is how the
7 statutory formula works. The value has to be
8 derived from thinking about a hypothetical
9 marketplace.

10 Q. Okay. So now we have a list of channels
11 and the DSEs. What does the cable system operator
12 do next to figure out how much money it owes?

13 A. Well, what happens next is they add up
14 the number of DSEs, and you will see that total DSEs
15 is 2.75. Then there's a calculation where they also
16 for that subscriber group, they need to calculate
17 the gross receipts for that group. Right?

18 Then there is a formula that for each
19 amount of DSEs in a non-linear way, it calculates
20 how much you have to pay and that formula gives you
21 what is called the base rate fee for that group.

22 You see this phrase repeatedly in my
23 testimony and other testimony talking about the base
24 rate fee obligation prior to the minimum fee.

25 Q. And for reference, Dr. Johnson, where

1 could one find the details of the formula that you
2 just discussed?

3 A. In my direct testimony, I have several
4 discussions of this, but the main place you can find
5 that would be paragraphs 28, 29, Figure 9 forward,
6 but that's the main place. It is Section 3 of my
7 direct testimony from July 1st, 2022.

8 Q. Dr. Johnson, does a cable system operator
9 need to pay any other statutory royalties for the
10 distant signals that it carries?

11 A. Well, there is another set of fees called
12 the 3.75 fee that several of the copyright
13 holders -- the CSOs have to pay.

14 Q. And what is that 3.75 fee?

15 A. The 3.75 fee has to deal with what are
16 called permitted versus non-permitted stations. By
17 statute, there's a cutoff date in the 1980s, after
18 which if you're carrying certain channels, you have
19 to pay into the 3.75 fee pool and then that allows
20 for those copyright holders to have a claim on those
21 royalties.

22 Q. But again what you are showing in this
23 example is -- relates to the base fee; is that
24 right?

25 A. Yes.

1 Q. And how do the dollar amounts in the
2 respective base and 3.75 royalty pools compare for
3 the 2014 to 2017 time period?

4 A. The majority of the royalty pool is found
5 in the base fees.

6 Q. Are all the --

7 JUDGE STRICKLER: Excuse me, Dr. Johnson.
8 When you say the majority, do you have a percentage
9 figure in mind?

10 THE WITNESS: I will point you -- Your
11 Honor, I would point you to Figure 10 in my direct
12 report where I have a graph. And you will see there
13 that -- one second, sir.

14 JUDGE STRICKLER: I am looking at it now.

15 THE WITNESS: The yellow section is what
16 includes other fees. The little yellow bars will
17 tell you the rough magnitude. I don't have 3.75
18 broken out separate from others as well, but that's
19 where the 3.75 fees would show up. So it is a
20 relatively small percentage but I don't have an
21 exact percentage off the top of my head, Your Honor.

22 JUDGE STRICKLER: Thank you, Dr. Johnson.

23 BY MR. DOVE:

24 Q. Dr. Johnson, are all claimant groups
25 entitled to both base and 3.75 fees?

1 A. No, they're not.

2 Q. And who is not entitled to 3.75 fees?

3 A. Public Television is not entitled to 3.75
4 fees.

5 Q. Dr. Johnson, what is a minimum fee?

6 A. Okay. So under the formula, there's
7 another part to the formula. What happens is I
8 showed you one subscriber group. That calculation
9 gets repeated for all of the subscriber groups
10 across a given CSO.

11 And then they have to do a comparison.
12 So what you will see here is there is a requirement
13 that all cable systems with a certain amount of
14 gross receipts, \$527,600, are required to pay at
15 least a minimum fee. And so that minimum fee is
16 1.064 percent times the gross receipts.

17 So what happens is cable system operator
18 on the form-3 calculates what is their royalty fee
19 obligation under the formula before the minimum fee.
20 There's -- we look at block 3 here at the bottom,
21 line 1 is that base rate fee. The sum of that
22 number for each subscriber group. There's the 3.75
23 fees. That's added. In this case there were none
24 for this particular example. This is their total
25 fee obligation under the formula before the minimum.

1 They also have to calculate their minimum
2 fee. And you will see here the minimum fee is
3 3,001,818. The total royalty obligation of the
4 formula 3.362, they are going to pay the greater of
5 those, and so everyone has to check against the
6 minimum fee.

7 Q. Dr. Johnson, there are a lot of details
8 we just went through here, but what is the key
9 takeaway for us about what the royalty formula means
10 for the existence of a distant signal marketplace?

11 A. So the royalty formula creates this
12 divergence from the ability to have an actual
13 marketplace, it is placed by statute. So what we
14 have to do, the nature of the challenge to the
15 problem at hand is can and is there information from
16 this system that can be used to actually derive what
17 that actual marketplace would look like, given the
18 institutional features of the statutory formula.

19 Q. Dr. Johnson, let's now move into your
20 second module, which is about your economic analysis
21 of the royalty allocation.

22 This slide that you prepared here reads
23 "process of developing econometric model." And
24 before we get started on what is shown, can you give
25 us a simple explanation as to what econometric

1 analysis is?

2 A. Yes. Econometrics is an actual
3 subdiscipline in the field of economics. There are
4 journals, there is a body of research. My
5 specialization at MIT was in the field of
6 econometrics. I took general exams. I wrote a
7 thesis with econometric issues in it.

8 The idea of econometrics is it is the
9 branch of economics where we take economic theory,
10 our knowledge of how markets work, and we combine it
11 with rich data sets and particularly statistic
12 methodologies and tools that basically answer
13 applied questions.

14 This is the work horse branch of
15 economics. And in today's day and age, it is the
16 work horse branch of most statistical analysis.

17 Q. And what is the difference between
18 econometrics and statistics?

19 A. Well, statistics tends to be more
20 mechanical. Analyses where people simply cite
21 numbers without an economic foundation, analyses
22 where people simply say well, this is a statistical
23 property but don't really tie it to the intuition in
24 the economic meaning.

25 Econometrics is the power of the science

1 of economics behind it, understanding how markets
2 work to be tied to the data so that we can figure
3 out what is meaningful and what is not and how do we
4 get to precise answers to our questions.

5 MR. DOVE: Your Honors, at this point,
6 maybe I should have done this earlier, but we have
7 gone through Dr. Johnson's qualifications and some
8 initial background about his analysis, but before we
9 actually get into the specifics of his analysis
10 here, I would like to proffer Dr. Johnson as an
11 expert in economics and econometrics.

12 CHIEF JUDGE SHAW: Is there any
13 objection?

14 MR. MacLEAN: No objection.

15 CHIEF JUDGE SHAW: Hearing none, the
16 witness is so received.

17 BY MR. DOVE:

18 Q. Dr. Johnson, let's now turn to the
19 analysis you conducted in this case.

20 Can you describe the process that you
21 went through?

22 A. Yes. So the process -- the phrase I used
23 in my report is that building an econometric model
24 is an iterative process. So this is from one
25 treatise, the American Bar Association Econometrics

1 Handbook, but you could find something similar in
2 just about any textbook.

3 Essentially the way the process works is
4 we have to begin with articulating a specific
5 question. If we don't frame a question properly, it
6 is hard to know what the answer we're going to get
7 at the end of a process.

8 So we begin by articulating the question.
9 Then we consider the underlying economics as it
10 applies. A critical next step is to collect
11 relevant and useful data. Data doesn't come ready
12 to use, especially not complicated data sets.

13 It is often surprising to people but some
14 of the most -- the longest part of most empirical
15 projects is the collection and building of the data
16 set. Thereafter, after you have credible data, you
17 formulate and estimate a model. You interpret those
18 results. And in the course of interpreting those
19 results, you may continue to formulate your model.

20 Part of that is also part of the
21 iterative process. At the end of the day you
22 present your results in a way that points to the
23 salient features of the analysis, those things that
24 you have determined are important with respect to
25 both the relative sensitivity of the results and the

1 key question you're trying to address.

2 Again, this is a textbook treatment.

3 This is broadly the process, but in the real world
4 research is complicated and tricky. There are a
5 number of false starts. There are times where you
6 think something is going to work and it doesn't.
7 That's all part of the process.

8 JUDGE STRICKLER: Dr. Johnson, I have a
9 question for you.

10 Is within any of these particular boxes
11 or more than one of these boxes on this
12 demonstrative the process of identifying a
13 hypothesis or a theory -- I will let you answer
14 either way -- a hypothesis or a theory as to
15 causation with regard to the issue at hand? Let me
16 just leave it right there.

17 THE WITNESS: Yes, I think it is in
18 multiple places. It is partly under considering the
19 underlying economics, partly under formulating and
20 estimating the model, and it is partly under
21 interpreting the results.

22 There are times where we may think our
23 theory is solid or we may think that our approach is
24 solid, but we see something in our analysis that
25 tells us: Oh, that might not quite be right. So I

1 think the focus on causation is kind of a constant
2 focus of this, but those are the three particular
3 boxes where I would say that comes into play.

4 JUDGE STRICKLER: Thank you.

5 BY MR. DOVE:

6 Q. Dr. Johnson, how does the process that
7 you just described compare with the standard process
8 that economists go through to answer a question
9 using regression analysis of data?

10 A. I think it is a very standard process. I
11 think this is one professional econometricians that
12 actually do empirical work do. That said, as I
13 said, research is not linear.

14 If it was as simple as I could specify a
15 model, run one regression, and at the end of the day
16 say there's my answer, there wouldn't really be any
17 need for professional econometricians.

18 The reality is what really good
19 econometrics is about is the ability to answer a
20 question and to really be able to tell your
21 audience, here's what matters. Here are the things
22 that are really driving these results. Here are the
23 things that I think are cautionary. Here are the
24 things that I think are potentially the causes.

25 But really good work requires a deep dive

1 to understand what it is that is going on under the
2 surface. I kind of liken it to being a mechanic
3 with a car. I want to open the hood and I want to
4 understand what's going on.

5 And that's really the hallmark of someone
6 that does careful, thoughtful, econometric work.

7 Q. In your written testimony, how did you
8 describe the process of constructing an econometric
9 model?

10 A. Well, in my testimony I said I used this
11 word iterative process. The goal of the process is
12 involving and thinking about what are the key
13 issues, how can you get the best model, what is the
14 appropriate testing, what are the alternative
15 specifications.

16 You want something that's reliable and
17 informative for answering the question of interest.
18 It is a virtue, though, to know that you understand
19 what are the key factors that drive your results.

20 We can't be myopic. We have to get our
21 hands dirty. We have to understand what's going on
22 that we can ultimately as econometricians translate
23 for sophisticated audiences that aren't specialists
24 in statistics and econometrics what does this all
25 mean.

1 JUDGE STRICKLER: Dr. Johnson, in that
2 sentence that you just quoted from your written
3 direct testimony, you referred to the designing of
4 the model and you say it can be an iterative
5 process.

6 Is it always an iterative process?

7 THE WITNESS: I think it is always an
8 iterative process. I cannot think of a single time
9 in my 25-year career where a model came to me from
10 on high and I said we will push a button and that
11 was it.

12 So I think I could have even been more
13 forceful. It is an iterative process.

14 JUDGE STRICKLER: Thank you.

15 BY MR. DOVE:

16 Q. Dr. Johnson, what was your approach in
17 this proceeding for getting to the ultimate
18 conclusion, getting to the answer you were trying --
19 that you ultimately did?

20 A. Well, the starting point, you know,
21 having not testified before in a Copyright Royalty
22 arbitration panel, the starting point coming to this
23 new was to look at the prior work, particularly
24 Professor Crawford's Waldfogel-type regression model
25 that was adopted in the prior proceeding.

1 The Judges found it relevant and useful.
2 However, I did not, and my assignment was not to
3 just simply blindly accept Dr. Crawford's work, but
4 to put it to the test, understand what it did,
5 understand how it worked, and then build that model
6 and determine whether it could apply here.

7 So what that required was the collection,
8 compiling, and testing of relevant data sets. Now,
9 again, I did not testify in the prior proceeding. I
10 did not have the benefit of any of Dr. Crawford's
11 prior data or his programs. I did not have any of
12 that information.

13 So my team and I had to take Dr.
14 Crawford's report and Dr. Bennett's report, build
15 the data from scratch, and try to replicate Dr.
16 Crawford's analysis. And that was a large focus and
17 that was the very first assignment I gave my team
18 with respect to this engagement.

19 At the same time, since I am going to be
20 offering an econometric model, I needed to
21 understand the distant signal marketplace. What
22 happened between the prior proceeding and this one
23 which was potentially important or could affect the
24 applicability of an econometric model?

25 Now, the last part -- sorry.

1 JUDGE STRICKLER: Sorry, please go ahead.
2 I didn't want to cut you off.

3 THE WITNESS: There is one more, I'm
4 sorry, Your Honor, just let me finish.

5 Part of this assignment was to fully
6 assess Professor Crawford's model and improve it if
7 possible. I looked closely at everything in his
8 model to understand what it seemed to be doing, what
9 was the purpose, did it have an economic purpose,
10 did it have a statistical purpose.

11 And I offered improvements where I
12 thought that was helpful.

13 Your Honor, let me answer your question.

14 JUDGE STRICKLER: Yes, thank you, Dr.
15 Johnson.

16 I asked you before about whether you were
17 privy to material from the satellite proceeding in
18 2010-'13. You gave me an answer to that question.

19 Were you aware that there was a discovery
20 dispute in the 2010-'13 proceeding that related to
21 assertions by the Settling Devotional Claimants that
22 Dr. Crawford had engaged in multiple -- I don't want
23 to use the word multiple -- a number of regression
24 analyses that had not been disclosed previously in
25 the cable proceeding or up to that point in the

1 satellite proceeding?

2 THE WITNESS: I was aware of that from
3 reading the decision. And I had been informed of
4 that.

5 I will say and I also had read Dr.
6 Erdem's report in the prior proceedings. I will say
7 on its surface, the idea that someone ran multiple
8 regressions as part of an econometric process did
9 not bother me on its face, but part of what my
10 assignment was here was, well, test it. Can you
11 figure out whether you think this is a good model
12 here?

13 And, you know, I will explain a little
14 bit more some of the testing I did that actually
15 breaks the link from the prior proceeding to this
16 one, such that I don't have any concerns about what
17 Dr. Crawford did because I can break the link
18 statistically. But, yes, I was aware, and I came to
19 the table at least understanding that.

20 But I will talk about this more, those
21 are very, very serious allegations. And just on its
22 surface, the idea that someone ran multiple
23 regressions, that surely wouldn't have concerned me
24 as an econometrician.

25 JUDGE STRICKLER: Did you think that your

1 analysis in this case would have benefitted by
2 knowing whatever -- about the details of whatever it
3 was that Dr. Crawford had done in the 2013 period?

4 THE WITNESS: Well, part of what you will
5 see in my turnover is my team had to go and test
6 this model really hard. We looked at a lot of
7 things. Could I have built off of something if I
8 had some of it? Perhaps. But the goal was for me
9 to independently assess everything.

10 So at the end of the day, I did a form of
11 what I will call a specification test, whereby
12 running Dr. Crawford's model and replicating it in
13 the 2014 to 2017 data, I have broken the link from
14 anything Dr. Crawford did before.

15 But I also, as opposed to simply taking
16 at its face the purpose of each variable, I looked
17 into that quite detailed to see why is a variable
18 there, what is it doing?

19 There's a lot of things about Dr.
20 Crawford's model that make a lot of sense that are
21 quite reasonable to an econometrician. So obviously
22 I can't assess what it is that he ran that I didn't
23 see, but I can assess the model on its face, both by
24 testing it in a new pristine data set here, but also
25 by then doing the kind of kicking the tires I did in

1 this case to understand what it is that drives that
2 model.

3 JUDGE RUWE: I have a question. Does the
4 lack of awareness of various steps in building a
5 model or variations on a model diminish your
6 ability -- diminish your role in the iterative
7 process?

8 What is -- you said that you've -- sorry,
9 I am just looking for the term that you used -- I
10 thought you -- when you have a break from the
11 Crawford Model, you have tested it but your lack of
12 awareness of possible steps in the Crawford Model,
13 does that negatively impact the iterative process
14 that you're undergoing?

15 THE WITNESS: Once I have done the
16 specification test, the test that says I take
17 Crawford's model and I run it in the new data set
18 for 2014 to 2017, I have broken any link from
19 anything Dr. Crawford did before.

20 That is the test an economist does to see
21 if something is overfit, if something has been data
22 mined. So the fact that I can run the model, I have
23 now broken the link. But also, I didn't just change
24 take the model at face value, sir. I did lots of
25 testing of the model, which now I am being critiqued

1 for by the Joint Devotional Claimants to make sure I
2 understood.

3 So when I came here today to testify for
4 you, I can tell you exactly what are the levers that
5 drive the results. I can tell you exactly what it
6 is about my model, what it is that changes the
7 royalties and by how much, that's what I think is
8 most useful to you, hopefully, as the panel, to
9 understand what the strengths and weaknesses of the
10 model are.

11 JUDGE STRICKLER: A follow-up question,
12 Dr. Johnson.

13 If you did have before you completed all
14 your written testimonies material that was created
15 by Dr. Crawford in creating his model, would you
16 have reviewed that even though you were going to do
17 your own independent specification testing?

18 THE WITNESS: I mean, I might have. It
19 would be interesting to sort of see, I guess, but
20 ultimately by doing my own independent testing,
21 that's what I would have weighted but, again, part
22 of what I think was definitive for me is simply that
23 I can run the test on the new data and break the
24 linkage.

25 JUDGE RUWE: If you might have done it,

1 what would have been the benefit of reviewing that?

2 THE WITNESS: Well, obviously you're
3 asking me questions about what Dr. Crawford did.

4 JUDGE RUWE: I am talking about the
5 process, honestly. And there's this other data you
6 might have looked at it. What benefit would you
7 have -- and this isn't -- this is divorced from --
8 this is about the process, not about the actual
9 analysis done.

10 THE WITNESS: Well, you're asking me
11 questions about whether or not I assessed whether
12 Dr. Crawford data mined. I am taking a model of
13 royalties and testing it in 2014 to 2017 with a
14 series of concepts. What Dr. Crawford might have
15 done in the prior proceeding with respect to details
16 of other regressions, it is possible I would have
17 looked at it if they were provided to me but I don't
18 have any access to anything from the prior
19 proceeding.

20 JUDGE RUWE: And what benefit, if you
21 might have looked at it, why? What benefit might
22 you have revealed as a matter of process?

23 THE WITNESS: I think as a matter of
24 process, given there are questions that you are
25 asking about the idea that there was data mining,

1 maybe seeing it would have informed some of the
2 things that he is being accused of. But at the end
3 of the day, beyond that I don't see any reason I
4 would have needed that.

5 JUDGE RUWE: Okay. As a matter of
6 process, absent an accusation of any data mining,
7 there is existing modeling, there's data that you
8 are aware of that you say you might have looked at.

9 What benefit would you have realized from
10 possibly looking at that?

11 THE WITNESS: Again, I don't think
12 there's much. As I said, I could maybe more
13 thoroughly answer your question about the
14 allegations of data mining but, again, I am
15 performing -- I mean, part of the goal was to
16 perform an independent analysis of this model and
17 with the data for the period that's relevant here.
18 So beyond that, I am not sure there is much benefit.

19 JUDGE RUWE: All right, thanks.

20 JUDGE STRICKLER: Dr. Johnson, I want to
21 make sure we have definitions for the various
22 aspects of nomenclature.

23 You used a phrase "data mining." Can you
24 define what you mean by data mining and can you
25 compare and contrast it to the concept which you may

1 be familiar with, the concept of a specification
2 search?

3 THE WITNESS: Sure. So I think that
4 people use the terms a little bit interchangeably.
5 The idea that -- both of them are highly pejorative
6 terms to an econometrician, right? What data mining
7 and specification search both mean is the idea that
8 you looked at the data and so with respect to data
9 mining specifically, you're looking at the data in a
10 way that you are repeatedly trying to just fit the
11 data as precisely as possible.

12 You try to include different combinations
13 of variables so that you get a very good fit. In
14 other words, you can explain the data you have very
15 well, but usually that kind of data fails when you
16 take it out of sample to a different data set
17 because you have so closely matched what the pattern
18 of the data is.

19 Model search or model specification, at
20 least in my mind, is more pejorative. Model search
21 means that you are essentially picking a model on
22 the basis of getting the result you want for your
23 testimony or for your answer. We see this all the
24 time, these types of things in academics, people
25 accuse people of model searching when they are

1 trying to get certain results.

2 That's what the difference is
3 essentially. One is about picking the outcome; one
4 is about closely fitting the data in my mind.

5 JUDGE STRICKLER: Thank you.

6 JUDGE RUWE: Would looking more closely
7 at the Crawford modeling have revealed specification
8 search? Could it have, rather?

9 THE WITNESS: Look, without seeing it, I
10 don't know. I think that might be hard to detect.
11 Again, I don't know. But --

12 JUDGE RUWE: Could it -- could it have?

13 THE WITNESS: It is possible. It is
14 possible.

15 JUDGE RUWE: Thank you.

16 JUDGE STRICKLER: Am I understanding your
17 testimony that whether Dr. Crawford engaged in data
18 mining or specification searches, to your mind, is
19 irrelevant because you were going to do your own and
20 did, in fact, do your own independent testing of the
21 model and changed it or let it remain as it was
22 depending on the outcome of your own analysis?

23 THE WITNESS: Yes, that is correct, sir.

24 JUDGE STRICKLER: Thank you.

25 BY MR. DOVE:

1 Q. Dr. Johnson, picking up where we left
2 off, why did you start by looking at materials from
3 the last proceeding? What was -- what was your
4 reason for doing that?

5 A. Well, I at least wanted to understand the
6 context the best I could. As I said, I am not -- I
7 was not in the prior proceeding, so all I have is
8 the benefit of what I can read Dr. Crawford wrote,
9 what I can read Dr. Bennett wrote, what the other
10 experts wrote and the decision. I don't have that
11 data, I don't have access to those things. I am not
12 a part of the prior proceeding.

13 But I wanted to understand what the
14 basics are behind the proceeding, what the basics of
15 the debate between the experts was, what had
16 essentially gone on in the past, and particularly
17 what was the nature of the model that had been
18 adopted by the panel.

19 Q. And who supported you in preparing your
20 testimony?

21 A. Well I have a team at Edgeworth Economics
22 of economists, several economists, Mr. Michael
23 Kheyfets, Dr. Stephanie Cheng, Dr. David Colino, and
24 several others, who support my work on my testimony
25 and helped me with all sorts of issues related to

1 the development of the analysis and the testimony.

2 Q. And is having a team like that, is that
3 standard practice in econometrics?

4 A. Yes, it is.

5 Q. And what role did you play in preparing
6 your testimony?

7 A. Well, I'm the principal investigator. I
8 set the direction for the team. I oversee the
9 entire project. Ultimately I am the one offering
10 expert testimony, so I have to conduct the analysis
11 in a way that I can credibly and affirmatively
12 testify to the panel this is my sworn testimony,
13 that I understand what is going on, that I
14 understand the results and that I can credibly
15 explain what do I think is the drivers of this
16 particular econometric model.

17 Q. And what was the extent to which you were
18 involved in the creation of every document and piece
19 of work product during the research process?

20 A. It is just -- I wasn't. Over an
21 engagement of this length of time and the various
22 pieces, there are clearly things that I delegate to
23 my team. There are parts where I am setting a
24 course in a very active way. There are parts where
25 I am much less involved as the team is doing certain

1 things that they are trained to do.

2 But overall by the end of the entire
3 process where I was writing an expert report,
4 preparing to testify, figuring out what it is that
5 the econometric model means, I am responsible for
6 everything that occurs on my team during the course
7 of the engagement.

8 Q. Dr. Johnson, let's begin discussing the
9 first step in your research process.

10 What was the question you articulated to
11 guide your research in this project?

12 A. Well, the question that I started with
13 was determining the allocation of the shares of the
14 cable royalty funds amongst the six claimant groups,
15 what I understand the panel's responsibility to be.

16 I also understood that this proceeding by
17 statute, precedent, and consensus is to allocate a
18 dollar quantity of royalties. What that means to me
19 is that the panel does need an answer. They need
20 some guidance. My goal here is to build the best
21 possible econometric model, to the extent that is
22 the appropriate method, so that we have some
23 guidance for the panel.

24 Again, I will try to be as
25 straightforward about the strengths and weaknesses

1 of the methodologies, but my understanding is that
2 we can't throw our hands in the air and say nothing
3 is good enough, we actually have to provide
4 something to help the panel allocate royalties.

5 JUDGE STRICKLER: Dr. Johnson, I just
6 wanted to go back a second to your discussion, your
7 brief discussion in your testimony about the team
8 and the work that the team did at Edgeworth in
9 connection with this project, but my questions may
10 be more general as to how you handle teams at
11 Edgeworth.

12 When you assemble the team in this
13 particular case -- well, let me back up and not
14 assume anything. Did you assemble the team?

15 THE WITNESS: Yes, well I assembled the
16 senior members of the team. I am not going to tell
17 you I picked every researcher at the lowest level
18 but I assemble the senior members of the team and we
19 talk about staffing, who is available, who the
20 people are at a high level, yes.

21 JUDGE STRICKLER: You mentioned several
22 people a moment ago. Did those people constitute
23 the senior level of the team?

24 THE WITNESS: Yes, they did.

25 JUDGE STRICKLER: Did you, in this

1 particular case, tell these senior members of the
2 team what their tasks, individual tasks were in
3 either broad or specific form?

4 THE WITNESS: In broad form, absolutely.
5 I met with the team, particularly Mr. Kheyfets, who
6 was the main senior -- second senior as we call
7 them. And I tasked him and Dr. Colino specifically
8 with, based on my initial reading of Dr. Crawford's
9 report and the prior decision, that the first thing
10 I needed was for them to replicate Dr. Crawford's
11 model with the 2014 to 2017 data, which would
12 require building the data but then thereafter,
13 obviously, with an eye towards what the ultimate
14 goal was, was could I build an econometric model to
15 allocate royalties?

16 JUDGE STRICKLER: Did you indicate to
17 these senior members of the team how and how often
18 they should get back to you with information about
19 how the process was ongoing?

20 THE WITNESS: Well, Mr. Kheyfets and I
21 talk every day. His office is next door. So I
22 don't have to tell them like check in if you need
23 to. I literally talk to these people every single
24 day. Their office is right next door. We work on a
25 number of matters.

1 So we worked together, Mr. Kheyfets and I
2 worked together for, you know, 12, 13 years. So we
3 kind of know that.

4 So I don't think there is explicit
5 directions. It is just, you know, I will ask you
6 questions, we will talk when necessary, obviously
7 you will see as I describe, when I describe the full
8 process as I am getting to the point in about
9 February of 2022 where I am starting to really focus
10 on the building of the model, obviously I am talking
11 to him a lot more about this than before that.

12 JUDGE RUWE: You have addressed how
13 frequently you consulted Mr. Kheyfets. What about
14 the other senior members of the team with regard to
15 Judge Strickler's question?

16 THE WITNESS: I would have regularly
17 talked to Mr. Kheyfets, Dr. Colino, the most. I
18 would have occasionally talked to Dr. Cheng and
19 Ms. Yan.

20 JUDGE RUWE: Can you give any definition
21 to "regularly" and "occasionally"?

22 THE WITNESS: Regularly with Dr. Colino
23 and Mr. Kheyfets was virtually multiple times a
24 week. The others I would say in the beginning
25 perhaps monthly, and then once February happened on

1 a very regular basis, weekly, because I am actually
2 at the point from February to July where I am
3 actually working regularly on the analysis.

4 JUDGE RUWE: Any other members of the
5 senior team?

6 THE WITNESS: The only other member that
7 I think of is Ms. Zong, who I really was only
8 working with more towards the end of the report.
9 But other than that, the main people are
10 Mr. Kheyfets and Dr. Colino.

11 JUDGE RUWE: And where would she fit in
12 with that frequency?

13 THE WITNESS: She would be more on the
14 occasional month and then at the end a little bit
15 more weekly because we're getting the final report
16 together.

17 JUDGE RUWE: Thanks.

18 JUDGE STRICKLER: Dr. Johnson, did you
19 ever instruct any member of the senior team or
20 anyone else to not provide you with particular types
21 of information in connection with this project?

22 THE WITNESS: No.

23 JUDGE RUWE: Do you have any idea why
24 they might have?

25 THE WITNESS: I do. My understanding is

1 there was a simultaneous consulting assignment and
2 that they were also providing work to counsel on
3 things like settlement negotiations that I was not
4 supposed to be privy to.

5 But anything that I wanted from my
6 assignment or that I asked for, I was given. And
7 nobody was ever instructed to hide things. In fact,
8 I want to know what the strengths and weaknesses are
9 of my approach. I need to know that because I am
10 going to be questioned and I am going to have to
11 testify about it.

12 JUDGE RUWE: But you did then know that
13 there wasn't going to be provided -- that there was
14 material that affirmatively wasn't being provided to
15 you?

16 THE WITNESS: I knew that when counsel
17 had set up the matter they had said there was a
18 consulting assignment and a testifying assignment.
19 And the consulting assignment would not be provided
20 to me.

21 JUDGE RUWE: Thanks.

22 JUDGE STRICKLER: In the consulting
23 assignment you described it as related to settlement
24 negotiations. Did it relate to anything else?

25 THE WITNESS: Well, all I can tell you

1 is, you know, having seen the discovery now that had
2 been turned over afterwards, I obviously had not
3 seen before, the things I have seen in discovery
4 appear to be trying to explain what regression is
5 and sort of trying to explain as the process
6 different issues with respect to data, things like
7 that.

8 Obviously I can't speak to everything. I
9 know there were some e-mails I saw, again, after the
10 turnover, about questions that counsel had about
11 certain issues, things like that.

12 But beyond that, again, I wasn't a part
13 of that, so I can only speak from what I saw in the
14 discovery that we ultimately turned over in response
15 to the motion to compel.

16 JUDGE STRICKLER: Thank you, Dr. Johnson.
17 BY MR. DOVE:

18 Q. Dr. Johnson, let's move now to the second
19 step in the process. What was that again?

20 A. So if we can go to the next slide.

21 So the second step requires us to
22 consider the underlying economics. I think there
23 are two key issues here that need to be considered.

24 The first is the idea that there are no
25 direct transactions between buyers and sellers in

1 the distant signal marketplace, but the value of
2 programming can be inferred through the revealed
3 preference theory.

4 The second issue is that major industry
5 changes since the prior proceeding allow for
6 improvements to the previously-accepted
7 methodologies.

8 BY MR. DOVE:

9 Q. So let's drill down just a bit on each of
10 these elements.

11 You talked about the absence of a
12 marketplace where direct transactions between cable
13 companies and distant channels occur. What's your
14 conception of how a marketplace like this would
15 look?

16 A. Okay. Well, if we were trying to
17 construct a hypothetical distant signal marketplace,
18 we go back to the seller/buyer paradigm. The seller
19 is the channel. The buyer is the cable company.
20 The product is programming. And there is some
21 negotiation which results in a hypothetical market
22 payment for that quantity of programming.

23 So that at a high level, that's what
24 we're trying to replicate, is what would ultimately
25 be paid for the content on those channels.

1 Q. And how do you actually use economics to
2 create a hypothetical marketplace like this?

3 A. Well, we can't observe the actual prices.
4 We can't observe because it doesn't exist. But we
5 can rely on a theory of observing how people behave
6 in light of the statutory formula. That theory is
7 called revealed preferences.

8 Q. And how commonly accepted is the concept
9 of revealed preferences in economics? And could you
10 also just describe what that is?

11 A. I will. It is a commonly accepted
12 practice. Economics theory of consumer behavior
13 largely built on this notion, it is sort of, I
14 believe I have a quote here back to Paul Samuelson
15 but the idea is that when we observe behavior, we
16 can determine something based on how people, the
17 choices they make.

18 And so although we have a regulated
19 environment we do have some level of knowledge of a
20 base fee obligation and we do observe which channels
21 the CSOs are actually carrying at each subscriber
22 group. So that combined, that allows us to reveal
23 the preferences such that we can derive a valuation
24 about or from those choices that are made.

25 Q. And can you give a real-world example of

1 how revealed preferences work?

2 A. Sure. Go to the next slide, please.

3 Let's talk hypothetically first before we get to the
4 CSO example. Let's say we're thinking about movie
5 theaters, and we've got "Ant-Man" and we've got "Top
6 Gun: Maverick," as showing at the movie theater.

7 You could look at data collected at a
8 movie theater over a weekend and see which movies
9 people chose to go to and have some revelation about
10 oh, people are preferring movie X to movie Y.

11 That's a very simple example.

12 We talked about revealed preference in
13 the context of bundles of goods, things that people
14 buy, choices people make all the time, but a movie
15 theater is sort of a simple one that you can look to
16 as a real-world example of revealed preference.

17 Q. And then how does revealed preference
18 apply to your hypothetical marketplace in this case?

19 A. Well, we are going to observe, even in
20 the face of the statutory formula, variation in
21 terms of revealed preferences with respect to what
22 gets chosen to be retransmitted.

23 So here is an example from one CSO, Time
24 Warner Cable Southeast. Time Warner Cable Southeast
25 makes decisions about which signals to distantly

1 retransmit, right?

2 There is one channel, WUNC-DT, Chapel
3 Hill, North Carolina, is a Public Television
4 station. And that particular channel is rebroadcast
5 to all the subscriber groups. The subscriber groups
6 are in yellow below. And each line is a rough
7 accounting of those seven subscriber groups.

8 That's about 76,000 subscribers,
9 including the most distantly or densely-populated
10 counties. There's another channel, WRDC-DT Durham,
11 North Carolina, that would also be distant to that
12 subscriber group. That particular channel carries
13 Sports, Commercial, Devotional, Program Supplier
14 content, and that is not carried to any subscribers.

15 Q. And what are the revealed preference
16 implications of this example?

17 A. Well, in this example, there's a revealed
18 preference to carry the content on WUNC-DT to the
19 subscriber groups but not to WRDC-DT but there's
20 another channel, and so we can go to the next slide.

21 We also have a channel that is carried by
22 some of the subscriber groups but not all of them.
23 And that is WTVD-DT, Durham, North Carolina. So
24 this channel carries Big 3, carries Sports, carries
25 Commercial, carries Devotional, carries the Program

1 Suppliers to one of those subscriber groups. That's
2 about 400 subscribers in a more rural county.

3 What you can see is the mix of which
4 channels are carried to which subscriber groups is a
5 form of variation that will allow us to see how
6 preferences evolve for different sets of CSOs.

7 JUDGE STRICKLER: Dr. Johnson, in your
8 analysis, and this is getting to a point made by the
9 Settling Devotional Claimants' expert witnesses, did
10 you notice that they didn't use, I don't think, this
11 phrase in this context, but I will use it, the
12 revealed preference of the CSOs with regard to
13 subscriber groups was to simply retransmit distantly
14 a signal that was close, either contiguous or very
15 close geographically to a local -- to the local
16 signal itself, but would be classified, as I say, as
17 distant under the statutory term.

18 Did you -- did you see that as a factual
19 matter in your analysis?

20 THE WITNESS: I don't recall seeing that
21 specifically. I did read that claim. I didn't see
22 any data analysis of that, but the nice part of the
23 regression is the regression method will account for
24 that.

25 So whatever we actually observe, we can

1 actually see. And if they are making those choices
2 for some and not others, that's a form of variation
3 that the model can account for. So --

4 JUDGE STRICKLER: If I understand you,
5 you are saying the variation -- the variations of
6 which you speak would not be inconsistent with the
7 fact that the distant group that received a signal
8 happened to be contiguous or close to the local
9 station?

10 THE WITNESS: It would not.

11 JUDGE STRICKLER: Thank you.

12 BY MR. DOVE:

13 Q. So, Dr. Johnson, you know, you just
14 described one example of revealed preference at
15 play. How do you apply this to the entire
16 hypothetical marketplace?

17 A. Well, the power of the methodology here
18 is that we have data across all of the CSOs and all
19 of the subscriber groups for the period. And we can
20 live off of the variation that we see across
21 subscriber groups, both above and below the minimum
22 fee by looking at their base royalty obligation
23 absent the minimum fee and relating that to the
24 minutes of different types of copyright holders
25 programming.

1 Q. Dr. Johnson, what other economic
2 conditions did you observe underlying the question
3 at hand?

4 A. Well, there were other factors, and I
5 think the one that didn't get a lot of discussion is
6 the WGN conversion in 2015. During this time
7 period, there was a conversion where in 2014 WGN was
8 carried as an over-the-air broadcast station, and
9 therefore its content was distant.

10 However, in 2015, a conversion occurred,
11 such that WGN was converting to become a cable
12 television station. So think of it as moving from
13 an over-the-air in my initial exhibit to a cable
14 television station, such that that content is no
15 longer distant for the purposes of this proceeding.

16 The consequences of that was that there
17 were several claimant groups for whom both the
18 amount of programming and the composition changed,
19 particularly the Joint Sports Claimants. There were
20 others who also had a decline, Devotional,
21 Commercial, Program Suppliers.

22 Now another issue was I also observed in
23 the data that the amount of PTV programming goes up
24 during this period. And there are two parts to
25 that.

1 There's one that simply, since the amount
2 of programming that was carried distantly on the WGN
3 disappeared, PTV becomes a larger share, but then
4 also later in the period there's the expiration of
5 these royalty exemptions such that certain signals
6 are now the opposite of WGN, certain PTV stations
7 are now qualified, they are no longer exempt such
8 that they now count towards the pool of distant
9 signals.

10 Q. And when did that, I believe Judge
11 Strickler asked yesterday, when did that process or
12 that reclassification of Public Television, some
13 Public Television stations occur?

14 A. Well, it is a little hard to pin down a
15 precise date, but where you actually see it in the
16 data is the beginning of the second period of 2016.
17 I will show that in a chart in a few seconds here.
18 That is sort of where the timing is of that change.

19 Q. Dr. Johnson --

20 JUDGE STRICKLER: Before you get into
21 that, this is a list of key takeaways. One thing I
22 don't see on this list is whether there were any
23 changes in the number of cable systems that were
24 only paying the minimum fee or the number of cable
25 systems that were not -- that were using less than

1 one distant signal equivalent, what Professor Marx
2 referred to in her testimony as excess capacity.

3 Did you consider those key takeaways?

4 THE WITNESS: Absolutely. In fact, my
5 model directly accounts that. I have a fairly
6 significant section in my direct report on the
7 minimum fee issue where I ran sensitivities on that
8 issue, and so I absolutely did. And I will describe
9 that in a lot of detail shortly, Your Honor.

10 JUDGE STRICKLER: So it would be fair to
11 add those to your list that you have here in this
12 demonstrative as key takeaways?

13 THE WITNESS: Yes, this -- this
14 particular -- sorry, yes. The intent of this
15 demonstrative for me was to sort of key up things I
16 can see in the data directly.

17 But absolutely, the minimum fee issue is
18 essentially the issue that we do need to address to
19 see whether or not this model could continue to be
20 applied in the 2014 to 2017 period. So it is
21 absolutely important.

22 JUDGE STRICKLER: I take it you will be
23 discussing the minimum fees in more detail in your
24 testimony as we go forward?

25 THE WITNESS: Yes, I will be, sir.

1 JUDGE STRICKLER: Okay. Any other
2 questions I have about that, I'll await that
3 testimony. Thank you, Dr. Johnson.

4 THE WITNESS: Thank you.

5 CHIEF JUDGE SHAW: Mr. Dove, if we're
6 going to have a morning break, we need to take it
7 fairly soon because lunch will be coming up before
8 1. You can definitely ask your next question. I
9 just wanted to alert you to that and let you choose
10 the time.

11 MR. DOVE: Your Honors, I actually think
12 now would be as good a time to take a break as any,
13 if that works for Your Honors.

14 CHIEF JUDGE SHAW: That's fine. Then
15 let's come back around -- well, a little after
16 11:30, 11:31, I guess, technically.

17 (A recess was taken at 11:21 a.m., after
18 which the proceedings resumed at 11:31 a.m.)

19 CHIEF JUDGE SHAW: Welcome back,
20 everyone, from our break.

21 (Recording in progress.)

22 CHIEF JUDGE SHAW: Welcome back. I don't
23 see Dr. Johnson on the screen, but I'm sure he's
24 there. The lineup seems to have changed a little
25 bit over the break.

1 THE WITNESS: I'm here.

2 CHIEF JUDGE SHAW: Okay. Very good. A
3 little bit of an echo there.

4 THE WITNESS: Test.

5 CHIEF JUDGE SHAW: I know you were doing
6 some sound checks and so forth during the break.

7 MR. SACK: You can only have one
8 microphone on in any room at any time. So only one
9 microphone can be on, Dr. Johnson. There's two
10 laptops in that room. The other microphone needs to
11 have its mic switched off.

12 MR. TOTH: I think we have it fixed now.

13 MR. DOVE: Do we have it fixed? Can you
14 hear me?

15 MR. TOTH: Yes.

16 THE WITNESS: And can you hear me?

17 MR. TOTH: Yes, sir.

18 MR. DOVE: May we continue, Your Honor?

19 CHIEF JUDGE SHAW: Absolutely. Thank you
20 very much.

21 BY MR. DOVE:

22 Q. Dr. Johnson, I just want to tie the loop
23 on the discussion about WGN. If you could just
24 explain what you mean by WGN converting to a cable
25 network a little bit more specifically, what does

1 that entail?

2 A. Well, my understanding is, in 2015, WGN
3 went from being broadcast over the air such that it
4 was able to be carried or qualified as distantly
5 transmitted content for certain subscriber groups,
6 that it then switched to what is a national cable
7 channel, such that during this transition and then
8 ultimately it no longer -- any of the content would
9 be relevant as distant.

10 It's a change from that box, the prior
11 slide at the top, I talked about the two types of
12 channels, goes from being an OTA channel to a
13 national cable channel. And, thus, the content is
14 no longer eligible for distant signal royalties.

15 Q. And can you walk us in some more detail
16 through your analysis of the WGN conversion?

17 A. Okay. So this is data directly on the
18 trends year over year. What I'm showing here are
19 the top ten distant signals by subscribers. So I
20 want to be clear what that means. This is what is
21 the reach of these channels on a -- you know, total
22 subscribers that receive this particular signal
23 distantly.

24 So, in 2014, you can see that the top
25 ten, WGN-DT is the largest, has the broadest reach

1 of any of the distant signals by a very large
2 amount, 41,172,570 versus the next closest, a CBC
3 channel with 941,000, right?

4 So we can see, and I've highlighted that
5 in the tannish here, that's WGN in 2014. We can see
6 the effect of the transition. In 2015, we see the
7 number of distant subscribers. Their reach is down
8 to 7.7 million distant. And then by 2016 and 2017,
9 it's no longer in the top ten, because it's
10 basically, other than a straight channel, not
11 carried distantly thereafter.

12 The other thing you can see in this chart
13 is what happened with respect to what filled the
14 void. What you suddenly see now is in 2016, 2017,
15 amongst the top ten, you see a far larger volume of
16 Public Television channels. And so this directly
17 sort of shows you that change in WGN and then that
18 2016 period with the change in the exemption status
19 for the Public Television channels.

20 Q. And what does the gray row at the bottom
21 where it says "median subscribers per distant
22 station" show?

23 A. Okay.

24 Q. As compared to the top ten list?

25 A. So what I wanted to show with this row is

1 just give you some sense that for the majority, the
2 overall majority of stations, there are relatively
3 few subscribers that they reach. The median is the
4 one in the middle.

5 So if I rank-ordered from the most to the
6 least and took the one that was right in the middle,
7 I would find that that number is 2,895. So what
8 that tells us is we have a very long tail, right?
9 We have a couple of really big stations at the top
10 and then a really, really long distribution with
11 very few subscribers that they reach for the bottom.

12 Q. And then how about the gray row at the
13 very bottom where it says "total number of distant
14 broadcast signals," what is that showing?

15 A. Well, that's a slightly different
16 phenomenon. That's just is a raw count of how many
17 signals are carried distantly year over year. What
18 you can see from that is in 2014, where that number
19 is 1,293, that number grows by 2017 to 1,570. So
20 the total number of distant signals that we pick up
21 in the data set actually has increased during this
22 four-year period.

23 JUDGE STRICKLER: And to be clear, when
24 you say distant signals, you're talking about actual
25 signals, rather than digital signal equivalents; is

1 that right?

2 THE WITNESS: That's correct, yes.

3 JUDGE STRICKLER: Thank you.

4 BY MR. DOVE:

5 Q. And I believe you prepared another slide
6 here. What does this slide show?

7 A. Okay. So what I wanted to show with
8 this -- again, to be clear what this is, is this is
9 just trying to pick up what's happening to the
10 overall reach of these distant signals. These are
11 total royalty generating distantly retransmitted
12 subscriber minutes. So let's be clear again, this
13 is number of minutes that reaches subscribers.

14 In 2014, before the WGN conversion, we're
15 at about 17 trillion distantly retransmitted
16 subscriber minutes. By the end of the period in
17 2017, we're now at about 8 trillion distant
18 subscriber minutes.

19 So we have the overall volume of
20 programming -- of programming that reaches
21 subscribers has shrunk as a result of the WGN
22 conversion.

23 Q. And why did you choose to weigh by
24 subscribers?

25 A. Well, for this particular analysis, what

1 I'm trying to do is show how the reach has changed
2 for the stations. When I run the regression
3 analyses, I will actually use subscribers directly
4 as a control in the regression.

5 Q. Did you study, Dr. Johnson, how these
6 changes in the industry affected the distant
7 programming for each claimant group in this
8 proceeding?

9 A. I did.

10 Q. And what does this slide show about the
11 effects on each distant -- or, excuse me, on each
12 claimant group? Sorry.

13 A. So what I was able to do is just take, at
14 a high level, the percentages of subscriber minutes
15 from the 2010 to 2014 period, the prior proceeding,
16 and you'll see this is basically a chart that out of
17 100 percent, if you sort of do the entire volume --
18 the entire universe of the distantly retransmitted
19 subscriber minutes, how does this change.

20 And so what you'll see is in 2014 -- I'm
21 sorry, the rainbow colors each represent a different
22 claimant group, and the other represents what we'll
23 call the benchmark, which I'll talk about more in a
24 bit.

25 What I took from this chart is that in

1 the 2014 period, we don't -- you know, you don't see
2 much change in terms of the distribution of minutes.
3 You see 2014 does look a lot like 2013 and before.
4 But then you see this part where the little blue box
5 is, a shift is starting, and you see how there's
6 this big shift and there's some things going on on
7 the surface, but basically this is the WGN
8 conversion, and that's sort of driving this big
9 change where you can see, for example, Public
10 Television as a share of all minutes is going up,
11 you can see where the Program Suppliers minutes are
12 going down. You can't tell very much because it's
13 so small, but you can see sports actually does go
14 down. But I'll show you some charts of that.

15 So when I'm approaching the problem
16 trying to understand what's going on, we talked
17 about the WGN conversion as important, this change
18 in trend, this that I see something going on the
19 minutes is what we're going to have to investigate
20 to see whether the model can accommodate this.

21 Q. And you mentioned the sports programming.
22 What happened to distant Joint Sports Claimant
23 programming over time?

24 A. Well, it declined. Again, these are all
25 on a subscriber minutes basis, but it declined

1 95 percent from 3.2 percent in 2014 to about
2 three-tenths of a percent by the end of the period
3 2017 period 2.

4 Q. And do you have another slide about sort
5 of the nature of that decline?

6 A. Yeah. What one of the things I was
7 curious about was what about the composition? And
8 what this chart shows is how did the composition of
9 programming change when WGN converted?

10 When WGN was a distant signal, you can
11 see in 2014 it's absolutely the case that Major
12 League Baseball, the NBA had the largest share of
13 the subscriber minutes that were sports content.
14 And then you can see some preseason, some NHL, some
15 NFL.

16 After the conversion, now the largest
17 reach was for NHL games, some non-World Cup soccer.
18 There was some NFL and MLB but much less on a
19 subscriber basis. And so you see this sort of
20 transition where not only does the number of
21 subscriber minutes decline but the composition has
22 changed, where NHL is now the most predominantly --
23 or that programming from the Joint Sports Claimants
24 that is reaching the most subscribers.

25 JUDGE STRICKLER: I have a question for

1 you being back to the previous slide, if we can get
2 that up, the one with the rainbow colors, as you
3 described them.

4 THE WITNESS: Yes.

5 JUDGE STRICKLER: Thank you. In the
6 little box to the right of the chart, you note that
7 Public Television share increased in terms of
8 subscriber minutes from 18 percent in 2014 to
9 66 percent in 2017.

10 Is it your understanding that the demand
11 of CSOs for program types is derived from the demand
12 of its subscribers?

13 THE WITNESS: That is the part of the
14 revealed preference model, yes.

15 JUDGE STRICKLER: So it's a derived
16 demand?

17 THE WITNESS: Yes.

18 JUDGE STRICKLER: So is it your
19 understanding that this evidence indicates that
20 there was a more than three-fold increase in the
21 demand of cable system subscribers for Public
22 Television between 2014 and 2017?

23 THE WITNESS: No, I think that would be a
24 misinterpretation of this. This is only a quantity
25 measure. This isn't what comes out of the actual

1 model with respect to when we actually try to
2 estimate the valuation. I'm going to show what the
3 valuation is that, in fact, Sports Claimants still
4 have the largest valuation by a factor of four.

5 But what does happen is there's an
6 expansion in multi-cast content, and there's a
7 change in the underlying composition of what's
8 compensable as a distant signal. And so those are
9 going to contribute to that.

10 But I don't think you can just look at
11 the increase in quantity alone. That's not what the
12 model is ultimately trying to pick up. It's trying
13 to pick up a change in value.

14 JUDGE STRICKLER: Thank you.

15 BY MR. DOVE:

16 Q. So if we could turn to a slide on the
17 Settling Devotional Claimants' subscriber minutes.
18 Dr. Johnson, what happened to the devotional
19 programming over time during this time period?

20 A. The Devotional Claimants during this time
21 period also decreased by a factor of 95 percent when
22 measured by subscriber minutes.

23 Q. How about the Commercial Television
24 programming over time?

25 A. There was a decline for Commercial

1 Television. It wasn't as stark as the others, but
2 it declined from about 5.9 percent to about
3 3.2 percent.

4 Q. And then how about the distant Program
5 Supplier programming, what happened to it?

6 A. Well, you see here, again, a fairly
7 significant decline, 62 percent in the beginning of
8 the period to about 16 percent by the end, post-WGN
9 conversion.

10 Q. And so we don't leave anybody out, how
11 about the Canadian Claimants' programming?

12 A. The Canadian Claimants' programming did
13 go up, 3.3 percent before, about 7.8 percent after.
14 Again, these are going to be largely a function of
15 once WGN is out, the composition of minutes changes,
16 and so that's what drives these. This is not about
17 Canadian content on WGN. There isn't Canadian
18 content on WGN.

19 Q. And, finally, Dr. Johnson, what happened
20 to Public Television programming over time?

21 A. Well, as I said, the Public Television
22 programming did go up, in the beginning of the
23 period about 18 percent of the total minutes, by the
24 end 67.2 percent. There's sort of two phenomenon at
25 work here, though.

1 So the increases in 2015, period 1,
2 period 2, beginning of 2016, this is mainly a
3 function of the fact that this overall pool of
4 minutes has shrunk, right? When WGN leaves, you
5 lose a large number of subscriber minutes.

6 Then there's the question, Judge
7 Strickler, you asked me this before, about the
8 timing of the exemption. The timing of the
9 exemption is between roughly -- and, again, it's a
10 little hard to get a precise date -- but between
11 period 1 2016 and period 2 2016, you see that
12 increase there. That's where now certain
13 multi-casts now are no longer exempt. They're
14 non-exempt, and that is largely responsible for this
15 increase in the last three periods.

16 JUDGE STRICKLER: Dr. Johnson, is the
17 flip between the signal being exempt or non-exempt
18 useful in trying to analogize to a market value?

19 THE WITNESS: I think it is. I mean, I
20 think it is actually -- I mean, look, the two
21 phenomenon that we're going to have to deal with,
22 with the model here is the WGN conversion on one
23 side, which is the flip minutes that are no longer
24 distant, and this new set where they now are
25 distant.

1 I think that's what the model is trying
2 to parse. And so to the extent that variation does
3 cause changes, I think it is meaningful, yes.

4 JUDGE STRICKLER: So if it had gone the
5 other way, if we had a historical situation where
6 the signal was non-exempt and therefore was distant,
7 and then it had switched over to exempt from the
8 statute in the other direction, we would see a drop
9 in the relative value of Public Television, if that
10 had occurred; is that correct?

11 THE WITNESS: We might see a drop if that
12 had occurred. It would depend on how the valuation
13 worked. In fact, as I will testify later, PTV's
14 value, despite the fact that there was this increase
15 in minutes, in the econometrics the value is roughly
16 the same between 2014 and 2017. This --

17 JUDGE STRICKLER: Okay. I guess my
18 question is ceteris paribus, all other things being
19 equal, if the statute had worked in the other
20 direction, we would have seen over time a decline in
21 the value of Public Television, according to your
22 model?

23 THE WITNESS: I think, all else equal,
24 assuming that the content composition did change in
25 some way, you could expect that. But, again, I'd

1 want to study it. I understand we're in a highly
2 stylized framework here.

3 JUDGE STRICKLER: Thank you.

4 BY MR. DOVE:

5 Q. Dr. Johnson, you described a third step
6 in developing an econometric model. You described
7 that third step as collecting relevant and useful
8 data.

9 At a very high level, what type of data
10 did you use for your regression?

11 A. Well, there are very detailed data sets
12 available. They are available of both royalty
13 payments and the carriage decisions that the various
14 CSOs make at the subscriber group level. There's
15 also data on programming minutes, both U.S. and
16 Canadian.

17 And so it's those data sets that have to
18 be found, collected, and assembled ultimately to put
19 together a data set that's appropriate for the
20 course or the purpose of doing the econometrics.

21 Q. How did you decide which particular data
22 sets you needed?

23 A. Well, as I said, we're new to the
24 proceeding and that I hadn't testified before, but
25 we did have Dr. Bennett's report, we did have

1 obviously access to counsel, we were able to fairly
2 quickly identify that there were three broad data
3 providers that have relevant information that we
4 would require to build a data set that was
5 equivalent to that that Dr. Crawford and Dr. George
6 and Dr. Israel had in the prior proceeding.

7 MR. DOVE: At this time, Your Honors, I
8 think we're going to need to move into a restricted
9 session.

10 CHIEF JUDGE SHAW: All right. We are
11 doing that.

12 MR. SACK: At this time, everyone who is
13 not allowed to attend an executive session, if you
14 would please exit the meeting. And we'll allow a
15 minute or so for people to leave.

16 CHIEF JUDGE SHAW: And something happens
17 to the Zoom feed, right?

18 MR. SACK: That is correct, Your Honor.

19 MR. TOTH: Yes, it's in restricted
20 session on Zoom.

21 MR. SACK: And having given some time for
22 people to exit, I'm going to lock the meeting.

23 The meeting is now locked, Your Honor.
24 And we are in closed session.

25 (Whereupon, the hearing proceeded in

1 restricted confidential session.)
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1 O P E N S E S S I O N

2 MR. SACK: Your Honor, the -- we are back
3 in public session. Thank you.

4 CHIEF JUDGE SHAW: Thank you very much.
5 We'll continue on the public record.

6 BY MR. DOVE:

7 Q. Dr. Johnson, can you give us a summary of
8 the main takeaways regarding data preparation as it
9 relates to your econometric modeling process?

10 A. Well, look, carefully working with
11 complex data is complicated. It's messy but it is a
12 part of the economic research process.

13 I have a team that I've built over the
14 years to help me build the data. I don't have my
15 hands in every element of the data. You can see
16 there's a lot of back and forth with data vendors,
17 trying to figure it out. The team works through
18 those issues.

19 And then I am able to look at the data
20 sets, ask my questions, understand that we have the
21 data correct.

22 In the real world, though, this was an
23 important data set because I think this is the
24 superior source of information on the CSOs' revealed
25 preferences. But, again, there are several rounds

1 of testing and several unexpected turns along the
2 way, including the number of times that this data
3 set had to be updated.

4 Q. Dr. Johnson, I think we finally made it
5 to step 4, which is the formulating and estimating
6 the model. And you said you were offering a
7 regression methodology in this proceeding. Is that
8 right?

9 A. Yes.

10 Q. Could you give an example of how a
11 regression works?

12 A. I'll do my best. So a regression
13 analysis is the workhorse tool of economists. We
14 see this in virtually -- essentially every
15 engagement I work on. Every applied paper in
16 economics is doing some form of regression.

17 The way I try to explain regression is we
18 are using statistical tools, we're using our
19 knowledge of economics, and we're using the data to
20 try to come up with rigorous answers to questions.

21 So I have a simple example, I hope, that
22 will try to help. Let's say we want to answer this
23 question: How is the price of a house affected by
24 the number of bedrooms?

25 We could build a regression model around

1 that question. So to do that, we have to start with
2 what is it that we are trying to explain? Again,
3 this simple question, we're trying to explain the
4 price of a house.

5 So house price will be what we're going
6 to call the dependent variable. You might see the
7 letter Y. It's the variable we're trying to
8 explain. It's also sometimes called -- "dependent
9 variable" is the best term.

10 Now, we need some type of sense, the
11 question here is how is the price of a house
12 affected by the number of bedrooms? So what we are
13 looking for is an explanation, the explanatory
14 variables, number of bedrooms.

15 So anything on the right-hand side are
16 the answers to the question. We specifically care
17 about a very specific answer, what's the effect of
18 number of bedrooms. And so what we would try to do
19 is we would want to look for data, we would collect
20 data on house prices, and we would collect data on
21 the number of bedrooms so that we could do a
22 statistical technique to measure that relationship.

23 Now, when we measure that relationship,
24 what we are talking about is literally running
25 computer code that does a mathematical process to

1 sort of say what's the best fit of the data? And
2 what we get out of that is what's called a
3 coefficient. So I'm trying to minimize Greek
4 letters because most people don't like them, but
5 you're going to see the phrase "betas" throughout
6 the day. The beta is the coefficient, all right?

7 In this simplistic regression, the beta
8 would be on average how much did the house price
9 increase for every additional bedroom?

10 Q. And then it looks like you also have some
11 go called other relevant factors. What's that
12 about?

13 A. Well, that simplistic regression of house
14 price on number of bedrooms will tell us something
15 about a relationship, but to the extent we think
16 there are other important factors that affect house
17 price, we would want to try to account for those as
18 well.

19 And so you always have this issue with
20 regression, is have you accounted for the relevant
21 factors or not? So what would be an example of an
22 other relevant factor? Well, maybe the number much
23 bathrooms in the house, maybe the school district
24 you're in, but one might be particularly important,
25 could be square footage because you could imagine

1 that if you had ten bedrooms in your house, it's
2 probably the case it's a pretty large house and has
3 a big square footage, but you don't want your
4 bathroom -- your bedroom effect to simply pick up
5 the fact that you have a large house. You're trying
6 to parse those things out.

7 So the power of the regression is you can
8 include other variables in the regression, other
9 explanations, and weigh competing explanations for
10 what are the factors that drive house prices.

11 Q. And when we're talking about regressions,
12 you know, can you say a little bit more about, you
13 know, how are regressions used in the real world? I
14 mean, are they commonly used? How are they used?

15 A. Look, they're used all the time. I mean,
16 Zillow, if you've ever been on the website Zillow,
17 which we're talking about house prices, there's a
18 regression of housing prices under the surface of
19 Zillow. It's the kind of thing that we see when you
20 click on a website and you see certain things pop
21 up.

22 Oftentimes, there's regression algorithms
23 under the surface that are running. When you get a
24 call on your credit card company that says there was
25 fraud on your credit card, that's because a

1 regression was being run in the background that
2 said, oh, this pattern of behavior indicates that
3 maybe someone stole your credit card.

4 So they're used -- they're ubiquitous.
5 They're used all the time.

6 Q. Dr. Johnson, I think we can now turn to
7 the model you actually constructed in this case.

8 And as an initial matter, how does your
9 model specification compare with Dr. Crawford's
10 model that the Judges adopted in the last
11 proceeding? And we've talked a lot about
12 Dr. Crawford this morning already, but can you
13 describe that comparison?

14 A. Dr. Crawford's model, like
15 Dr. Waldfogel's model, they're sort of a predicate
16 to this, that the dependent variable is the base
17 royalties accrued by the CSO at the subscriber group
18 level, period by period, and that base royalties are
19 the base royalty obligation before the minimum fee
20 is calculated. And that's the variation we're
21 trying to explain.

22 The key explanatory variables in this
23 type of model are the minutes for each of the
24 different copyright holders, Public Television,
25 Joint Sports, Devotional, Canadian, Commercial, and

1 Program Suppliers.

2 Those betas, beta 1 through 6, are what
3 are going to derive the valuation, what is the
4 relevant -- relative average value of those minutes.

5 Now, there are other explanatory
6 variables in the regression to try to isolate the
7 effects. And many of those, some of those are the
8 same as what Dr. Crawford had, and some of those are
9 different.

10 Q. Which one of those are the same?

11 A. Well, for example, the number of
12 permitted distant stations -- sorry -- we're going
13 to talk a little more about that. But let's talk
14 about the number of permitted distant stations, for
15 example, is one that's the same. But I think we --
16 I think I spoke over this slide. I'm sorry.

17 So let me go to the next slide.

18 All right. So the element, though, and
19 the important point with respect to the question I
20 was asked about, what's the same from Dr. Crawford's
21 model and Dr. Waldfogel's model before that, it's
22 this ability to try to link the carriage decisions
23 for each programming type to the royalties paid.

24 And so those betas will give you that
25 relative value, how much a given claimant's

1 programming contributes to the ultimate royalty
2 payment.

3 JUDGE STRICKLER: I have a question for
4 you, Dr. Johnson.

5 When you did your primer on regression
6 analyses and you showed explanatory variables
7 focusing, in your hypothetical, on number of
8 bedrooms and you mentioned other relevant factors,
9 all of those other factors in a regression would
10 have market prices attached to them, either as part
11 of bundles or probably as bundles rather than as
12 standalones.

13 Does that make your model different in
14 any important ways because your -- the model that
15 you actually created for this purpose doesn't have
16 market prices attached to it with regard to
17 programming in the distant retransmission market?
18 Because, as you know, there is no marketplace.

19 How do you respond to that?

20 THE WITNESS: I don't think that's an
21 issue. So it kind of goes back to the predicate,
22 and I want to be a little careful about the
23 terminology.

24 The housing example is a pure example of
25 what we call a hedonic regression, right? In a

1 hedonic regression -- I've seen this term used in
2 prior decisions, but the hedonic regression, the
3 idea there is that you are literally parsing out
4 attributes. You don't have to have market
5 valuations for attributes. You could have a product
6 where you don't know.

7 I recently did an engagement involving
8 coffee cans, and we were trying to assess the
9 valuation of certain claims on the labels. You
10 can't separately -- you know, that's not something
11 that they have a market price for, but the model
12 will allow you to parse those things out.

13 So it's not necessary that it has a pure
14 market correspondence for you to be able to use the
15 model to determine an average relative valuation.

16 JUDGE STRICKLER: But the bundles that
17 you would be comparing, houses in this case, some
18 with three bedrooms, some with ten bedrooms, what
19 have you, some with more or less square footage, all
20 the variables or control variables you would be
21 using, all of those bundles have market prices
22 themselves, right? Each house has a price that was
23 determined in the marketplace, correct?

24 THE WITNESS: That is correct. And so
25 here what we have to do is we're trying to use the

1 base royalties absent the minimum fee obligation as
2 our measure of here's what the choices are when they
3 make those choices. They know there's this type of
4 obligation, and this is what they've chosen to
5 correspond.

6 But you are correct, there are no actual
7 prices. We don't have an actual marketplace. But I
8 don't think that actually undermines the model. I
9 think that's actually the strength of the model,
10 given the circumstances we're in, where we don't
11 have actual prices.

12 JUDGE STRICKLER: So if I understood --
13 well, I'm not going to put words in your mouth. Let
14 me ask you, is your model a hedonic regression or
15 not a hedonic regression?

16 THE WITNESS: I want to be careful about
17 the term. A pure, classical hedonic regression ties
18 to a paper from an economist, Sherwin Rosen, which
19 is really about the application where you just have
20 product attributes in your regression. I'm going to
21 have certain things that are going to proxy for
22 demand in my regression, so I think it is in the
23 style of a hedonic regression but I wouldn't
24 necessarily say it's in that purest sense.

25 Oftentimes, people colloquially say any

1 regression that's based off of revealed preference
2 is hedonic. So in that sense -- again, I'm not
3 trying to be overly technical, but I think there's a
4 little bit of a distinction in the literature.

5 JUDGE STRICKLER: So the question of
6 whether or not a regression is hedonic or
7 non-hedonic doesn't turn on whether or not the
8 bundles, whether they're characteristics or
9 retransmitted programs, does not turn on whether the
10 bundles that are in the marketplace that you're
11 studying or in the industry that you're studying
12 themselves have prices or are set in a non-market
13 fashion?

14 THE WITNESS: That does not -- that is
15 not a necessary assumption for the models.

16 JUDGE STRICKLER: Do you understand that
17 to be one of the criticisms of your model, that it
18 doesn't -- does not have those prices attached to
19 it?

20 THE WITNESS: I do, but, again, we're in
21 a world where we're trying to hypothetically
22 simulate a marketplace. I agree that we would also
23 all have an easier test if we had actual prices, but
24 we don't. What we have to do is we have to look at
25 the variation that is generated by the statutory

1 formula as the best possible proxy for where the
2 valuation comes from. And so we can use the
3 aggregate of all those decisions to get the average
4 relative valuation.

5 Again, since we're in an average relative
6 valuation world, all we need to do is get average
7 relative valuations across the claimant groups.
8 We're not trying to get absolute valuation.

9 CHIEF JUDGE SHAW: Okay. Thank you,
10 Dr. Johnson.

11 BY MR. DOVE:

12 Q. Dr. Johnson, I think we can go back and
13 you were explaining the parts of the other factors
14 that were the same as the earlier -- the Crawford
15 and earlier regression models, and then parts that
16 were different, if you could continue that
17 discussion.

18 A. Sure. Could we go to the next slide,
19 please. Okay.

20 So there were a number of factors in
21 Dr. Crawford's model, and, as I said, one of the
22 things I want to do understand what were their
23 effects, what was the economic reasoning behind
24 them, and what was the statistical effects of their
25 inclusion.

1 One that is particularly important is the
2 number of permitted distant stations retransmitted.
3 That variable is that which creates the benchmark,
4 right? What we're going to do here is we need a
5 benchmark to compare to derive average relative
6 valuations. This is something that Dr. Crawford
7 explained in the prior proceeding. The number of
8 permitted distant stations retransmitted is
9 important for that purpose.

10 Another variable that's going to be very
11 important is going to be the minimum fee paying CSO
12 indicator. As I said -- and I keep promising
13 minimum fee, I'm going to talk more about that in a
14 second, but the minimum fee indicator is going to be
15 an important part of assessing and being able to
16 control for the types of concerns about whether or
17 not minimum fee payers are making decisions or have
18 some different process.

19 Then there's also in my model number of
20 distant subscribers. That is distinct from
21 Dr. Crawford's approach, slightly, because he used
22 lagged subscribers, which I'll talk about in a
23 second. I also have 3.75 generating subscriber
24 groups. And then in the face of certain unavailable
25 programming data, I also have a control for stations

1 that are missing that data.

2 Q. Now, in deciding what parts of the prior
3 model you were going to keep and what you were going
4 to change, how did you go about doing that? What
5 was the procedure, process you used?

6 A. Look, this is a multi-step process, all
7 right? Once again, of course we were starting with
8 some foundational theory. We know the structure of
9 the formula. We generally know what these things
10 are supposedly trying to proxy for.

11 But, again, I, coming into this new,
12 wanted to look at both the data, to understand
13 whether or not the types of variables, moving
14 forward, what was the purpose they were described
15 for, were they accomplishing that, were there
16 limitations with the data, and then ultimately what
17 are the consequences of their inclusion or
18 exclusion, because that actually does matter.

19 We can debate lots of things, but what
20 I'm trying to do is get the most parsimonious model
21 so that I can testify to you and explain to you here
22 are the things that I think move the needle with
23 respect to this model.

24 So I describe in my report a discussion
25 of the various factors and the types of things that

1 I considered as I looked at each of these variables,
2 as well as the data analyses I did to consider them.

3 Q. And in this process, what was your role
4 versus the role of your team?

5 A. Well, this is the process where I'm
6 heavily involved. I am trying to understand what
7 the tradeoffs are, what the purpose is, what the
8 economists have said, a priori what are we thinking,
9 but also what matters or not? Does it make a
10 difference with respect to the final outcome?

11 Not with respect to some level of
12 royalties, but do we just see movement such that
13 it's important and does it seem to be capturing that
14 which we think it should be, given the descriptions.

15 Q. And was there -- what sorts of tests did
16 you perform at this stage, if any?

17 A. Well, sure. There's -- first of all,
18 there's just simply the testing of the data to begin
19 with to make sure it was complete, but then there's
20 also a lot of testing that goes into sort of making
21 determinations about what these things measure.

22 So I know one example is with respect to
23 the number of subscribers. I clearly felt that the
24 number of subscribers was going to be an important
25 factor, but the question was how could it be

1 included in the model and why was it being included
2 lagged and how was that even constructed?

3 Q. And if you were to change something from
4 the prior model, how would you have gone about
5 making that decision?

6 A. Again, I would have looked at, A, I'm
7 trying to figure out does it meaningfully change the
8 results, does it matter for the economic theory, is
9 there something about it that is important or not,
10 is there something about it that I think it is just
11 an essential element?

12 It's a multifaceted process. We don't
13 have a textbook theory of cable television royalties
14 for distant signals, like you can't pull that
15 off-the-shelf. So we have to do the best we can to
16 try to capture the key elements in the model, but
17 it's a process by which you sort of demonstrate and
18 think through what matters and what doesn't and why
19 and what are the consequences.

20 Q. And what was an example -- and you may
21 have mentioned this briefly before -- but an example
22 of a variable you kept intact from Dr. Crawford's
23 model?

24 A. Okay. Well, one that I kept intact was
25 the number of distant stations.

1 Q. And how about -- what's an example of a
2 new variable you added?

3 A. Well, one that I added new was the
4 control for the missing programming data so that I
5 could account for the fact that there was a set of
6 data that just was not complete.

7 Q. And what's an example of a variable you
8 changed from the prior model?

9 A. Okay. Well, one thing I was curious
10 about was Dr. Crawford had these lagged subscriber
11 accounts. And one of the things that my team had
12 picked up early on, that we talked about, that we
13 were working on was the fact that subscriber groups
14 change over time. All right?

15 Here's an example of Comcast of
16 California. All right? In the 2014 period, there
17 are six subscriber groups. In 2015 period, there
18 are now two. Right?

19 To construct a lagged variable, which is
20 one where you have to say what were the number of
21 subscribers in subscriber group 2 in 2015, period 2,
22 you have to map it onto what was subscriber group 2
23 and what was the content. But subscriber group 2
24 mechanically has changed. Right?

25 So there is no mapping over time on these

1 subscriber groups. They do change. So the idea of
2 using lagged variables is a problem. In fact, this
3 is a fairly significant issue. About 40, 39 to
4 40 percent of the subscriber groups change over time
5 such that you can't construct the laggeds.

6 Q. And when you talk about, you know, the
7 word "lagged" or can't construct the laggeds, what
8 are we -- what do you mean by that?

9 A. Well, what I mean is that you're trying
10 to use last period's number of subscribers as a
11 control instead of the current subscribers as a
12 control.

13 Q. And what did you do to change these
14 lagged variables?

15 A. Well, I just -- I actually just used the
16 number of subscribers in the period, because I don't
17 have this matching issue on the subscriber groups.

18 Q. Have any of the other experts challenged
19 you on this change to the model?

20 A. Yes. I believe Dr. George has, and I
21 believe maybe someone else has as well. But the
22 problem is none of them have actually been able to
23 do the mapping. In fact, Dr. George for example,
24 her solution to this problem, for when she can't map
25 the 39 percent, is she just puts in the number of

1 contemporaneous subscribers.

2 So in my mind, there were two issues.

3 One is I don't have the 2013 period 2 data to do
4 lagged subscribers. So I would lose critical data
5 from 2014. And, two, the problem is worse than the
6 solution. The solution is fairly simple. Just put
7 in the actual subscribers. It avoids the problem
8 entirely.

9 JUDGE STRICKLER: So that 39 to
10 40 percent figure you gave before was separate and
11 apart from the absence of data from the second half
12 of 2013?

13 THE WITNESS: Yes.

14 JUDGE STRICKLER: Thank you.

15 BY MR. DOVE:

16 Q. Dr. Johnson, what's an example of a
17 variable you dropped from the prior model?

18 A. Okay. Well, one of the things that I
19 thought about a lot, and given the focus on
20 parsimonious models, on overfitting, and even on
21 statistical significance, is, you know, we want to
22 include variables that matter, but the inclusion of
23 irrelevant variables actually makes our models what
24 we call inefficient. All right?

25 So we don't want to just include things

1 for no reason. It affects the precision of the
2 estimates. So one thing I noticed was there was a
3 Canada zone dummy variable -- sorry, "dummy"
4 variable is another form of an indicator variable --
5 which basically means it's turned on in the areas
6 where Canada is allowed retransmission and turned
7 off where it isn't. In -- sorry.

8 Q. No, I was just going to say, what was the
9 impact of that or what -- if you could explain this
10 slide a little bit further.

11 A. So what I looked at is just like what are
12 the -- where is the Canada zone? The Canada zone is
13 everything that's colored in purple -- sorry, it's
14 blue and pink on my screen. Right?

15 So what I found is that the inclusion of
16 the Canada zone variable is actually not
17 accomplishing what Dr. George, I think, assumes it
18 does, because you have all this blue, and blue
19 represents no distance transmission of Canadian
20 content, right? So you basically have a barrier,
21 essentially, that -- the Canadian content is carried
22 only in these red areas, and they're entirely
23 bounded by the blue counties with no transmission,
24 which means that you're throwing out or including a
25 control that is really unnecessary. It doesn't --

1 there is no reason to restrict here. Really the
2 only places where Canada transmission is occurring
3 is right at the border.

4 So also, though, with this Canada Zone,
5 if -- and depending on how many fixed effects you
6 ultimately put in your model, it also doesn't work.
7 So, for example, in Dr. George's model, although
8 when she includes her 860 fixed effects, it actually
9 will not estimate a Canada Zone estimate.

10 So for those reasons, it didn't seem like
11 this is a variable that actually was important to
12 include and the cost in terms of precision did not
13 outweigh any benefits that you would gain from the
14 model in terms of explanatory power.

15 Q. Did Dr. George criticize you for this or
16 challenge this change in the model?

17 A. Yeah. I think she challenged it, yes.

18 Q. And do you recall the nature of her
19 criticism and your response to that?

20 A. Well, essentially as I said, the response
21 is the control that is actually not accomplishing
22 what it needs to, because you see Canadian
23 transmission is bounded in the transmission zone by
24 people not carrying Canadian stations, there is no
25 purpose to that.

1 But also if you look at her underlying
2 results, because of the fixed effects, there is no
3 estimate on the Canada Zone. It is subsumed in the
4 fixed effects. That's an example of a variable that
5 is redundant in her regression.

6 Q. So for reference purposes, if one would
7 want to dig into this further, where could we find
8 the explanations for why you kept, added, changed or
9 dropped each variable? We don't need to be
10 specific.

11 A. It is in my direct report. There is an
12 entire section on the regression estimates and how I
13 thought about these issues.

14 Q. All right, Dr. Johnson, I would now like
15 to turn to steps 5 and 6 where you are interpreting
16 and presenting your regression results.

17 It looks like the betas are back here.
18 Can you explain what this chart is showing?

19 A. Okay. Well, in this regression
20 specification, once you got the data, once you have
21 run the model, what you can get and cover are a
22 series of average relative valuations for each of
23 the Sports Claimants groups. This is the part where
24 we would look and interpret the regression.

25 Q. Let me stop you. You said for each of

1 the Sports Claimants groups.

2 A. I meant each of the claimant groups. I
3 apologize. So what you get is you recover the
4 betas. The betas are going to represent in a
5 regression of this form what is the percentage, the
6 extra amount of royalties for each minute of
7 programming.

8 And then you will see there is these
9 little stars. So one of the things about regression
10 is that it is probabilistic. So what I mean by that
11 is that when we're doing these estimates, we're
12 always trying to determine whether something is due
13 to random chance occurrence.

14 And there is statistical standards for
15 that. Levels of significance that are accepted, and
16 in this particular context, I ran -- it is standard
17 procedure to look at the statistical significance,
18 and these results are significant at the 99 percent
19 confidence interval, which we would consider
20 95 percent is the usual confidence interval so we
21 consider this to be statistically significant.

22 Now, that's not surprising, given the
23 volume of data here, with 18,000-plus observations,
24 it is not surprising to get significant results.
25 But that's important and something I will factor

1 into my analysis.

2 JUDGE STRICKLER: Dr. Johnson, I have a
3 question for you.

4 You mentioned that these betas were
5 reflecting average relative valuations and you went
6 on to say it reflects the extra royalty for each
7 minute, additional minute of programming. And of
8 course economists distinguish between average values
9 and marginal values.

10 Would it be accurate to say that this is
11 showing the average marginal relative valuation?

12 THE WITNESS: Yeah, because of the form
13 of the regression with the log linear specification,
14 what this is going to represent is we're going to
15 have to translate these from these percentages per
16 minute to a change in royalty per minute to
17 translate them to royalty. So, yes, you are
18 correct, sir.

19 JUDGE STRICKLER: The average marginal
20 relative valuation?

21 THE WITNESS: Yes.

22 JUDGE STRICKLER: Thank you.

23 BY MR. DOVE:

24 Q. And Dr. Johnson, can you say a bit more
25 about the -- about what these betas mean sort of in

1 terms of relative valuations amongst the programming
2 categories?

3 A. So the betas here are going to show,
4 first, if you look at the different groups, the most
5 valuable content on a relative value is going to be
6 the Joint Sports Claimants.

7 That's the result of the model. And they
8 are the most valuable by a fair amount. And the
9 next most valuable is Commercial Television. And
10 then thereafter, Canadian Claimants and Program
11 Suppliers are fairly close.

12 Public Television is next. And the
13 devotional programs are the lowest in the model. So
14 you can see that sports in my model is highly
15 valued. And Public Television, in fact, in my model
16 has the second lowest relative valuation.

17 JUDGE STRICKLER: I have a question for
18 you as we relate value to minutes. Maybe I am
19 getting ahead of myself because I know you
20 ultimately multiply by minutes. Since I have gone
21 down this path, let me keep asking the question.

22 And I think about it, I was trying to
23 formulate a hypothetical question for you and I just
24 got back from Florida where I watched a spring
25 training game and so what is fresh in my mind is

1 this: Baseball has sped up its game. They have a
2 15-second clock, the pitcher has to be on the
3 rubber, 20-second clocks, depending if there's a man
4 on base. The game is taking less time because
5 baseball was considered to take too long, three
6 hours and change, they're trying to get it out in
7 two hours and change.

8 Does that change alone, so if a game is
9 being -- a baseball game is being shown on a
10 distantly retransmitted station, and the game is two
11 and a half hours instead of three and a half hours,
12 your model would indicate that the baseball game was
13 therefore less valuable; is that an accurate
14 statement?

15 THE WITNESS: Well, I think you still
16 have to control for the choices that are made. I
17 mean, that is part of the valuation, but it's also
18 how does that square with the selection, how does
19 that square with the other minutes that take its
20 place.

21 It is more complicated than that. So the
22 entire model rests on what we have observed happened
23 in the past. If, you know, baseball, if they were
24 doing a hypothetical negotiation and the game is
25 faster, does that mean that suddenly there is more

1 value or less value because they have to fill it
2 with more programming. Those are the kind of
3 decisions we're going to have to see how CSOs
4 accommodate.

5 What I can only do is look to what they
6 have done in the past before that change has
7 occurred. And it may well be in the next proceeding
8 we have to deal with that issue, but, again, the
9 decision-making won't change. To the extent it
10 does, I will be able to observe that in the minutes.

11 JUDGE STRICKLER: I see. And you talked
12 about what programming would have to replace it, if
13 baseball took one hour less, a game on average took
14 one hour less, there would be other programming.

15 It sounds to me like there's an
16 opportunity cost concept that goes on here, a
17 baseball game that lasts three and a half hours
18 includes other programming during that period, but a
19 baseball game that takes two and a half hours does
20 not preclude other programming and so the mix of
21 programming is freer to change because there is one
22 more hour of excess capacity compared to when the
23 games were three and a half minutes (sic).

24 Would your model capture that opportunity
25 cost?

1 THE WITNESS: I think it would because it
2 is revealed of what actually happens, right? I
3 agree that there is some opportunity cost, and I
4 agree it is a change that we'd care about, but,
5 again, the data is going to tell me, well, what was
6 that replaced with and how did that sort of change
7 over time?

8 And that's where I think the model will
9 still give an average relative valuation that can
10 accommodate that kind of issue.

11 JUDGE STRICKLER: So is the value of
12 programming, is the importance of multiplying out by
13 the number of minutes of the program in part because
14 that program precludes programming from any other
15 category for as long as that program is on?

16 In other words, three and a half hours of
17 baseball means that there is three and a half hours
18 where you're not getting programming -- assuming it
19 is Joint Sports Claimant programming, precludes
20 Program Supplier programming during that period,
21 Settling Devotional and all the other categories,
22 for as long as that's on, those minutes are doing
23 sports retransmission?

24 THE WITNESS: No, I think that's right.
25 The way I think about it is in an economic world we

1 think about P and Q. We need to worry about both.
2 So this part here is giving me the valuation, the
3 average relative valuation for the minutes, but then
4 the quantity is going to be important too because,
5 you know, that's what you're doing.

6 So I think you are correct that in a
7 world where there are tradeoffs, what we would
8 observe in a future proceeding is what tradeoffs
9 were made with respect to that content. What
10 decisions were made based on the regulatory formula
11 and the base fees absent the minimum fee and what
12 took its place?

13 And we can look at that decision-making
14 across a wide range of CSOs to derive and see what
15 happened.

16 JUDGE STRICKLER: Thank you.

17 CHIEF JUDGE SHAW: Dr. Johnson, I have a
18 very fundamental question. I apologize for the lag,
19 but I was searching your witness statement, your
20 testimony, and the transcript.

21 Could you give us, and I am always
22 thinking ahead about writing the decision, a
23 definition of "confidence interval"?

24 THE WITNESS: Sure. I will do my best.

25 CHIEF JUDGE SHAW: And I know that that's

1 probably a loaded question.

2 THE WITNESS: No, no.

3 CHIEF JUDGE SHAW: I mean, it is one that
4 -- by loaded, I mean it could be a very expansive
5 answer, but I think that that is a word I will find
6 myself using and probably be casting about for an
7 uncontroversial definition. And rather than go off
8 on my own, I thought I would ask you.

9 THE WITNESS: Okay. I will do my best.
10 As I said, but basically the idea behind -- one
11 second. I might actually have a reference that
12 points you to it too, so you can always --

13 CHIEF JUDGE SHAW: That would be great.

14 THE WITNESS: All right. So in my report
15 at paragraph 36 is my discussion of the
16 probabilistic nature. And I cite in that section to
17 a chapter in the ABA Econometrics Handbook,
18 footnotes 40 and 41. I hope that those sources, the
19 Davis and Garciss source and the econometric source
20 would give you something you could go to for your
21 answer, like that's a good place to look.

22 However, let me do my best, since I'm
23 here, I would like to try if that's okay.

24 CHIEF JUDGE SHAW: Absolutely, but that's
25 very helpful. Thank you.

1 THE WITNESS: Again, if you go on in that
2 footnote, 41, there are other -- if you don't like
3 those textbooks, there are some others. I really
4 like Gujarati and Wooldridge. They are a little
5 simpler. So, anyway, they are the places to look.

6 Now, with respect to confidence interval,
7 when we talk about the probabilistic nature of the
8 coefficients, we're talking about whether or not we
9 think this is due to random chance occurrence. One
10 way I like to think about is imagine I had a ruler
11 and I have the little lines on the ruler,
12 centimeters, meters, right, and the more precise my
13 little lines are, the more carefully I can measure
14 something.

15 So when I get a confidence interval, what
16 I have is that tells me given the nature of the data
17 and the accuracy, the precision underlying the
18 model, how confident can I be that it is within a
19 range, that we as economists think it's distinct
20 from random chance occurrence?

21 The best estimate is the point estimate.
22 That's the ones that you see here. But under that,
23 when I say there's a 99 percent confidence interval,
24 what that means is that there is a range, and with
25 99 percent, it is a fairly narrow range within which

1 I am confident the estimate would be in.

2 The smaller the confidence interval, the
3 more confident I am that that is different from
4 random chance occurrence and the more precisely I
5 can measure that effect.

6 Does that help, Judge Shaw?

7 CHIEF JUDGE SHAW: That does. Thank you.

8 BY MR. DOVE:

9 Q. So, Dr. Johnson, taking these, I think
10 you said P and Q's, P meaning prices and these are
11 what you would -- this is sort of -- is that what
12 you mean?

13 A. The average relative valuation, the P.
14 Now I have to look at the minutes.

15 Q. Okay. So what do the regression
16 coefficients indicate about the royalty shares for
17 each group?

18 A. Well, it's not only about the valuation.
19 It's also about how many compensable minutes. What
20 I do, and this is exactly as other experts with the
21 econometric methods have done in the past, is I have
22 to multiply now times the number of minutes. Again,
23 these are not subscriber weighted. These are just
24 compensable, direct, distantly retransmitted
25 minutes.

1 Here's what I found. Although sports had
2 the highest valuation, they had the smallest number
3 of total retransmitted minutes. Public Television
4 had the largest number of minutes. So when I was
5 talking about the trends with respect to the WGN
6 going no longer distant and PTV with the exemption
7 status changing, you see this in a number of
8 minutes.

9 So what I have to do is I have to
10 multiply the betas times the number of minutes to
11 get the royalty shares.

12 Q. So when you say I have to do that, I
13 mean, why do you have to do that? I mean, can you
14 explain why the coefficients that come out of the
15 regression are not the end of the story?

16 A. Well, I'm trying to get a relative
17 average value for royalty shares, right? I have an
18 average relative valuation and I have a number of
19 minutes. I have to multiply those together to see
20 what are going to be the percentage bases by which
21 the royalties would be allocated, given these
22 valuations and given the quantity of minutes.

23 Q. So we have heard some criticisms about
24 how, you know, the Public Television or this model
25 is -- is just another measure of volume. Would you

1 agree with that?

2 A. I don't agree with that. Volume is one
3 part of the equation, but we are trying to look at
4 the decision-making across the CSOs with respect to
5 changes in the base rate formula, absent the minimum
6 fee, as well as controlling for subscribers, to
7 determine what the average relative valuation is in
8 a hypothetical marketplace.

9 Now, what I do agree with is we don't
10 have the actual prices, but this is a reliable way
11 to do this with respect to getting at an average
12 relative valuation.

13 Q. We can turn to the next slide.

14 How does the model, you know, looking at
15 this example that you showed us earlier from WDCA
16 Fox 5, and the programming from Program Suppliers
17 and Commercial Television, how does the model
18 distinguish values for individual programs? For
19 example, are you trying to determine if some people
20 like "Modern Family" more than "Family Feud"?

21 A. Right. So I think we have to be
22 transparent about where the limitations of the model
23 comes about. The volume of programming defines the
24 bundle being sold, but the model is not going to be
25 precise enough, given the millions and millions of

1 hours of programming to get beyond average relative
2 valuations.

3 So what I can do is tell you that the
4 Program Supplier content here, as you can see,
5 "Bull," "Modern Family," "Family Feud" and all of
6 the other Program Supplier content, there's an
7 average valuation, that's the beta. And Commercial
8 TV has a different average valuation and in the
9 model across all the Commercial Television
10 programming that is higher, all right?

11 But what the model can do is it can
12 equate the higher or lower value to the bundle and
13 to the amount of programming. So this is why you
14 multiply them times each other. 3.5 hours of
15 Program Supplier content is a relatively lower per
16 minute price versus the one hour of commercial,
17 which is at a higher relative price.

18 Q. And are there any tests that you run or
19 anything like that that, you know, relates to this
20 issue, you know, trying to figure out how thinly can
21 you parse this? Is it just a category level or --

22 A. Look, I think at the end of the day, as I
23 said, I have looked at my model. I don't think
24 efforts to try to parse the model down to individual
25 level programming is something the model can

1 accommodate. And, in part, because you're just
2 going to induce a lot of noise where you just
3 can't -- you know, the model is not going to be
4 capable of estimating a "Family Feud" effect given
5 the variation we have across subscriber groups in
6 the royalty payments, the base obligation, and how
7 much programming we have.

8 That it just can't do. But I also then
9 test the relative stability of the model across the
10 types of programming.

11 Q. Did you prepare a slide which shows the
12 ultimate royalty shares that you calculated using
13 the model?

14 A. I did. And, again, there are multiple --
15 I am going to talk about this again later, but this
16 is the first estimate of royalty shares. These are
17 found in my written direct testimony, Figures 13 and
18 17. All right?

19 Now, there is an issue here, I wanted to
20 mention. Public Television is not eligible for the
21 3.75 Fund. I thought it was sensible to do two
22 separate models then, one for the Basic Fund and one
23 for the 3.75 Fund, so I calculated royalties that
24 way.

25 These are the royalties from applying

1 that single average relative valuation to the
2 minutes across each of the groups over time. And
3 they are found in my report.

4 Now, I did see criticism of that approach
5 of doing two separate models, and I also report in
6 my rebuttal report, if you put them together, and
7 those I will explain where they are later, but just
8 so you know, either way, my model can accommodate
9 that. And these are the shares that I ultimately
10 end up with.

11 Q. Now, you mentioned testing several times
12 today. What do you mean by testing a regression?

13 A. One of the things that I did in my
14 initial report is I ran sensitivities, and I ran
15 tests that I thought were informative to share with
16 the panel in my initial report. I also ran
17 sensitivities that I looked at and thought about
18 that I didn't think were particularly informative,
19 but I have also, as I said at this point, there's
20 nothing to hide.

21 But one of the things I thought was
22 really important was to look at this issue with
23 respect to changes in time and the WGN conversion,
24 because I knew the issue was going to be there was
25 something about that that changed.

1 If you go back to the prior slide before,
2 just for a second, please, right, one of the things
3 you can see is the share for Joint Sports changes
4 quite a bit from 2014, forward 2015, 2016, 2017.
5 And I was curious about that.

6 And so what you will see is repeated
7 language about testing the pooled model. What I
8 call my baseline regression is the pooled model.
9 But in Figure 14 to my original report, I did a
10 series of tests. And the first test that I have on
11 the right-hand side is the test of year-by-year
12 estimates.

13 And I estimated my model, pushed the
14 model to estimate different relative valuations for
15 every year for each claimant. That's a test of
16 whether or not something changed in the period.

17 Q. And can you give us an example of a test
18 of your model that you did run?

19 A. So in Figure 14 I report the results of
20 what is called a pooling test. What I did is I
21 tested year over year, if I estimate separately a
22 2014, a 2015, a 2016, a 2017 beta value for each
23 claimant, what happens.

24 What I found is that for five of the
25 claimant groups, the test tells me there's no

1 statistical difference in the estimates for 2014 and
2 2017. Again, I want to be clear, when I say no
3 statistical difference, what I mean by that is given
4 the confidence interval, these estimates are not
5 different from each other. That doesn't mean that
6 they may not look a little bit different because
7 there are some that will be higher or lower but they
8 are precise enough that they are different.

9 So that's what I tested. Most important,
10 though, what I found and what I think is
11 confirmatory of my model is the place where there is
12 a difference is the Joint Sports valuation.

13 So what I found is for Joint Sports, if I
14 separate it year by year, I get a very big estimate
15 for sports in 2014. And then I get a de minimis
16 estimate, in fact, one that is statistically
17 insignificant for 2015, 2016, and 2017. And I --

18 JUDGE STRICKLER: I'm sorry, Doctor.
19 Finish your answer. I apologize.

20 THE WITNESS: No, that's fine. I report
21 that in my report in Figure 14. This is an analysis
22 that I have affirmatively put forward in my first
23 report, to shed light on the issue of what is going
24 on under the average relative valuation.

25 JUDGE STRICKLER: My question is related

1 to the Joint Sports change in relative value, those
2 values for 2015 through 2017 are negative. What
3 does a negative coefficient represent economically?

4 THE WITNESS: So a negative coefficient
5 -- well, first of all, they are actually zero
6 because we can't tell. They are not statistically
7 significant. But you are right that the number, the
8 coefficient is negative.

9 What that would tell me is that the
10 average relative valuation is low relative to the
11 non-claimant programming. So when I say there's a
12 big change between 2014, 2015, 2016, and 2017, there
13 is. The average across the four years gets you an
14 average valuation that can be applied.

15 But under the surface year by year, it is
16 absolutely true that the sports value now with the
17 de minimis number of minutes is close to zero. It
18 can't be distinguished from zero in those years in
19 this particular test of the model.

20 JUDGE STRICKLER: I understand you are
21 saying because of the statistical insignificance,
22 you can't say it's anything lower than zero, but
23 your point estimate is below zero --

24 THE WITNESS: That is true.

25 JUDGE STRICKLER: -- which is

1 statistically significance.

2 THE WITNESS: So the point estimate being
3 below zero is because that means the average
4 relative valuation of those programings is actually
5 lower than the control group of the non-claimant
6 minutes.

7 JUDGE STRICKLER: So it doesn't mean that
8 those programs -- well, I don't want to characterize
9 --

10 THE WITNESS: It doesn't mean there is no
11 value. It means that relatively their value is
12 lower in those years than even the benchmark
13 claimant group -- the benchmark non-claimant group.

14 JUDGE STRICKLER: And I think for the
15 record I misspoke. I think you had a positive
16 coefficient for the 2017 year. It was only 2015 and
17 '16 where you have the negative coefficient.

18 THE WITNESS: Yes, that is correct. Yes.

19 JUDGE STRICKLER: Thank you.

20 THE WITNESS: And I just to add to that,
21 sir, because it is relevant, is so I did this test
22 but then the correct way to handle it is to say,
23 well, does the test tell me I can repool the
24 coefficients together?

25 If I pool them back together, which is

1 what I show in Figure 14, basically everything can
2 be pooled back together, except Joint Sports. But
3 Joint Sports for the second period you get a
4 positive coefficient on those three 2015, 2016, 2017
5 on average, but it is still statistically
6 insignificant.

7 So, again, think about what I am doing.
8 I am parsing the model as finely as I can with these
9 year effects. Then I'm using the statistics to tell
10 me is it appropriate from a statistical perspective
11 to calculate an average and pool them back together?
12 That's the insight of the test.

13 JUDGE STRICKLER: Is that different from
14 what Professor Crawford -- Dr. Crawford did? Did he
15 pool over the four years or did he come up with a
16 number for each of the years?

17 THE WITNESS: I believe Dr. Crawford had
18 a pooled value across the years.

19 JUDGE STRICKLER: I see. Thank you.

20 BY MR. DOVE:

21 Q. Dr. Johnson, just to finish up with this
22 example, why would you report statistically
23 insignificant results?

24 A. Well, first of all, because I'm being
25 honest. This is what the results show. But, most

1 important, the WGN -- you saw my key takeaways. The
2 WGN takeover is important -- takeover -- the WGN
3 takeaways, it's an important issue.

4 I wanted to make sure that the panel
5 could understand this is what the data shows me with
6 respect to the valuation; the limitations of the
7 model and the strengths of the model. I can pick up
8 the WGN conversion and I can pick up the model and I
9 can estimate an average value across the four years,
10 but the action is on 2014, has a much larger value,
11 and the other three years has a much tinier value,
12 if not zero overall in the model.

13 BY MR. DOVE:

14 Q. Dr. Johnson, have you heard of the term
15 P-hacking before?

16 A. I have.

17 Q. And is that related to statistically
18 insignificant results?

19 A. Well, my understanding of P-hacking --
20 and there's a lot of different contexts -- but, yes,
21 one of the things that P-hacking is you supposedly
22 run lots and lots of models to get -- until you find
23 statistically significant results.

24 Q. And are the tests on your regression
25 model an example of P-hacking?

1 A. No, it's the opposite. In my primary
2 report, on page 57, in the primary sensitivities, I
3 report a series of sensitivities, each which have
4 statistically insignificant results for certain
5 claimants.

6 That's the worst P-hacking anybody has
7 ever done, if that's the case. I'm showing the
8 results as they are because I'm trying to show what
9 does the model show, where are the limitations? And
10 when I put forward an average that is statistically
11 significant, what's under the surface of that?

12 Q. And so what should we make of the claims
13 of certain experts from the Settling Devotional
14 Claimants that you and your team engaged in
15 P-hacking?

16 A. I don't think that's fair. That's not
17 what we did. I will address that a little bit more
18 later, but that's not what I did. And, again, when
19 the primary specification I put forward has
20 statistically insignificant results, I don't
21 understand how that's consistent with P-hacking.
22 I'm not hiding anything. I'm actually showing
23 exactly where the model and the average comes from.

24 Q. Thank you, Dr. Johnson.

25 MR. DOVE: Your Honors, this is a good

1 breaking point in my outline. It also appears to be
2 about lunchtime.

3 CHIEF JUDGE SHAW: That's right. I
4 deduced the same thing. So let's take lunch. We're
5 on the public record. We'll come back on the public
6 record. And I'll see you all at 2:00 o'clock.
7 Thank you.

8 (Whereupon, at 12:57 p.m., a lunch recess
9 was taken.)

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

2 (1:59 p.m.)

3 (Recording in progress.)

4 CHIEF JUDGE SHAW: Welcome back from
5 lunch, everyone. And we're on the public record.
6 And we can continue with the examination of the
7 witness, unless there's something else.

8 MR. DOVE: Thank you, Your Honor.

9 BY MR. DOVE:

10 Q. Dr. Crawford, I would now like to turn to
11 the subject of fixed effects and ask you about -- if
12 there were any other tests you would like to
13 highlight for the Judges today as it relates to
14 fixed effects or any other issue.

15 A. Yes. I think that, you know, the fixed
16 effects issue is one that I have identified, one
17 that Dr. George identified. It's one that I think
18 is worth discussing and trying to explain because I
19 think it is an important one with respect to the
20 econometric model.

21 In the prior proceeding, one of the
22 issues with Dr. Crawford's model that was raised was
23 an issue called --

24 JUDGE RUWE: Excuse me. Is Judge
25 Strickler in? I'm not seeing him. I think we need

1 to make sure.

2 MR. DOVE: Good point.

3 THE WITNESS: I agree, Your Honor.

4 JUDGE RUWE: I'll send an e-mail.

5 MR. SACK: I do see that Judge Strickler
6 is in the meeting.

7 JUDGE RUWE: Thank you.

8 THE WITNESS: Judge Shaw, you may have
9 been trying to say something but were on mute.

10 CHIEF JUDGE SHAW: Well, I was just
11 saying I would like to pin the three Judges to the
12 side of my screen, and I think I'll do that, because
13 I keep losing people in the gallery.

14 But we're all together, so do let's
15 continue.

16 MR. DOVE: Thank you, Your Honor.

17 BY MR. DOVE:

18 Q. Dr. Johnson, what other tests would you
19 like to highlight for the Judges today?

20 A. I would like to focus on the fixed
21 effects issues and sort of try to explain those. I
22 think those are important, and I think they actually
23 are -- particularly explain the difference between
24 the two -- what I have determined -- view as the two
25 primary econometric models, that of myself and

1 Dr. George.

2 Q. And what is a fixed effect?

3 A. Okay. So a fixed effect is an
4 econometric term for another one of the explanatory
5 variables in the regression. But as opposed to
6 constructing one that is a variable like number of
7 subscribers, these take one/zero values, and they
8 basically are meant to represent whether or not a
9 certain condition exists.

10 So the simplest example would be, in a
11 discrimination case, you might have a gender
12 coefficient that equaled 1 if someone was a female,
13 and zero if one was a male.

14 In a context of this fixed effects, we're
15 going to talk about having a fixed effect for
16 different levels of decisionmakers within the cable
17 companies, included in the models.

18 Q. And just so we have another definition on
19 the slides, "overfitting," what is over fitting?

20 A. So one of the things that we always try
21 to trade off when we do econometrics is are we
22 including so many variables in a regression that we
23 have so tightly fit the data that, although we can
24 draw some conclusion about the sample we have, it
25 doesn't have any real generalizability. It's so

1 specific, it's so quote, unquote, "overfit" that
2 it's not as useful for the purposes of understanding
3 the estimates.

4 And this is a particular problem when you
5 have lots of fixed effects because if you have many,
6 many fixed effects, you can confound the estimation
7 and that can actually hinder the model's ability to
8 perform the task at hand.

9 Q. And was there an overfitting issue
10 identified in the last proceeding?

11 A. Well, what I read about the last
12 proceeding and what Dr. Crawford had done is he had
13 included 7,300 system accounting period fixed
14 effects. That is quite a few fixed effects, given
15 the amount of data that was in his regression.

16 Q. And why is it an issue for a
17 Waldfoegel-type model to be overfitted with these
18 kinds of fixed effects?

19 A. Well, it's really about a tradeoff. What
20 we're trying to figure out is what is the meaningful
21 variation that we're going to use to estimate the
22 regression coefficients versus that which we're
23 going to control.

24 And so when we talk about fixed effects
25 and including fixed effects, what we're really

1 talking about is the loss of meaningful variation.
2 We're trying to capture decision-making and relative
3 comparisons with the regression.

4 So the tradeoff you have to make is the
5 amount of loss of meaningful variation, what
6 decisions are you comparing, versus the other risk,
7 which is a bias. And so the idea of bias is that by
8 excluding something that's important, excluding a
9 key variable, you might be misattributing the value
10 of the minutes, something as a value of minutes
11 when, in fact, it's something else that you should
12 have included for in your model. So that's the
13 tradeoff, bias versus the loss of meaningful
14 variation.

15 Q. And apart from yourself, which other
16 expert offered approaches addressing this
17 overfitting issue?

18 A. Dr. George.

19 Q. And how would you characterize the main
20 differences in your approaches?

21 A. Well, we both identify the overfitting,
22 but as two different economists tend to do, we both
23 had sort of different approaches. I removed the
24 system period fixed effects accounting -- sorry, the
25 system period fixed effects to remove the risk of

1 overfit. That's one possible solution.

2 Dr. George decided to include a different
3 level of fixed effects. She includes 860 system and
4 accounting period fixed effects to control for what
5 she thinks are hypothetical supply and demand
6 factors.

7 So we kind of have the two different
8 approaches, one least risk of overfitting but
9 perhaps risk of bias, other most risk of overfitting
10 but still potential for bias.

11 Q. So how do we address that balance? How
12 do you get at this question of not having too few or
13 too many variables?

14 A. Well, I think it is a tradeoff, but the
15 way I want wanted to approach it is to show the
16 panel exactly what the consequences are of this
17 tradeoff. So, first, I wanted to simply compare my
18 results with Dr. George's results.

19 Q. And how would you characterize the
20 results your and Dr. George's approaches to
21 overfitting yielded?

22 A. Well, first, again, I can report for you
23 what the point estimates are. That's the height of
24 the bars. And then I can report for you the
25 confidence intervals, whether or not these estimates

1 are different from each other on a statistical
2 basis. All right?

3 In the charts, you will see for each year
4 the implied royalty shares from -- for each
5 claimant, from the two different models. My models
6 are in blue. Dr. George's models are in yellow.

7 So the first thing I would point out is
8 that the models, from a statistical perspective, are
9 fairly close. In fact, I cannot distinguish the
10 estimates we have. They are statistically the same
11 for PTV, for Joint Sports, for the Devotional
12 Claimants, for Commercial, and for Program
13 Suppliers.

14 The only place where they are
15 statistically different is for the Canadian group,
16 and even there, they're only different in the last
17 three years.

18 Q. And I see on this chart where it seems
19 that these confidence intervals overlap. Is there
20 an issue with overlapping confidence intervals?

21 A. All right. Well, if we go back to my
22 attempt to describe the confidence interval before,
23 these are called box and whiskers, but the short of
24 it is these little boxes with the line, that tells
25 you the confidence interval. So on the first line,

1 the 2014, the purple line, when you get to that
2 little black line with the little bar at the bottom
3 and the top, that's the confidence interval.

4 So any time you see the lines overlap,
5 for example, my blue bar and Dr. George's yellow
6 bar, that means that they're not statistically
7 different from each other. So that's what the
8 confidence intervals are.

9 And so that's why when I say the only
10 ones where statistically I see a difference is when
11 I compare the Canadian shares for 2015, 2016, and
12 2017, where the Canadian shares are larger, and that
13 is a statistically significant difference.

14 Q. And is this difference between
15 Dr. George's model and your model evidence of
16 omitted variable bias?

17 A. No, I don't think that's what it is. I
18 think what it shows is that we have these different
19 approaches to trying to trade off between how
20 closely fit the data is, the "overfitting," the
21 appropriate level of fixed effects, versus allowing
22 the variation to factor into the estimation in the
23 most unconstrained way possible.

24 Q. So, you know, let's talk a bit about the
25 difference between your results for the Canadian

1 claimants in 2015 to 2017. Can you describe those
2 differences?

3 A. As I said, the differences are that for
4 the Canadian Claimants, Dr. George's model does give
5 higher shares for the Canadian Claimants, and that
6 is a statistically significant difference. For all
7 other years, our estimates are not distinguishable
8 from each other from a statistical perspective.

9 Q. And what do these differences suggest
10 about potential omitted variable bias? Did you run
11 any testing related to that?

12 A. Well, I did test because I wanted to see
13 what was driving it, and I thought it was important
14 for the panel to understand, here are the things
15 that are driving the estimates with respect to the
16 fixed effects comparisons.

17 Q. And what are some tests that the other
18 experts have conducted regarding fixed effects?

19 A. Well, one of the experts, Dr. Bennett,
20 performed a Hausman test, which is a form of a test
21 to determine whether fixed effects potentially
22 belong in a regression or not.

23 Q. And how do you respond to Dr. Bennett's
24 claim that the baseline Johnson model uniformly
25 fails the Hausman test, which indicates that a

1 regression model without fixed effects is not
2 statistically preferable?

3 A. Yeah, I think Dr. Bennett has slightly
4 misinterpreted the results of the test. Jerry
5 Hausman was my econometrics professor. I understand
6 the test well. What is true is that in a world
7 where you are dealing with is the model unbiased and
8 you make certain assumptions, it is true that the
9 fixed effects will result in saying, oh, there's a
10 difference in these coefficients. We know that
11 simply by looking at this chart. We see that
12 there's a difference in at least some of the
13 coefficients.

14 That's different than the test being
15 probative of the issue we're going to care about
16 here, which is what is the tradeoff between the
17 variation we're going to exclude from the estimation
18 and the potential bias from failing to include
19 certain supply and demand factors?

20 Q. Before we get into more detail on fixed
21 effects and what they are, let me ask you a more
22 general question.

23 Is it typical for economists to debate
24 one approach to fixed effects or another as more
25 appropriate? Is that typical?

1 A. Yes, I think that is. This is an example
2 of the type of, I'd say, econometric debate we
3 regularly have. We each are coming at this with a
4 sort of a view of the data and we're trying to
5 rectify what is the right approach given the
6 circumstance were in. Where we don't have a
7 hypothetical marketplace, what are the tradeoffs.

8 Q. So focusing in on this particular case, I
9 think, first of all, we're well beyond what many of
10 us probably understand about regressions. Can you
11 walk us through an example of what fixed effects are
12 and what kind of tradeoff we are talking about here
13 in this particular situation of our case?

14 JUDGE STRICKLER: Before you answer, a
15 moment ago you said, Dr. Johnson, that we don't have
16 a hypothetical marketplace, what are the tradeoffs.
17 Did you misspeak when you said we don't have a
18 hypothetical marketplace?

19 THE WITNESS: I meant we do not have an
20 actual marketplace, Judge. I'm sorry. Thank you.

21 JUDGE STRICKLER: Okay. I wanted to make
22 the record clear.

23 THE WITNESS: Thank you, sir.

24 Okay. So what I thought would be
25 instructive is to try to explain the logic behind

1 the fixed effects because I think if you can
2 understand the logic, hopefully I can help explain
3 what is the variation that when we include fixed
4 effects, we're including or excluding for the
5 purposes of estimating.

6 Now, throughout when we talk about fixed
7 effects, the choices for the fixed effects here are
8 going to be those levels for the cable systems, the
9 MSO, the MSO subsidiary, the CSO.

10 This is an illustration of the variation
11 under Dr. George's CSO fixed effects model. All
12 right? Her model has a single control variable for
13 CSO code Verizon Buffalo, New York and another
14 control variable for Verizon Syracuse, New York and
15 another for Verizon Albany, New York, another for
16 Verizon New York, New York.

17 The question the model will ask -- to the
18 extent a model asks questions -- the variation the
19 model lives off of here is how does variation in the
20 decisions within the Verizon Buffalo CSO reflect
21 something about relative value?

22 In other words, within each CSO, we are
23 looking at the decision-making for that purpose. So
24 Verizon, Verizon New York, Verizon Buffalo, Verizon
25 Syracuse, Verizon Albany. Dr. George has over 860

1 fixed effects in her regression.

2 Now, what it doesn't do, when you include
3 those fixed effects, the model will not make a
4 comparison as to whether programming overall in
5 Verizon Buffalo, New York is more in demand or less
6 in demand than information about Verizon New York,
7 New York. You're excluding that variation.

8 So when you talk about excluding
9 variation from the model, that's what we're talking
10 about. It can only make comparisons within a CSO.
11 That is the most restrictive form of the fixed
12 effects.

13 BY MR. DOVE:

14 Q. Well, does Dr. George's use of CSO code
15 fixed effects balance overfitting versus the model's
16 ability to study variation across CSOs?

17 A. No. I think Dr. George has taken a
18 position that she has made this tradeoff that she
19 thinks the risk of bias is far greater than the
20 importance of including the variation. I disagree
21 with that. I think that this is too granular of a
22 level of fixed effects and you are losing valuable
23 information about decision-making across CSOs in --
24 over time.

25 Q. And what's the implication or outcome of

1 this in terms of royalty shares?

2 A. Okay. So what I wanted to do is show
3 you -- and I'm going to show some pie charts with
4 the royalty shares that I'm going to show a summary
5 at the end with all of these, but these are from my
6 rebuttal report. But what I did is I showed the
7 baseline model with no CSO fixed effects and the
8 royalty shares calculated, and I showed Dr. George's
9 results with 860 CSO code fixed effects.

10 I would couch these as here are your two
11 extremes for dealing with the overfitting issue,
12 least risk of overfitting being my model, most risk
13 of overfitting being Dr. George's model.
14 Dr. George, to be fair to her, I think would say her
15 model has the least possibility of bias. I disagree
16 with that, and I'll explain why in a second. But
17 that's the range. All right? So this is what the
18 effect of the inclusion of the CSO fixed effects
19 does.

20 When Dr. Bennett says, well, the Hausman
21 test says that these results, the fixed effects
22 belong to the model, what it actually just tells you
23 is whether there are statistically significant
24 differences. Those Canadian differences that I
25 showed you before would drive a Hausman test.

1 So that's what this means.

2 Q. And so, you know, you just gave us an
3 example to explain CSO-level fixed effects. Are
4 there other fixed effects levels to think about?

5 A. Yes. So the next level you could think
6 about is the MSO subsidiary fixed effect. So MSO
7 subsidiary says let's take Verizon New York, Inc.,
8 right? Verizon New York, Inc. includes Buffalo,
9 Syracuse, Albany, New York, New York, all right?

10 And what we're going to do is say let's
11 look at the variation in carriage decisions within
12 Verizon New York, Inc. to determine relative value.
13 That's going to allow those comparisons between
14 Buffalo, Albany, Syracuse, and New York City.

15 But what it won't allow is, for example,
16 a comparison with the other level fixed effects,
17 Verizon Virginia. There will be no comparison
18 between the variation for Verizon Virginia and the
19 variation Verizon New York.

20 In other words, to the extent the
21 decision-making of the cable operators is relevant,
22 there's relevant variation that demand for
23 programming within the New York MSO subsidiary tells
24 us something different and meaningful relative to
25 the Verizon Virginia, the model can't capture that.

1 Q. Is this just another form of overfitting?

2 A. It could be. This is a less -- there are
3 fewer fixed effects. So as you go from more to less
4 fixed effects, you run less risk of overfitting.

5 Q. And what's the implication or outcome of
6 these MSO subsidiary fixed effects in terms of
7 royalty shares?

8 A. Okay. Now I'll show you here that the
9 royalty shares actually move closer to each other,
10 again with my baseline on the left with no MSO
11 subsidiary restriction, versus now including --
12 versus 860, 442 fixed effects. You can see that the
13 estimates have moved closer to each other. Again
14 I'll give you the total numbers in a second, but
15 here you see 48 percent for PTV, with its
16 44 percent. You can see for Canadian, 6 percent
17 without the fixed effects, 10 percent with. You can
18 do that for each of the claimants.

19 So now you see the estimates have moved
20 closer to each other, but a more intermediate level
21 have fixed effects allowing for more potential
22 variation, and then the question is, well, does that
23 mean there's more bias or not?

24 Q. Is there another fixed effects approach
25 that you tested?

1 A. There is. So you can go one step up
2 further. You could look at MSO. You could say
3 let's take all the variation in the carriage
4 decisions within Verizon over time, and what does
5 that tell us? Let's compare that to all the
6 variation over time within Comcast. All right?

7 So now you're going to get the MSO
8 subsidiary and the CSO variation factored in a
9 relevant comparison across the Verizon entities and
10 a relevant comparison across the Comcast entities,
11 but you won't compare Verizon to Comcast in their
12 decision-making.

13 Again, this might be problematic because
14 of the situation here where you see where there's
15 actually this overbuilding between Verizon and
16 Comcast. But the point is you can go up one level
17 and now you're allowing even more variation, but,
18 again, it's possible, at least, that there could be
19 more bias.

20 Q. And what's the implication or outcome of
21 these MSO fixed effects in terms of royalty shares?

22 A. Well, when I include the 177 MSO fixed
23 effects, you see actually the shares don't move very
24 much at all from the baseline. This actually gives
25 me a lot of confidence that the bias issue is not

1 very serious here. You see they're actually very
2 close.

3 So here is an example of something where
4 you can sort of strike a middle ground between
5 Dr. George's estimates that include 860 fixed
6 effects and mine that don't include the fixed
7 effects, and you see the results still are very
8 similar.

9 Q. And what does all this testing tell you,
10 if anything, about admitted variable bias in your
11 model?

12 A. Well, the reason why I thought it was
13 important to go through the fixed effects is because
14 when we talk about control variables, we talk about
15 what's in the regression, the reality is the fixed
16 effects are most of the variation. The fixed
17 effects is where most of the things that are being
18 controlled for ultimately will change the results.

19 So by showing you the different levels of
20 fixed effects, you can see how, although two
21 different economists, we may disagree overall on
22 what the right level is, here's a series of
23 reasonable estimates, all of which, which are in a
24 close range at least statistically, and you can
25 exactly see what's the variation we're choosing, and

1 what's the potential for bias in each of these.

2 And given the importance of the
3 overfitting issue in the prior proceeding, I thought
4 this was the most clear way to try to explain to the
5 panel what the differences are.

6 Q. And just to put a finer point on it, does
7 your model suffer from admitted variable bias?

8 A. No, I don't think it does. I think this
9 test particularly shows that. The inclusion of the
10 MSO fixed effects does not suggest that the results
11 are biased.

12 Q. And, finally, Dr. Johnson, on this issue,
13 what does this slide show?

14 A. What I want to do, and this is in my
15 rebuttal report, I have offered an opinion where I
16 have lined up my baseline model, plus the various
17 iterations where you include the different levels of
18 fixed effects.

19 This, as you can see from the -- as you
20 go further to the right, you have more restrictive
21 approaches, ultimately to what Dr. George's model
22 is.

23 I have testified and I've offered my
24 opinion in my rebuttal report that each of these are
25 reasonable approaches. I think my baseline model is

1 the best approach because I think it risks the least
2 amount of overfitting. However, I don't think it's
3 unreasonable that MSO period fixed effects could be
4 considered or MSO subsidiary.

5 And, in fact, I report in my rebuttal
6 report versions of the royalties for all of the
7 claimants with each of these versions of the models
8 in the appendices. And I do think they are
9 reasonable alternatives, though I think my
10 alternative, my choice is the best one.

11 Q. Thank you, Dr. Johnson.

12 Now I'd like to move on to your
13 assessment of the opinions of the other experts in
14 this case. What other expert reports did you review
15 in this proceeding?

16 A. Well, there are a lot of experts in this
17 proceeding, as the panel is about to become quite
18 aware. Dr. Majure, Mr. Harvey, Dr. Asker,
19 Mr. Trautman, all for the Joint Sports Claimants;
20 Dr. George for the Canadians; Dr. Bennett, Dr. Marx,
21 Dr. Tyler, Dr. Gray, Dr. Erdem, Mr. Sanders, and
22 Dr. Rubinfeld. I reviewed all of their testimony.

23 Q. And when you say you reviewed all their
24 testimony, that's any direct testimony or rebuttal
25 testimony?

1 A. Direct, rebuttal, and supplemental
2 testimony, yes.

3 Q. And before we get into the specifics, can
4 you describe the types of claims you saw in these
5 reports relating to your analysis?

6 A. Yeah. There were three broad sets of
7 claims. The first has to do with accusations that
8 the methodology, the way I developed the methodology
9 with my team, was results-driven. This is the data
10 mining model specification search accusations.

11 The second has to do with the
12 Waldfogel-type regression. It's supposedly not
13 applicable anymore because of the change in the WGN
14 conversion, the number of minimum fee payers in the
15 new 2014 to 2017 period, and the must carry concept
16 for Public Television.

17 Then the third bucket are supposedly what
18 I call technical issues with my baseline model.
19 They're a little hard to generalize because there's
20 different types, but I'll go through those as well
21 to describe to the best of my ability what they
22 are -- what the econometricians and other experts
23 are opining and what my answer is for those.

24 Q. And to what extent will you be addressing
25 all of the points made by all of the other experts

1 in your testimony today?

2 A. I don't think I'll be addressing all of
3 the points, just simply on time. I think I'm
4 addressing the major points and quite a few. But to
5 the extent I don't address a point, of course, I'm
6 happy to answer any questions from the panel. And
7 you should not take the fact that I didn't mention a
8 specific point to mean that I agree with it for this
9 purpose.

10 Q. What is your conclusion after reviewing
11 all of the testimony by the aforementioned experts?

12 A. Well, I have looked at them closely, and
13 there are a wide range of critiques. I have
14 assessed directly whether they are relevant. I have
15 provided analyses that demonstrate that my model
16 does not -- is not affected by them, does not change
17 by them. In some respects, they're just simply
18 wrong and in error.

19 Q. So let's start with your first type of
20 claims that you saw and discuss the process by which
21 you determined which of your regression models was
22 most reasonable, what you called model search on
23 this slide.

24 Could you please tell us about what you
25 did to make your regression model and research

1 process available for review by the other experts?

2 A. Yeah. So when I submitted my first
3 report, I obviously thought about what went into the
4 report. I did consult with counsel about what the
5 evidentiary standards were.

6 I followed the -- what I understood to be
7 consistent with the Federal Rules of Civil Procedure
8 and did the same thing I have done in all of my
9 econometric testimony, where I turned over the
10 regressions in my report and turned over the
11 programming and code to replicate those regressions.

12 Shortly thereafter, counsel informed me
13 that, in fact, I had needed to turn over other
14 things I had looked at, and so we turned over
15 materials we had with respect to PowerPoints, things
16 that we had recorded that sort of depicted and
17 demonstrated my process.

18 I also, at the time of my initial expert
19 report, turned over nine original regressions.
20 Within the two weeks of my report being submitted,
21 before there were any motions, I turned over the
22 PowerPoints with many other regressions that I had
23 considered.

24 Then I was later informed there was a
25 motion to compel. My team and I met with the

1 lawyers. We had five lawyers in our office with
2 everybody that worked on the project. We spent two
3 weeks. We left no stone unturned. We turned over
4 every e-mail. We had a systematic search done, a
5 keyword search. The president of our firm took
6 charge of the process. We turned over terabytes of
7 data. We turned over every single thing we had in
8 our files, whether they were testifying or
9 consulting, whether I had seen them, not seen them.
10 We turned over everything, because we wanted to
11 comply, we were asked to comply, and we wanted to
12 make sure I had a chance to explain exactly what we
13 did.

14 Q. And, Dr. Johnson, broadly speaking, what
15 is your understanding of the reasoning the Judges
16 gave for granting the order? And I'm sure they'll
17 correct you if you're wrong.

18 A. Yes.

19 Q. So what's your understanding?

20 A. It's dangerous to speak in front of the
21 panel and say how I interpreted your order, but I
22 think, as I read it, on the face, it's just simply,
23 look, the purpose of discovery is that you can probe
24 the thought process. It is important in this
25 proceeding. There is a lot at stake. This is a

1 process where these are technical econometric
2 issues. My understanding was you wanted to be able
3 to see everything that was considered, hands above
4 the table, all the cards are here. You will see
5 everything I did and everything my team did so you
6 could assess my work honestly, straightforward. I
7 could explain it to you and you'd be in the best
8 position to evaluate my testimony.

9 And that's what we've -- why we provided
10 everything, and that's what I'm trying to do today.

11 Q. And have you -- I believe you may have
12 already said this, but just to be sure, have you
13 reviewed the supplemental reports of Dr. Erdem,
14 Dr. Rubinfeld, Dr. Tyler, and Mr. Harvey filed on
15 February 16th, 2023?

16 A. Yes, I have.

17 Q. And we can address the specifics of those
18 reports shortly, but at a high level, what is your
19 opinion about those reports?

20 A. Well, the allegations of model search and
21 data mining are amongst the most serious anyone can
22 ever make against a professional econometrician. I
23 take my professional reputation incredibly
24 seriously. I have worked for two decades to build
25 it, plus all my years of schooling. I am frequently

1 cited as an expert that has actually very, very high
2 standards, regularly by courts.

3 And so I take this allegation very
4 seriously, and I don't take it slightly. It is the
5 most serious allegation one could make. But having
6 read their reports, but also more importantly,
7 knowing what my team did, we did not data mine, we
8 did not specification search. In fact, we did
9 exactly what a professional econometrician should do
10 when they're offering sworn testimony.

11 And I thoroughly disagree with the
12 conclusions drawn and particularly with the
13 conclusions drawn by Dr. Erdem and Dr. Rubinfeld,
14 who have not studied in any detail the actual
15 process and have drawn incredibly misleading
16 conclusions based on a partial reading of what was
17 turned over and a fundamental misunderstanding of
18 what I did.

19 Q. For a complex research project like this,
20 Dr. Johnson, could an expert run one model and just
21 be done?

22 A. I can't imagine a single case or
23 proceeding or even casual econometrics exercise
24 where you would run one model and you would be done.
25 That would be malpractice as a professional

1 econometrician. All right?

2 What we need to do when we're doing these
3 things we need to understand what the data is
4 telling us, we need to understand the types of
5 things that make the model work. I just spent time
6 talking about fixed effects, spent a lot of time on
7 fixed effects in my rebuttal report. I gave you
8 four different iterations of fixed effects.

9 The reason I did that is so you can
10 understand how the model works. That was my
11 purpose. I kept likening it to being a mechanic. I
12 open up the hood of the car. I want to know what
13 made that model tick. That's what I'm in a position
14 to explain today. That's what a professional does.

15 Q. And then -- and we touched on this
16 earlier this morning, but I just want to make sure
17 everyone understands sort of the process that you
18 went through in developing your model at sort of a
19 high level. I mean, could you walk us through that
20 process?

21 A. Sure. So, you know, the starting point,
22 as I said, is when I was retained in July of 2021, I
23 read the prior decision, I read Dr. Crawford's
24 report, I read Dr. Israel, Dr. George's report,
25 maybe Dr. Bennett's as well.

1 I looked closely at Dr. Crawford's
2 report. In fact, I -- one of the things we turned
3 over are my handwritten notes on the decision -- on
4 the -- Dr. Crawford's report from July of 2021. I
5 originally had thoughts about this model that I just
6 sort of started to react to.

7 I tasked my team with you need to collect
8 the data and we need to figure out how to replicate
9 the model. Again, as I have said before, we did not
10 have access to the 2010 to 2013 data, did not have
11 access to any of Dr. Crawford's programs, did not
12 have access to any of Dr. Bennett's programs. So we
13 were starting from scratch with respect to reading
14 the reports, trying to replicate what he did.

15 That was the assignment I gave my team,
16 and it took a long time.

17 Q. And does your team undergo any training
18 at Edgeworth for dealing with data and dealing with
19 these sorts of projects?

20 A. Absolutely. I mean, my firm works on a
21 number of large, giant data-saving engagements.
22 Almost every type of thing we work on at our firm
23 deals with giant, complicated data sets.

24 So we have extensive training for
25 everybody from the day they get there. We have

1 training on how do we deal with data? How do we
2 document records? How do we communicate? How do we
3 communicate with experts? What do we do with
4 respect to keeping records?

5 We have a policy by which, in addition to
6 our very exhaustive training, our PowerPoints where
7 we go through things, we document, so things can be
8 looked at, retrieved.

9 We keep careful records. And we also --
10 our guiding principle is we're going to tell the
11 truth. We want to give our honest assessment of the
12 information we're looking at. And we do what we
13 have to, to do that.

14 Q. And is this sort of, again, teamwork,
15 training, and process, is this typical of the
16 econometric work for these types of complex matters?

17 A. Absolutely. The major econometric
18 consulting firms, the ones that do this work on a
19 daily basis, have the machinery in place because we
20 have to be precise. Our work is challenged
21 regularly in litigated proceedings. Our work in
22 consulting assignments is of great importance to our
23 clients, so these are the processes that are in
24 place.

25 We have very strict policies at my firm

1 but other of our competitors also have these
2 policies because we have to be careful. Our
3 reputation is critically important to our ability to
4 do our work.

5 Q. Dr. Johnson, you mentioned building data
6 sets and model development. And we did talk about
7 this some this morning, so I don't want to repeat
8 everything that was said, but, again, on the data
9 building side of things, could you please explain
10 how you and your team went about the data building
11 process, maybe with a little more granularity as to
12 what all is involved with that.

13 A. Well, I kind of went through the timeline
14 this morning, but I think it's important to give it
15 some perspective. As I said, we have a team of
16 individuals that are economics majors, computer
17 scientists, data scientists, Ph.D. economists, MBAs.
18 Basically to collect and build the data, that is
19 actually oftentimes one of the most labor-intensive
20 and most difficult parts of these engagements.

21 And so we have a process by which people
22 are tasked with building data sets. We had to
23 communicate. And Mr. Kheyfets was in charge of the
24 process, reporting to me, but we had to communicate
25 about when the data sets that were available, we had

1 to get them from vendors. There was involvement of
2 counsel to negotiate to get the data sets.

3 And then there is a lot of back and forth
4 to understand and try to interpret what do these
5 data sets mean.

6 Q. And then after the data work or in
7 conjunction with the data work, how did you and your
8 team go about the model development process? Again,
9 you have touched on it, but in a little more
10 granularity about the nature of what you did?

11 A. Well, look, I was starting with the idea
12 that there had been a prior proceeding, and there
13 was at least a candidate model from Dr. Crawford,
14 and we wanted to replicate that first.

15 So the first goal was could we replicate
16 that with the data? To replicate that, we had to
17 make sure we had the data built. At the same time
18 with an eye towards the fact that we were going to
19 need programming minutes, trying to understand the
20 basics of the industry, the WGN conversion, how the
21 data looks, what type of data we have, and what
22 would go as the inputs into the econometric model.

23 Q. And through that model development
24 process, do you do any vetting of the model or
25 anything like that to get you, you know, more

1 focused on the issues you need to address?

2 A. Of course we do. The point is as we're
3 replicating it, what I am trying to do is go back to
4 my analogy of being under the hood of the car. I am
5 trying to understand how do the parts fit together.

6 I ask my team to replicate the model and
7 I ask my team to give me an assessment where I can
8 see what are the things that are moving the model in
9 terms of the results, in terms of the stability,
10 what is it that matters about this model?

11 And I am trying to mesh that at the same
12 time -- and this is where the iterative part comes
13 in -- with my preconceived notions that, well,
14 having read Dr. Crawford, things like subscribers,
15 that seems like that's the demand factor. Things
16 like local stations or median income, those seem to
17 be conflating demand factors.

18 And then there is some that I just can't
19 understand at all, why are they in Dr. Crawford's
20 model? So I am thinking about that as I am also
21 trying to understand what they are doing
22 statistically. Those two things go hand in hand as
23 I'm trying to assess the model.

24 Q. Now, as part of this model development
25 process, do you feel like you have to weigh in or

1 review every single analysis or decision that's
2 being made by your team?

3 A. No. Look, we have check-in points. It
4 is absolutely the case that from the part of the
5 data building, short of Mr. Kheyfets and I regularly
6 communicating, I do not weigh in very much on the
7 data building while the process is going on until I
8 am at the point where I have a fairly substantially
9 complete data set.

10 With respect to regressions, I want to
11 look at things once I have a data set that is at
12 least close to what I think is going to be complete.

13 And so from the time that the data set
14 gets built, there is a stretch of time where other
15 than my interaction with Mr. Kheyfets down the hall,
16 I am not as involved with the data building process.
17 But once we get to February, which is about six
18 months out from my report, this is where my role in
19 earnest now starts that now I have data and I have a
20 replication of Dr. Crawford that I can rely on to
21 begin the thought process for me, what are the
22 levers that are actually affecting this model? What
23 are the key issues? Can the model work in this
24 context? And what is the best estimate of
25 royalties, given the constraints we have?

1 Q. If we could turn to your next slide
2 labeled Principled Model Development Versus
3 Cherry-Picking. And I see there is a quote there on
4 P-hacking. And we touched on that earlier.

5 Can you explain what this quote on this
6 slide means?

7 A. Well, P-hacking is one form of allegation
8 that's made against a researcher where they claim
9 that you collect and select data or statistical
10 analyses until non-significant results become
11 significant.

12 This is in a -- you know, similar to
13 cherry-picking because you just throw things at the
14 wall to see what sticks.

15 Q. And this quote on P-hacking, where does
16 that come from?

17 A. It comes from my book called "Everydata:
18 The Misinformation Hidden in the Little Data You
19 Consume Every Day."

20 Q. And what can you tell us, Dr. Johnson,
21 about the other experts' concern about potential
22 P-hacking with respect to your analysis?

23 A. Well, Dr. Erdem, in particular, makes
24 this allegation of P-hacking. And it just doesn't
25 make sense to me. First of all, as I explained this

1 morning, I reported nine regression results in my
2 initial report. And in Figure 14, of the ones that
3 I highlighted particularly for the panel, two of the
4 three or four there had statistically insignificant
5 results. Right?

6 The idea of P-hacking into somehow we
7 have to keep running results until we get
8 statistically significant values, not hiding the
9 statistical significance level. Overall, the
10 statistical significance level here is actually
11 quite high, but also along the way, for example, as
12 the data set keeps changing and evolving, that's
13 another way that you're sort of making sure you're
14 not P-hacking.

15 And there is another step where we began
16 to, what is called, clustering the standard errors
17 at the very end of the process, which is a
18 correction to account for various statistical
19 properties of the standard errors, things like
20 heteroscedasticity, things like the variation across
21 the groups.

22 And when we do that, that would have the
23 effect of actually making the standard errors
24 bigger, not smaller. In other words, our correction
25 we made in the last stretch would have actually been

1 against P-hacking as well.

2 So there is no evidence of P-hacking
3 here. That's not what we did. We do report
4 statistically significant and significant results.
5 We did pay attention to statistical significance.
6 In the prior decision, the panel did ask about how
7 to interpret statistically insignificant results,
8 but that's different than saying the entire exercise
9 was driven by running results until we found one
10 that had statistically significant values.

11 JUDGE STRICKLER: I have a question for
12 you, Dr. Johnson.

13 I believe in your written testimony you
14 stated that you relied on nine regressions in
15 forming your opinion. Can you explain how those
16 nine regressions relate to what are apparently
17 hundreds of regressions that were run and conducted
18 by your staff prior to you coming on what you call
19 onboard?

20 THE WITNESS: Right. So I am actually
21 going to do that in fairly gory detail, Your Honor.
22 So I don't know if you want to wait a minute, but
23 let me just say at a high level, I reported nine
24 regression. I actually did look at others, which I
25 have also turned over and I will describe in a

1 second.

2 I am going to walk you through the
3 chronology of the other regressions and explain
4 exactly where they were run, what their purpose was,
5 and how they fit into the data building process.

6 But ultimately the set of regressions
7 that I have considered and relied upon, you have
8 everything that my team did as well, but we go from
9 having a data set in February 2022 that is closer to
10 what we think and the Crawford replication and then
11 the several regressions that I actually have in the
12 PowerPoint presentations, I turned over two weeks
13 after that I looked at, plus other regressions in
14 the other PowerPoint presentations that I turned
15 over.

16 So I have reported nine sensitivities.
17 That's different than I only looked at nine
18 regressions. I mean, I actually looked at more and
19 I turned those over. And then actually within weeks
20 I turned over the code for every regression the team
21 ran. Dr. Erdem didn't run those. That's when the
22 motion to compel occurred.

23 JUDGE STRICKLER: Thank you.

24 BY MR. DOVE:

25 Q. So, Dr. Johnson, with that background,

1 could you explain specifically your involvement in
2 this project as the principal investigator? And we
3 have up here a PowerPoint slide that was produced
4 from this case.

5 A. Well, this gives you the insight into how
6 my team and I worked together. As I said I
7 started -- you have the notes from my initial
8 assessment of Dr. Crawford's model -- in 2021.

9 The team is building data. It's time,
10 the data is getting close to being built, we're
11 about six months before my report is due. It is
12 time for me to more fully engage now on the
13 econometric exercise.

14 I asked my model -- my team to present
15 the results of the replication and various
16 iterations of the replication, so that I can start
17 to look at results.

18 We have a meeting on February 23rd where
19 we go through a set of results. And I can talk you
20 through exactly what we looked at.

21 Q. So these meetings in February of 2022,
22 why did you meet with your team in that time?

23 A. Well, the data was, we thought at the
24 time the data was largely complete. We still have
25 the full checking process of the data by an

1 independent researcher, meaning another member of
2 the team who hadn't worked on data building.

3 And as it turned out, we still had
4 another CDC download of data. But by this point in
5 time we were fairly confident that we were matching
6 Dr. Crawford's counts of minutes pretty closely,
7 that the percentages were lining up better than they
8 had before.

9 So the first thing is the replication.
10 This is what I talked about this
11 morning, the out-of-sample testing, all right?

12 So basically I am going to run the
13 Crawford Model, the best I can on a completely
14 different set of data. And by doing that, I break
15 the link between any decision-making that was made
16 before. This is a form of an out-of-sample test.

17 So here is the results. Of course, the
18 data is different, the volume of minutes is
19 different, so I don't expect identical results, but
20 the point is this is what it looks like if you just
21 simply run the Crawford Model.

22 And you can see at the bottom my team and
23 I are discussing at the top the relative values, the
24 betas, and at the bottom the royalty shares that
25 that implies.

1 Q. And how would running Dr. Crawford's 2010
2 to 2013 model -- and actually, yeah, I mean, strike
3 that.

4 How would running Dr. Crawford's 2010 to
5 2013 model on the 2014 to 2017 data determine if it
6 was a valid starting point?

7 A. Okay. So if the model had been overfit
8 or there had been a specification search, when I use
9 it on the different data set, I wouldn't expect it
10 to give results that are reasonable in line, that
11 look like the others.

12 Now, again, I don't expect them to be
13 identical, and they shouldn't be identical because
14 things have changed, but the point is by being able
15 to run that result of these models, now to the
16 extent that the inclusion of the 7600 fixed effects
17 overfit the model, you no longer have that issue in
18 the same way, hopefully.

19 In the model had been highly engineered
20 specifically just for the data set, when I run it on
21 a different data set, I won't get it. So this is a
22 form of an out-of-sample test. And, again, this is
23 directly from my team talking about the
24 out-of-sample testing for me on this day, February
25 23rd. Right there, there it is. That's the

1 out-of-sample testing.

2 Q. And what did your team find in terms of
3 results from this starting point model?

4 A. Look, there were differences. The
5 biggest difference that I saw was the Public share
6 was up and the Sports share was down relative to
7 what it was before.

8 So, of course, I had already identified
9 the WGN issue. I had already identified the PTV
10 issue, so those changes seemed like they were going
11 to matter for the moment.

12 Q. Now, you have been calling the Crawford
13 Model a starting point. As of this February 23rd,
14 2022 meeting, where were you and your team heading
15 from that starting point?

16 A. Okay. Well, from the Crawford Model,
17 again, we were hired not just to blindly accept the
18 Crawford Model, but I viewed my assignment to be to
19 kick the tires to understand.

20 So working with my team, trying to think
21 about what are the key elements of the model, are
22 there improvements, are there things that could be
23 addressed? These were the topics that were under
24 consideration at the time.

25 One of the things that the team and I

1 were discussing was the notion of what is the right
2 measure on the dependent variable, what we're trying
3 to explain. Should it simply be royalties or should
4 it be royalties per subscriber, right? So we were
5 thinking about that issue.

6 And the reason this issue came up is
7 because in looking at some of the public
8 documentation on different actual marketplaces, came
9 off and found information royalty per subscriber.

10 We were thinking about whether that was
11 "more reflective of negotiation." Now, in order to
12 make a change to the model, I told the team we're
13 going to have to have a high standard, needed to
14 know that that was going to be justified both as a
15 matter of economics and, to the extent there was
16 statistical testing that could inform the question,
17 we needed to do it. So that was one issue we were
18 addressing.

19 The second issue was one directly
20 reflected in Figure 14 of my report, the WGN
21 conversion mattered. I wanted to best assess and
22 model possible changes in relative value over time.

23 I was considering the pooled model that I
24 put forward. I was considering the annual models
25 that I put forward. There was also then whether any

1 subsets of the data required further testing. A lot
2 of this had to do with making sure the programming
3 data was correct.

4 There was an issue with respect to
5 applying the base fee in the 3.75 fee royalty pool
6 separately or together. My instincts were that
7 this, given that PTV wasn't a part of the 3.75 pool,
8 they should just be separate. I don't think I felt
9 strongly. I was actually quite frankly a little
10 surprised by the number of experts that criticized
11 my choice to run them separately. So that's why I
12 ultimately ran them together in my rebuttal as well.

13 Then there was the issue of, all right,
14 Dr. Crawford put forward a model based on his
15 theory. We know the overarching theory is relative
16 value as revealed preferences, but then there are
17 certain variables in the regression. Why are they
18 there? What is the rationale?

19 One of the other issues we're dealing
20 with is loss of precision in the model. We want to
21 make sure that we are including those things that
22 are relevant so we don't have omitted factors, but
23 we also don't want to just include random extra
24 regressions. The inclusion of irrelevant factors
25 does not help with the model estimation. In fact,

1 it will make it much less precise. It will actually
2 blow up the standard errors.

3 So you have to make tradeoffs. So these
4 were the issues that my team and I were focused on,
5 as I am trying to work from Crawford replication
6 with the new data to what I am going to put in my
7 report in July of 2022.

8 JUDGE STRICKLER: Question for you,
9 Doctor. Excuse me, Mr. Dove.

10 You said you basically started off trying
11 to engage in a Crawford replication. Let me ask you
12 this: If there was no Crawford regression
13 beforehand, if there had been no fee-based
14 regressions at all in prior proceedings, would you
15 have thought that a fee-based regression was the
16 appropriate way to go?

17 THE WITNESS: Yes, I would. I mean,
18 look, it's a little hard to put myself in a world
19 without Dr. Crawford, the long history of the
20 proceeding, but, yes, I wouldn't -- I wouldn't be
21 here today endorsing a model of econometrics if I
22 didn't believe that a fee-based regression was an
23 appropriate way to do this.

24 I can't pretend that I came up with this
25 myself, obviously I am influenced by thinking about

1 what Dr. Waldfogel and Dr. Crawford did, but, no, I
2 do think this is a reasonable approach, given this
3 is a complex problem.

4 Again, I think I have tried to be hands
5 above the table, this is a hard problem that the
6 panel faces. I just think the regression is
7 probably the best we can do in this circumstance.

8 JUDGE STRICKLER: And one other question.
9 I think before when you were testifying a moment
10 ago, you said that when you were trying to determine
11 whether the dependent variable would be royalties or
12 royalty per subscriber, you told your team we needed
13 to meet a high standard.

14 What did you mean by high standard?

15 THE WITNESS: I mean if I am going to
16 offer expert testimony, I want to know first that we
17 have the institutional details right, that if the
18 entire base is for changing something to royalties
19 per subscriber, that I can rely both on record
20 evidence that that's the way negotiations are done
21 more often than not, and that the statistical
22 testing that would be appropriate, and in this case
23 I'm going to describe the Box-Cox test is going to
24 support making that change.

25 I don't like to do things that aren't

1 justified. I am careful and thoughtful about the
2 choices I make. And I always need to be in a
3 position that I can explain them. Reasonable
4 economists can disagree about things, but I want to
5 make sure that I am justified and I am making the
6 best decision I can. That's part of what I feel
7 like is my responsibility as an expert.

8 JUDGE STRICKLER: And you ultimately
9 settled on royalties, rather than royalties per
10 subscriber, correct?

11 THE WITNESS: Yes, logged royalties
12 because, in fact, I did not see that the various
13 evidence that my team had collected on this issue
14 was definitive on the royalties per subscriber. And
15 the Box-Cox test actually said that logged royalties
16 is the preferred specification and so that's what I
17 did. And that's why I didn't make the change.

18 JUDGE STRICKLER: So I guess it is fair
19 to say -- or you tell me -- that you part company
20 with Dr. Tyler who did royalties as a percentage of
21 revenues per subscriber group because that would be
22 more akin to royalties per subscriber? Is that a
23 fair statement?

24 THE WITNESS: In part. I actually part
25 ways with Dr. Tyler for a few reasons. One is the

1 justification for that was his inability to
2 replicate the Crawford Model in the 2014 to 2017
3 period, but that was a function of the data error he
4 made. And that was the part of his report that he
5 had to withdraw.

6 But, second, by using that percentage
7 subscriber measure, the royalty percentage, he has
8 just replicated the formula. I mean the problem
9 with Dr. Tyler's method is he essentially has
10 mechanically replicated the formula in a way that
11 there is no meaning to that.

12 And in some respects this is the same
13 problem that Dr. Erdem has, when Dr. Erdem very
14 fervently seems to advocate that it should be a
15 log-log specification, he seems to be missing the
16 point that that would essentially replicate the
17 formula.

18 So there is nuance but, no, those are the
19 reasons why I disagree with Dr. Tyler.

20 JUDGE STRICKLER: Thank you.

21 BY MR. DOVE:

22 Q. Dr. Johnson, we have been in the weeds a
23 little bit here so I want to step back. Can you
24 paint a picture for us of what these -- this team
25 meeting looks like? I mean, are you in a conference

1 room, somebody is presenting a PowerPoint, and there
2 is discussion? I mean, could you tell us what this
3 means?

4 A. So my primary office at Edgeworth is a
5 large conference room. I have a really big table.
6 I have a giant TV on the screen, like a really big
7 TV. I bring my team in. They present to me. We
8 are looking at PowerPoint. We're looking at
9 results.

10 I ask them to pull up code. I ask them
11 to pull up results and look at results. And you
12 have a discussion.

13 People in the meeting are the most senior
14 members of my team, Mr. Kheyfets, Dr. Colino, and in
15 this case, Dr. Cheng, who is a Ph.D. from Harvard
16 who I trust as an econometrician as well.

17 Q. And so as you are walking through this
18 PowerPoint and having this discussion, you know,
19 there is a first topic for discussion that we have a
20 slide for. How did you decide which measure of
21 royalties to use?

22 A. Well, I just addressed this a bit with
23 Judge Strickler, but basically the structure of the
24 dependent variable mattered to me. The team, and I
25 will say you will see this in the log of the

1 regression, the team was very focused on the
2 royalties per subscriber measure. And there was a
3 lot of time spent on that.

4 I had to make a decision as to whether I
5 thought that was a material improvement, and I
6 didn't think it was. And the two bases for that
7 were, as I said, the evidentiary record that that's
8 the way negotiations would have actually worked and
9 also the Box-Cox test, which tells me that using the
10 logged royalty was the better approach.

11 I wanted to point this out, though, that
12 this is from the February 23rd meeting.

13 Now, admitting that we're still
14 preliminary. If I had been choosing the highest
15 share, I would have picked royalties per subscriber.
16 That gave a higher share to PTV. That wasn't the
17 basis for the decision.

18 So you can even look at my notes at the
19 time as I am engaging in my thought process, to see
20 that the allegations that I was just maximizing
21 share have no merit. That was not the basis for
22 this decision.

23 The basis was the principled one with
24 respect to what could be supported with the record,
25 and what is it, what did the Box-Cox test tell.

1 Q. Dr. Johnson --

2 MR. MacLEAN: Your Honor, this is Matthew
3 MacLean for Settling Devotional Claimants. I object
4 to the last answer on the best evidence grounds. If
5 Dr. Johnson is going to describe his notes, then
6 those notes should be in front of us in an exhibit
7 so objection on best evidence.

8 MR. DOVE: My response on that will be
9 Mr. MacLean will have ample opportunity to
10 cross-examine Dr. Johnson on anything he wants to,
11 with regard to this.

12 CHIEF JUDGE SHAW: Well then why don't we
13 take it subject to cross-examination, and we can
14 revisit it.

15 BY MR. DOVE:

16 Q. Dr. Johnson, what else did you discuss
17 with your team during the February 23rd, 2022
18 meeting?

19 A. Well, one of the things I was trying to
20 figure out was the relative stability of the
21 results. And so, as I said, we have a series of
22 different control variables, and trying to figure
23 out what and how they work in the model.

24 I haven't seen the nuts and bolts of
25 these models before, so I want to see them. So I am

1 trying to understand if we look at these
2 individually, what seems to be moving relative to
3 the baseline.

4 So here is a series of models where I
5 have the team looking at individual controls, and
6 then I am reporting what the range of results are
7 here. The team is telling me here is how much the
8 results move across the models, right.

9 Overall the largest range is for PTV, but
10 most of the ranges are fairly narrow. So this is
11 sort of just giving me comfort that we can talk
12 about a lot of different things with which control
13 variables involved belong or don't belong, but for
14 the most part we're in a fairly narrow range, the
15 real drivers are going to turn out to be a lot more
16 about the fixed effects. That's a pretty big
17 driver.

18 But for the most part the results are in
19 a pretty narrow range. And this is what told me
20 that, but I also looked at these regressions. I
21 asked them to show me the actual results under the
22 slide.

23 Q. What does the row in the middle of the
24 chart which is labeled "add MSO indicators," what
25 does that show?

1 A. Well, that is the one with the MSO
2 indicators. Now, again, this is still a preliminary
3 version, the data is not finalized. There were
4 still -- it hasn't been through the checking
5 process, but this is the one that says here is where
6 the MSOs, this is what would move the results. This
7 is pretty similar to what I end up ultimately
8 showing you in my rebuttal report, where I actually
9 show this.

10 But that is where we're going to include
11 the MSO indicators.

12 Q. When was your final baseline model
13 considered?

14 JUDGE STRICKLER: Excuse me, before you
15 answer that, I just want to make sure I understand
16 the chart here on demonstrative 77 that was on
17 before.

18 THE WITNESS: Yes.

19 JUDGE STRICKLER: When you add something
20 like add number of local stations or add total
21 number of distant subscribers, that's total number
22 of distant stations or subscribers?

23 THE WITNESS: That one is the number of
24 distant stations. The baseline has subscribers in
25 it.

1 JUDGE STRICKLER: But that addition as we
2 go from line to line is not cumulative, that's the
3 effect of each one relevant to your baseline?

4 THE WITNESS: That is my recollection. I
5 have to go back and look at the code, sir. I'm
6 sorry, I don't have a photographic memory of that,
7 but my understanding is everything is relative to
8 baseline, yes.

9 JUDGE STRICKLER: If you could end up, if
10 you can confirm that for us, that would be
11 important.

12 THE WITNESS: Okay, great.

13 JUDGE STRICKLER: Thank you.

14 THE WITNESS: Yep.

15 JUDGE STRICKLER: Mr. Dove, you can
16 continue. Sorry.

17 BY MR. DOVE:

18 Q. Dr. Johnson, when was your final baseline
19 model considered?

20 A. Well, a lot of the final elements of the
21 model were there on February 23rd. Now, that
22 doesn't mean that I had settled on it, but the
23 various control variables, the set of things I was
24 considering, that was there.

25 There was an update to the data.

1 Basically when the data got updated, that did change
2 the ships and they did happen to go up for Public
3 Television and Program Suppliers, but that was a
4 data update.

5 But for the most part, the types, the
6 range of things I was considering was already there
7 because, again, I was starting from Crawford. I was
8 thinking about the reasonable effects. I was
9 thinking about was there things I could add or
10 change, but the universe was sort of there all the
11 way back in February.

12 Q. And just more specifically, what does
13 this chart show?

14 A. Well, this just shows the change in the
15 royalty share from the 2/23 log royalty model to the
16 7/1 log royalty model where you can see what
17 happened with the data update. It was an algorithm
18 change. There was a lot of issues with the data
19 algorithm, trying to understand what syndicated
20 programming was, trying to make sure we had it
21 right.

22 That's that complicated 57 million
23 programming minutes. That's what changed. And that
24 changed the results.

25 Q. So, Dr. Johnson, after the February 23rd

1 meeting to discuss the analysis with your team, you
2 met again with your team later in February; is that
3 right?

4 A. Yeah. Well, now we're starting to meet
5 much more regularly, but we had another formal
6 meeting with another presentation on February 28th,
7 2022.

8 Q. And just for the record, this is the
9 presentation that was admitted into evidence this
10 morning as Exhibit 3020.

11 A. All right.

12 Q. Continuing on, could we discuss your
13 thought process during your model development?
14 Strike that.

15 Continuing on, I just want to talk a
16 little bit more about your thought process and was
17 wondering whether you could give us an understanding
18 of the other experts' opinions about your process as
19 disclosed in their reports?

20 A. Sure. Before that, could we go back one
21 slide, please? There is one thing I wanted to point
22 out. So this particular presentation, February
23 28th, if you look at the substance of this, this is
24 where actually the team is showing me samples of the
25 assembled data.

1 You know, obviously I said I don't build
2 the data myself, but I need to understand it well.
3 I need to be able to ask questions, I need to
4 understand the kind of problems they have. So in
5 this particular PowerPoint, you will see -- and,
6 again, I didn't put them all into my slide,
7 obviously, quite a long presentation at this point,
8 but there are actually literally samples of CDC
9 data, of RedBee data, of the CRTC data, of how the
10 data sets fit together.

11 So here is another part of the process
12 where, yes, my team built the data, they document
13 what they did, they discuss with me, but now I have
14 a chance as the data is about to go into the final
15 checking process, the month where a different
16 researcher checks it, I again get to weigh in on,
17 okay, what's going into the regression, how does the
18 data look? It's another way that I get to be a part
19 of and understand what it is that undergirds the
20 regression model.

21 Q. So moving to the next slide, you have
22 prepared here, can you give us an understanding of
23 the other experts' opinions on this, and their
24 understanding of your thought process as disclosed
25 in their reports?

1 A. I will do my best. Dr. Erdem has taken
2 the opinion that he can simply take a log file of
3 regressions run by the team during the entire course
4 of the engagement, whether they were on the same
5 data set, different data sets, whether they were for
6 consulting or testifying purposes, whether they were
7 on data that was correct, data that was wrong, and
8 just indiscriminately plot points on a graph and
9 then mistakenly try to fit a line and claim that
10 this is somehow evidence that as time went on, the
11 share of PTV went up in my models and my model
12 search process, allegedly undertook a model search
13 that resulted in the highest possible shares for
14 PTV.

15 And Dr. Erdem goes on to basically say
16 that not only that, but I also did not select my
17 model and that my team selected my model, and that I
18 was not involved in my process. That's my
19 interpretation and reading of Dr. Erdem's opinion at
20 a high level.

21 Q. And what's your opinion in response as to
22 the usefulness or rigor of Dr. Erdem's analysis?

23 A. Well, as I said, I take these allegations
24 seriously, but it is hard for me to take the
25 analysis seriously because it is not serious work.

1 First of all, Dr. Erdem put forward this
2 chart. This chart comes from a log file, a log file
3 that my team keeps as a part of the research process
4 where they record every single thing that the team
5 does over time.

6 Dr. Erdem has extracted, however, in this
7 chart and has not shown that the log file was
8 organized by various tabs. And those tabs represent
9 over time changes, major changes in the data set.
10 And Dr. Erdem nowhere talks about the fact that he
11 has simply randomly picked dots, apparently not
12 having run these models, and said they all have
13 equal weight.

14 But as I explained that's not a serious
15 probing of what was going on or the thought process.
16 That simply taking a bunch of random points and
17 putting them on a graph.

18 Q. Well, why do you take issue with treating
19 every single regression as though they are all
20 equally important?

21 A. Well, first of all, they are not all
22 equally important. I went through this morning the
23 detailed process by which the data continued to be
24 updated and wrong. There were at least four
25 junctures where there were major changes to the data

1 because the CDC had not included the right types of
2 data, because the RedBee data first was not
3 complete, because we didn't have the syndicated
4 minutes coded properly such that we were
5 undercounting minutes.

6 We were trying to understand the
7 algorithm. There are a number of analyses that were
8 run and they look like regressions. They are
9 regressions, but they are for the purpose of testing
10 the data on an earlier version that is not yet
11 complete. They are diagnostic in that respect.

12 Dr. Erdem says every regression that was
13 ever run is clearly considered with only one
14 purpose. The question is actually not why are
15 regressions run to diagnose the data, because you
16 have to do that. Because when you don't, you make
17 data errors.

18 And when you make data errors, you have a
19 situation like Dr. Tyler where I had to withdraw a
20 large part of his report because the data was wrong.

21 Every other expert has a data error, but
22 they didn't undergo this rigorous process like my
23 team did. So the fact that Dr. Erdem points to this
24 as evidence of an improper process, I do take
25 umbrage at that because that's incorrect, but it

1 actually is worse because his conclusion with the
2 model numbers, Dr. Erdem does not have his
3 regression that supposedly captures time actually
4 representing time.

5 He has taken arbitrary model numbers but
6 ignored the fact that many of the models were run on
7 the same day at the exact same time and the same
8 program. He can't attribute a temporal analysis to
9 this. Many of these dots should all be at exactly
10 the same point in time but Dr. Erdem didn't look at
11 that. He just threw the data on the slide and drew
12 his lines.

13 It is misleading. It doesn't represent a
14 serious probing of my thought process.

15 Q. I believe you may have already given us
16 your entire assessment of Dr. Erdem's interpretation
17 of these trend lines, but I will give you one more
18 opportunity. Is there anything else, any other
19 response to how Dr. Erdem has interpreted these
20 lines?

21 A. Look, if you want to have a serious
22 discussion about what models were considered, what
23 are the levers that move the results, that's a
24 serious discussion that we can have; we want to
25 graph lines on data that is incomplete, data that

1 has large portions of the syndicated minutes
2 improperly accounted for in the data, we want to
3 take analyses that potentially have mistakes in them
4 because they are preliminary and the team hasn't
5 checked them. Dr. Erdem in his report points out
6 that there are inconsistencies in the log.

7 There are, because that was literally a
8 written log of anything anyone ran. So that if the
9 data changed they could go back and run them again
10 without reinventing the wheel.

11 So I have no problem talking about
12 results, and I have no problem talking about results
13 after a point of the data, showing regressions that
14 I think are reasonable to discuss, the range, but
15 this is drawing conclusions you simply can't draw.
16 And it shows no level of engagement in what actually
17 was done by my team to build and understand the
18 data.

19 Q. Dr. Johnson, we talked earlier about how
20 your team was processing significant amounts of data
21 through February, and that's when the model
22 development process began in earnest.

23 Do you have a slide that shows Dr.
24 Erdem's chart with Public Television results from
25 regressions starting at that point in time, in

1 February?

2 A. Yes. If we -- look, it is hard for
3 anyone to say here's every regression that I ever
4 looked at. There's no economist that ever does
5 that. When you submit a published paper, you submit
6 those regressions that are relevant to your results.

7 But if we took a date like February 2022
8 when the data is still moving, this is a reasonable
9 set of regressions, at least we could have a
10 discussion about what the range looks like and what
11 they are showing. And for the most part half of the
12 runs for this period forward were of the prior
13 models with no or minor adjustments.

14 A number of these models with the
15 relatively lower estimates are the Dr. Crawford
16 overfit models with the most fixed effects.

17 And then I did not just report one model.
18 I reported several models in my final report. I
19 reported more in my rebuttal report. So I have no
20 problem with saying here is a set of models, here's
21 a discussion that we can look at what they mean, but
22 that's different than saying that every single thing
23 anyone on the team ran over a year and a half in the
24 process of getting the data together, answering
25 consulting assignments, trying to understand a

1 regression that we did not have the benefit of being
2 a part of in the prior proceeding, it is incredibly
3 unfair.

4 It is actually a hallmark of careful and
5 thoughtful work. And that's partly why I take
6 umbrage at the accusation.

7 JUDGE RUWE: I have a question about this
8 matter. In the prior determinations, this Board
9 seems positively struck by the relative consistency
10 of the results across the regression analysis.

11 How might we look at consistency and
12 credit or, in a positive or negative light, in the
13 face of these kinds of --

14 THE WITNESS: I would go back to the
15 ranges that I presented. Obviously I showed you
16 that slide before, the 23rd, the ranges across the
17 shares across the reasonable set. I can point you
18 to the ranges I showed you with the fixed effects.

19 JUDGE RUWE: As you are addressing
20 another -- actually if you show me the other slide
21 if you guys could.

22 THE WITNESS: Go back.

23 JUDGE RUWE: Thanks. I thought that's it
24 but I wanted to be sure.

25 THE WITNESS: Just go back, please,

1 Dustin. So, for example, here is one example of the
2 range of the results. Again, the 23rd run, but
3 fairly consistent.

4 Then there's the, underlying the log,
5 there is the range of results for those.

6 And then of course there is in both of my
7 results, there's the fixed effects chart where I
8 showed the range of the results. That was Figure --

9 MR. DOVE: And while Dr. Johnson is
10 looking at that, for the record we're looking at
11 slide 77.

12 THE WITNESS: I'm sorry, Your Honor,
13 Figure 3 in my rebuttal report shows the range
14 across the fixed effects. So I think those are the
15 ones that I would turn to for the relative
16 consistency.

17 I'm sorry, Your Honor, did I answer your
18 question appropriately or at least satisfactorily?

19 JUDGE RUWE: You have addressed it.

20 THE WITNESS: Thank you, sir.

21 JUDGE RUWE: Thanks.

22 BY MR. DOVE:

23 Q. Just back on slide 81, Dr. Johnson, I
24 mean, even in terms of the results shown on this
25 slide, while you see some variation, would you agree

1 that they are still solidly within the 40 to
2 50 percent range?

3 A. Yeah. And I think it is actually a
4 narrower range than that. But, again, we can't
5 treat every single regression as identical but we
6 know what makes them -- we know what the drivers
7 are. And that's the point.

8 What I have tried to do for the panel is
9 put you in a position where you can look at the
10 results and look at the results of my analysis and
11 say, okay, I understand that fixed effects make a
12 difference here. And depending on what type of
13 variation gets included, that's going to move the
14 estimates.

15 I also understand that the Canada control
16 doesn't really do anything. That was the goal, part
17 of what I am trying to do, what I view as my
18 responsibility as a professional econometrician.

19 Q. Now, Dr. Erdem said in his report that
20 you picked the model with the highest share of
21 Public Television.

22 Is that true?

23 A. No, it's not true. In my initial report
24 I reported nine regressions, and it wasn't the
25 highest there. It's not the highest in the matrix

1 with the 500 regressions. It's not the highest on
2 this chart. That wasn't the objective.

3 And, again, the results are in a fairly
4 narrow range but, again, just go to my fixed effects
5 chart. I presented a range of results that show
6 that if you add many fixed effects, the estimates
7 for PTV do go down over time, in my Figure 3 in my
8 rebuttal report. That is not maximizing the share
9 for PTV. That is trying to show you what the
10 reality of the model is showing. That's what the
11 results tell us.

12 Q. Let's now discuss another figure in Dr.
13 Erdem's report. What does this -- this is Figure 2
14 from Dr. Erdem's supplemental rebuttal testimony.

15 What does this figure purport to show?

16 A. Well, Dr. Erdem purports to show that
17 over time the range of results in his opinion had
18 increased progressively, such that PTV's shares were
19 the highest and continued to be elevated during the
20 course of the investigation.

21 Q. Could you explain what your team was
22 actually working on around the end of 2021?

23 A. Well, again, in the log what Dr. Erdem
24 failed to report in his expert report, I didn't see
25 it in his version of the matrix that he copied into

1 his appendix, were the data tabs that show for
2 different periods of time, there were different data
3 sets with different degrees of completeness.

4 In fact, as I explained in the timeline
5 before, there were a great deal of data diagnostics
6 going on. And when the team made a new tab, it is
7 because there was a major change to the data.

8 One of the things that was going on, and
9 you can see this in the notes that we turned over
10 from my colleague, Dr. Cheng, is there was a problem
11 with the algorithm. We were trying to get the
12 programming minutes to approximately match what Dr.
13 Bennett and Dr. Crawford had before.

14 And it turned out right around this time
15 when you see this increase is when we figured out
16 that it was the treatment of the syndicated minutes.
17 Those are reflected in her notes at the time. There
18 were issues with the time zones. I showed you the
19 e-mails about the time zones.

20 There were mapping identifiers. So Dr.
21 Erdem just blindly puts this on and doesn't have any
22 even understanding or apparent understanding of what
23 state the data is in at a point in time when he is
24 offering this opinion.

25 Of course, when the data changes for

1 substantial reasons, the results will change, but
2 this was part of the data diagnostic process as
3 we're trying to get to the point of the replication
4 that I am going to rely on from February going
5 forward for the purposes of formulating my opinion.

6 Q. If we can go to the next slide, please.

7 Dr. Johnson, are you familiar with the
8 statements here from Dr. Erdem's supplemental
9 report, the statement, the notes above indicate that
10 at this point they "picked reg 436" and then the
11 quote below that?

12 A. I am familiar with this, yes.

13 Q. Who is the Ms. Yan referenced in this
14 document?

15 A. Ms. Ester Yan is one of my research
16 assistants. She is a principal consultant, which
17 means she is a fairly mid-level. She is not quite a
18 member of the senior team, although recently she has
19 moved more senior in the organization but she is
20 basically one of the higher level researchers on the
21 team.

22 Q. And did Ms. Yan select your model for
23 you?

24 A. No.

25 Q. And do you have any -- you know, can you

1 explain that more?

2 A. Yeah, look, first of all, I picked my
3 model, but Ms. Yan didn't pick the model because the
4 model and what I was thinking about the model, those
5 discussions on February 23rd, February 28th, Ms. Yan
6 was not in those meetings. She was not there.

7 Those meetings were with Mr. Kheyfets,
8 Dr. Colino, and Dr. Cheng. I picked my model. I
9 would not trust, as much as I think highly of
10 Ms. Yan, I would not trust a research assistant or
11 anybody, even Mr. Kheyfets or Dr. Colino or
12 Dr. Cheng to pick the model. It is my sworn
13 testimony.

14 And Dr. Erdem basically reading
15 handwritten notes and making interpretations is not
16 economic analysis but it doesn't matter what it is,
17 I am telling you it's not true, it's completely
18 wrong, and it has no merit at all. I picked the
19 results and hopefully my presentation today where I
20 have shown you my thought process shows you I picked
21 my results. How am I going to testify if I'm not
22 the one who is making the decisions?

23 Q. And we will come back to the results
24 point in a moment, but in the second excerpt on this
25 where it talks about dropping regressions into your

1 report appendices on June 10th, 2022, why would
2 Ms. Yan drop regressions into your report appendices
3 on that date?

4 A. Well, look, I'm a lot of things. I'm an
5 econometrician. I look at drafts of my report. I
6 don't do the clerical work on my report. And I
7 don't mean to insult Ms. Yan because you need
8 someone who is very skilled with economics to make
9 sure that exactly the results are transposed from
10 the code, transposed over. It would be the
11 responsibility of the senior researcher on the team
12 to take the models I wanted to report in the
13 preparation of the draft and put them in.

14 But the notion that Dr. Erdem says that
15 Ms. Yan personally dropping in the notes means she
16 picked them, that's a ridiculous claim.

17 Q. Now, Dr. Erdem specifically points to
18 Ms. Yan's handwritten notes to say she picked your
19 model for you.

20 What is your reaction to that?

21 A. Look, I don't know what expertise an
22 economist has in interpreting handwritten notes, but
23 Dr. Erdem says "picked regression." I looked at
24 these notes. I talked to Ms. Yan. You blow up what
25 Dr. Erdem says, "pooled reg 436," that word is not

1 picked. That world is pooled regression 436.

2 Dr. Erdem has made the centerpiece of his
3 opinion his interpretation of a handwritten note
4 that he read incorrectly and then Dr. Rubinfeld
5 parroted it in his report and relied upon the same
6 misinterpretation himself.

7 How do I also know it means pooled?

8 Well, let's go back to my direct report.

9 I talked to you this morning about Figure
10 14. The regression that I showed you, with both the
11 statistically significant and the statistically
12 insignificant results where I am testing year by
13 year what it is that the results will show if you
14 separate them on a year-by-year basis.

15 And when I do that, that model is
16 comparing a pooled model with an unpooled model. In
17 fact, the baseline model in Figure 14 on page 57 is
18 baseline model.

19 The model on the last side with
20 statistical testing of pooling by year is the
21 unpooled model. What she is pointing to is I've
22 picked the pooled model as the model I want as the
23 primary specification and I am going to report the
24 unpooled model.

25 So I don't know what Dr. Erdem's

1 conclusion can draw from this, but I'm telling you
2 it says pooled, not picked. She didn't pick the
3 model. She was talking about what I selected.

4 Q. Dr. Johnson, let's move on to discussing
5 the testimony from another Settling Devotional
6 Claimants' expert, Dr. Rubinfeld.

7 Did you review Dr. Rubinfeld's
8 supplemental report?

9 A. I did.

10 Q. What is your reaction to it?

11 A. Well, Dr. Rubinfeld relies on Dr. Erdem.
12 Dr. Rubinfeld cites Dr. Erdem's opinion about the
13 picked regression and he puts it in a footnote.

14 Dr. Erdem wholesalely copies the
15 misleading chart, Figure 1, that I explained why
16 that's wrong.

17 The terabytes of information and
18 thousands of documents that we turned over, this is
19 the only set that Dr. Rubinfeld reports that he
20 considered. I don't know what kind of independent
21 investigation Dr. Rubinfeld did of my thought
22 process, but he surely hasn't demonstrated that he
23 actually probed the research process.

24 Q. Now, Dr. Rubinfeld cites to several
25 papers on the issue of data mining. What did you

1 conclude from your review of those papers?

2 A. Well, I read those papers. Some of them,
3 quite frankly, are from the 1980s before we have any
4 computing power. They just seem somewhat out of
5 date. Most of them endorse the iterative research
6 process that I engaged in, so I'm kind of surprised
7 he is citing them.

8 There's one that's by a law professor who
9 is an assistant professor, and it is not clear what
10 his econometrics training is that is advocating for
11 a bunch of things that I don't actually agree with
12 and are not actually practical, but for the most
13 part the things that I have done here actually
14 follow the research process.

15 Q. Let's go to the next slide that you
16 prepared, please.

17 What is this slide show?

18 A. This is another example of
19 indiscriminately treating every regression as if it
20 is the same. This is the table that is right after
21 the graph from Dr. Erdem, and Dr. Rubinfeld's report
22 where he indiscriminately treats every single
23 regression the same.

24 Now, I will at least say that
25 Dr. Rubinfeld here at least did have the spreadsheet

1 tabs, unlike Dr. Erdem, but every time one of these
2 tabs comes up, it means the data changed in a
3 significant way because of issues like the data was
4 incorrect, the data had the improper programing
5 minutes, the algorithm wasn't working. There is no
6 consideration of that.

7 The only thing Dr. Rubinfeld does is just
8 mechanically put them all on a chart in just a
9 different form.

10 MR. DOVE: I am not sure what your
11 thinking is on timing of the first break. I am at a
12 natural stopping point, but I would be happy to keep
13 going if that's your preference.

14 CHIEF JUDGE SHAW: I had a note to myself
15 between 3:15 and 3:30 I would ask you, so this is
16 perfect. Let's come back about 3:30. Thank you
17 very much.

18 (A recess was taken at 3:20 p.m., after
19 which the proceedings resumed at 3:29 p.m.)

20 CHIEF JUDGE SHAW: Welcome back from
21 break, everyone. We're still on the public record.
22 Incidentally, I also have a note to myself to ask
23 about a break --

24 (Recording in progress.)

25 CHIEF JUDGE SHAW: -- between 4:45 and

1 5:00. So somewhere in that area around 4:45, I will
2 inquire about another break.

3 Do continue.

4 MR. DOVE: Thank you, Your Honor.

5 BY MR. DOVE:

6 Q. Dr. Johnson, I want to switch gears now
7 and discuss substantive arguments from other experts
8 about the applicability of the Waldfogel-type
9 regression. Which experts considered the
10 Waldfogel-type regression to be inapplicable to all
11 cases?

12 A. Dr. Erdem is the only expert, at least as
13 I can tell -- maybe Dr. Rubinfeld, I'm not sure that
14 is entirely clear -- that he basically says
15 regression is an unreliable approach to estimate
16 relative market value of programming.

17 JUDGE STRICKLER: Before you go on,
18 Dr. Johnson, why do you say it's unclear how
19 Dr. Rubinfeld feels about whether the
20 Waldfogel-style regression is useful?

21 THE WITNESS: I just sort of tried to
22 paraphrase his report. I believe he is in line with
23 Dr. Erdem here. I'm just trying to be diplomatic.
24 I think it's crystal clear from Dr. Erdem that he
25 says the regressions can never be used.

1 Again, I was just trying to be diplomatic
2 about Dr. Rubinfeld. I suspect, if you read it
3 closely, you would probably interpret it the same as
4 Dr. Erdem, though.

5 JUDGE STRICKLER: Thank you.

6 BY MR. DOVE:

7 Q. And how has this argument been addressed
8 in the past?

9 A. Well --

10 MR. MacLEAN: Objection. I object to the
11 witness' characterization. This is Matthew MacLean
12 for SDC, by the way. I object to the witness'
13 characterization of how the Judges or their
14 predecessors have ruled in the past.

15 CHIEF JUDGE SHAW: Well, Mr. Dove, why
16 are you asking that?

17 MR. DOVE: Just it's a factual point
18 that's similar to the other points about how, you
19 know, this has been addressed in prior factual
20 findings.

21 CHIEF JUDGE SHAW: I think that -- well,
22 I may be speaking out of turn for Mr. MacLean. He
23 doesn't want to set up a situation where Dr. Erdem
24 is fighting with the Judges based -- you know, in
25 this hypothetical we're setting up, based on what

1 the witness is saying.

2 I mean, is that where you're going with
3 this, Mr. MacLean?

4 MR. MacLEAN: Yes, Your Honor. I mean,
5 for one thing the Judges, of course, with all due
6 respect, are not econometricians. And so what the
7 Judges think or say -- and, of course, Dr. Johnson
8 is not a lawyer. So what the Judges think or say is
9 -- what Dr. Johnson thinks the Judges think or say
10 is not, strictly speaking, relevant.

11 CHIEF JUDGE SHAW: Well, that's entirely
12 different than I took your objection, so --

13 MR. MacLEAN: And it's outside his
14 expertise. But that's all -- that's all -- what you
15 say is also right, Your Honor, and part of the
16 reason, you know, why this kind of testimony,
17 characterizing an expert witness in a field,
18 characterizing what a court says about the subject
19 matter of the expertise, that's why that kind of
20 testimony is not admissible, because we should be --
21 when we put on our expert, we're going to be talking
22 about econometrics and our experts' opinions on
23 econometrics and how they differ from Dr. Johnson's
24 opinions about econometrics.

25 We don't want to be having -- to have the

1 expert witnesses arguing between each other about
2 what the tribunal, either as the current tribunal or
3 a predecessor tribunal, has ruled.

4 CHIEF JUDGE SHAW: Well, I think that's
5 right.

6 Let's just see, Mr. Dove, where this
7 goes. I mean, I can't say that I agree with
8 everything that Mr. MacLean has said, but certainly
9 we don't want Dr. Johnson talking about what he
10 thinks Dr. Erdem thinks that we think and whether
11 that's right or wrong. It's just too abstract and
12 out of everyone's area of expertise.

13 But I'm not sure exactly where you're
14 going with this testimony, so we'll see.

15 MR. DOVE: Yeah, I just had one question
16 just to establish sort of a -- trying to understand,
17 you know, how this issue of the applicability of the
18 Waldfoegel regression has been handled by different
19 experts and different fact finders.

20 CHIEF JUDGE SHAW: Well, let me put it
21 this way: I am interested -- and the other Judges
22 we'll see, they may disagree -- I'm interested in
23 knowing what Dr. Johnson thinks about how, you know,
24 he did his work and whether criticisms against his
25 work are valid. And, obviously, he's going to take

1 into account what happened in other cases and what
2 this tribunal and other tribunals have said.

3 I just don't -- I kind of see the point
4 that it's not -- maybe not such a wise idea to have
5 Dr. Johnson talk about other people's views and
6 whether they conform to law, you know.

7 MR. DOVE: Fair enough, Your Honor. I'll
8 move on to my next question, which is which experts
9 considered the Waldfogel-type regression to be
10 inapplicable specifically in this current
11 proceeding?

12 THE WITNESS: That would be the JSC and
13 the CTV experts that argue, basically, first that
14 post-WGN, CSOs paying a minimum fee are not making a
15 meaningful choice and that the regression is less
16 informative and less reliable after the WGN
17 conversion.

18 BY MR. DOVE:

19 Q. And why do these experts claim that the
20 Waldfogel-type regressions are no longer applicable?

21 A. Well, they claim it's no longer
22 applicable because they say that it cannot serve as
23 a reliable tool for determining revealed preferences
24 of CSOs.

25 Q. And what is your opinion about their

1 arguments?

2 A. Well, I think their arguments are wrong.
3 It is true that after the WGN conversion, there are
4 more CSOs paying minimum fee. However, that is not
5 the same as saying that if a CSO is paying a minimum
6 fee, there is not revealed preference through
7 carriage choices at the subscriber group level. But
8 also this is a problem that we can accommodate with
9 econometric methods.

10 And, therefore, I can account for the
11 minimum fee concerns raised by these experts in the
12 model and systematically account for differences by
13 those that are paying above and below the minimum
14 fee.

15 JUDGE STRICKLER: I have a question for
16 you, Dr. Johnson.

17 Do you believe that the evidence that
18 relates to CSOs that have paid above the minimum
19 fee, does -- it more precisely estimates revealed
20 preference than those -- than the evidence reveals
21 with regard to those who pay only the minimum fee?

22 THE WITNESS: I want to answer your
23 question carefully because I think it points to
24 something I actually analyzed, Your Honor.

25 I don't think in the sense that there's

1 something magical about the above and below
2 decision-making, that that means that somehow above
3 is clearly always perfect on revealed preference and
4 below is not, but I do think, as I do attest on the
5 minimum fee, which I have in my initial report,
6 where I look at only those above the minimum fee,
7 where I, you know, exclude -- I basically look at a
8 subset. One second, please. Figure 14 again, it
9 does a lot in this report.

10 I've run a sensitivity in Figure 14 where
11 I limit paying above the CSO minimum fee. And when
12 I do that, I do find less precision in some of the
13 estimates when you throw out all that data. So I
14 just want to be clear about -- you know, I think
15 your question was more about is the variation that
16 comes from people making decisions above as useful
17 as that below? But there is also an econometric
18 issue of different ways to deal with the minimum
19 fee, and so I just wanted to make sure I wasn't
20 conflating those for you, sir.

21 JUDGE STRICKLER: Thank you. I guess my
22 question, at least in part, goes more to the
23 economic theory than it goes to the econometrics
24 per se. And it seemed to me -- and I'm curious
25 about your position on this -- that when you have a

1 CSO that's only paying the minimum fee, the minimum
2 fee strikes me as sort of an up-front tax. You pay
3 that tax and your marginal cost of retransmitting is
4 essentially zero at that point because it doesn't
5 change how much you're going to pay. You're already
6 stuck with the minimum fee.

7 It strikes me that we're talking about --
8 and I'll use this word sort of generally for the
9 moment -- the utility of the bundle of stations,
10 bundle of programs, I should say, the bundle of
11 programs that are distantly retransmitted; that is,
12 the utility of them to the cable company as to
13 either attracting or retaining subscribers.

14 And if we were putting this -- getting
15 into the weeds of economics here, there wouldn't be
16 utility so much as -- because that would be more of
17 a consumer-oriented point, but it would be in the
18 nature of isoquants. Wouldn't it be a tradeoff of
19 different -- of different bundles or different items
20 within a bundle, and someone would have to make the
21 choice, and the iso-cost curve, if you will, staying
22 in the weeds, is sort of already set for you because
23 it's set via the minimum fee?

24 So all you're doing there is expressing
25 -- again, I'll go back to utility preferences, which

1 would be mapped by an economist at least, if we were
2 trying to graph it abstractly, as an isoquant curve.

3 I know that doesn't mean a whole hell of
4 a lot to lawyers, but I wanted to hear your comment
5 on that.

6 THE WITNESS: So that's an interesting
7 perspective, Your Honor, and I think you're right.
8 I guess one thing I would add, though, maybe two
9 things I would add, perhaps a good analogy is back
10 to my movie theater analogy, right? If you think
11 about the fact -- let's say I had a weekend where I
12 was giving away free movie tickets. Everybody gets
13 free movie tickets.

14 I could still observe the people that go
15 to "Ant-Man," the people that go to "Top Gun:
16 Maverick," and the people that choose not to go to
17 the movies at all. And I would still learn
18 something about them, right? I think that's what
19 you're talking about with your isoquants and
20 bundles. I can see the different bundles and
21 tradeoffs.

22 But there's another level of complexity
23 here that I think the minimum fee argument is
24 important to not miss. Variation is at the
25 subscriber group level. And I'm going to show in a

1 second, in fact, you can be at the minimum fee in
2 aggregate but actually carry far more signals above
3 for some subscriber groups and below for others.
4 And that represents choices, and the fact that I can
5 look at base fee obligation before the minimum fee
6 actually allows me to extract more information even
7 from minimum fee payers.

8 So I think that's where it's a little
9 different, Your Honor, than the hypothetical you
10 were giving.

11 JUDGE STRICKLER: I understand. And you
12 did read the 2010-2013 cable determination, correct?

13 THE WITNESS: Yes, I did.

14 JUDGE STRICKLER: One of the things I
15 noted that was in that determination, the panel of
16 Judges there, which was not identical to the -- who
17 comprises the panel today, there was an analogy that
18 was made to a child who was punished and was sent to
19 her room to watch television for misbehaving.

20 Do you recall that at all?

21 THE WITNESS: Honestly, Your Honor, I did
22 read the decision. I don't recall the punished
23 child. I'm sorry. I'm surprised because it sounds
24 like a good analogy.

25 JUDGE STRICKLER: Okay. Well, I'm not

1 going to ask you how you felt it fit because you
2 don't recall it. Okay.

3 THE WITNESS: I'm sorry, Your Honor.

4 JUDGE STRICKLER: That's perfectly fine.
5 So let's just move along. That takes care of my
6 question for now. Thank you, Dr. Johnson.

7 Mr. Dove?

8 MR. DOVE: Thank you, Your Honor.

9 BY MR. DOVE:

10 Q. Dr. Johnson, you explained earlier today
11 the mechanics of how minimum fees are determined.
12 But what do you see in the data about how these fees
13 played out in the 2014 to 2017 period?

14 A. Well, where I do agree with Dr. Majure
15 and Dr. Marx is that there was a change in the
16 composition of who paid minimum fees. This chart is
17 one way to show that.

18 This just represents the total royalties
19 in the 2014 to 2017 period. And you see it year by
20 year. And the colors are going to represent, first,
21 the dark blue or purple at the bottom, the 148
22 number, that represents base fees being paid by CSOs
23 that are paying more than the minimum fee. The
24 light purple in 2014, the \$43 million, that
25 represents people paying the minimum fee that are

1 carrying one distant permitted signal. At least
2 one. So between zero and one. The little gray box
3 represents those that are paying a minimum fee but
4 carrying no distant signals. And the yellow are all
5 other fees. And this is Figure 10 in my expert
6 report.

7 Now, when -- and over this time period
8 what changes -- and I'm going to take you to the
9 fourth column now, the 2017 column, you can see the
10 change. What is absolutely true is that base fees
11 paid by CSOs paying more than the minimum fee is
12 much smaller.

13 And the category of people paying minimum
14 fees that are at least one and greater than zero is
15 a much larger share of the royalty pool. And then
16 the gray box, which are those where the minimum fee
17 paid by those carrying no distant signal are also
18 larger.

19 So that's the change. That's what has
20 changed. And so part of the question is now, in
21 light of these changes, can the model still
22 accommodate revealed preference and account for
23 these issues, for this change that occurred?

24 JUDGE STRICKLER: Another question for
25 you, Dr. Johnson. How do you explain in terms of

1 CSO behavior, cable company behavior, the gray box,
2 regardless of the size of it in any year, that a
3 company is paying the minimum fee, but still chooses
4 not to carry a distant signal?

5 THE WITNESS: Right. So, again, I think
6 that's probably akin in my movie example of people
7 that are really getting free movie tickets, they
8 just choose not to go to the movies. They're doing
9 something else. It does seem --

10 JUDGE STRICKLER: I guess my question is
11 what -- excuse me, what is the other thing that
12 cable companies do when they have a free shot at a
13 signal and choose not to do it? Not to transmit it?

14 THE WITNESS: Yeah, I mean, I don't know
15 exactly what they do. As I said, I think that there
16 could be bandwidth considerations, but I'm not sure.
17 But it is definitely something we see where there
18 are just some carriers before and during where they
19 just choose not to carry any distant signals. Maybe
20 it's because they are myopically focused only on one
21 type of distant signal. It could be -- and, again,
22 I don't want to put myself in the mind of the CSOs,
23 but it is a real phenomenon.

24 JUDGE STRICKLER: When you say bandwidth
25 considerations, does that refer to the fact that a

1 CSO has the option of distantly retransmitting or
2 alternatively just using its bandwidth to buy
3 another cable network or put on some other cable
4 show?

5 THE WITNESS: They do something else,
6 sure. I mean, I know in the last proceedings -- I
7 know we always talk about the negative correlation,
8 right, the idea that when you're sort of putting
9 these bundles together, you're looking for things to
10 sort of make your channel lineup. I think if
11 anything I see from the data, I see that CSOs make
12 varied decisions. I mean, it's not a monolith.

13 Part of why I think it's important to try
14 to use the data the best we can is because I think
15 it's really hard when you just sort of ask people
16 what they think, to actually understand fully how
17 that applies more broadly.

18 So that's the power of the data, but,
19 again, I don't want to -- I don't have an answer
20 like I know CSOs that fall in this bucket are doing
21 it for X, Y or Z reasons. Those are some potential
22 reasons. But it is something that is real and that
23 we see in the data.

24 JUDGE STRICKLER: Thank you. I want to
25 go back to an answer you gave me a moment ago when I

1 was talking about minimum fee cable systems and the
2 idea of utility and tradeoffs. And you made the
3 point that even if there were minimum fee systems,
4 they may still have subscriber groups that were
5 selecting varied program bundles, if you will.

6 THE WITNESS: Yes.

7 JUDGE STRICKLER: And is that detailed in
8 your report?

9 THE WITNESS: I believe it is, yes. I'm
10 going to actually show you a slide in a second which
11 shows the example. It's that same Virginia example
12 I've been using through the entire presentation.
13 But I do believe it is in my report. One second,
14 please.

15 JUDGE STRICKLER: Is it on as a slide as
16 well or just --

17 THE WITNESS: It's on a slide. So when
18 we talk about the slide, I can point you there and
19 we can sort of look at the reference there, if
20 that's okay, sir.

21 JUDGE STRICKLER: Sure thing.

22 MR. DOVE: May I proceed, Your Honor?

23 JUDGE STRICKLER: I think he's looking --
24 are you looking for the slide now or --

25 THE WITNESS: Oh, no, the slide the

1 coming. So if it's okay, as I said, could we go
2 forward, and then it's in a few slides, and then we
3 can go back to that.

4 JUDGE STRICKLER: You may leave me in
5 suspense for now. That's fine.

6 (Laughter.)

7 CHIEF JUDGE SHAW: Thank you, Judge
8 Strickler. That was my question. All right.

9 THE WITNESS: Sorry to create excitement
10 in the afternoon. I apologize.

11 BY MR. DOVE:

12 Q. It's going to be good. All right.

13 So, Dr. Johnson, did you do any analysis
14 of the CSOs in that light blue part of the chart
15 that we just saw where CSOs pay the minimum fee but
16 still carry distant signals?

17 A. Yes.

18 Q. And what does your analysis show about
19 those CSOs' decision-making?

20 A. Okay. So there are different types of
21 decision-making that I see in the data. So one
22 example is those that were above the minimum fee
23 before the WGN conversion and then after the WGN
24 conversion are now below the minimum fee. So
25 they're going to appear in one bucket in 2014 and a

1 different bucket, a different color in 2015. All
2 right?

3 Here's an example of a channel KAET,
4 channel 8, from Arizona State University. That is a
5 Public Television channel in Phoenix. It's .25 DSE.
6 This Cable One CSO also carried WGN before the
7 conversion. And they paid royalties above the
8 minimum fee. After the conversion, WGN is no longer
9 carried distantly, but they continue to carry KAET.
10 That's .25 DSEs.

11 Now, if you're above the minimum fee and
12 you're carrying a station and then once you go
13 below, you're still carrying the station, that
14 implies there's some value there. It did not mean
15 that the value declined suddenly.

16 And so when I look in the data, I see
17 this type of pattern for about 55 percent of cases
18 where the same CSO carried the same PTV distant
19 signal at a different point in time when it was
20 paying royalties above and below the minimum fee.
21 That's an example of one type of decision-making.

22 Q. And are there other examples -- are there
23 other examples of this besides the Cable One
24 carrying KA ET, or is that the 55 percent number you
25 were just citing?

1 A. Well, that's those, but there are other
2 examples. The 55 percent are the other examples of
3 that, but then there are other types of
4 decision-making that I also highlight in my report.

5 Q. And so for those 45 percent of the cases,
6 what can you tell us about what those CSOs'
7 decision-making was as to the carriage of distant
8 signals?

9 A. Okay. So even CSOs that paid only
10 minimum fees still value distant signals. Here's an
11 example of KCWC-DT in Lander, Wyoming. All right?
12 Sweetwater Cable was a minimum fee payer, and they
13 retransmitted KCWC-DT. That's the only channel they
14 carry. They're below the minimum fee.

15 There are other CSOs in Wyoming, though,
16 same programming to other parts of the state, that
17 are paying above the minimum fee. So you can also
18 see the kind of variation where you have two CSOs
19 above and below the minimum fee carrying stations,
20 which is another form of variation that we can
21 factor into the model.

22 Now, it would be incorrect to assume that
23 Sweetwater didn't make a decision or that
24 programming had no value simply because they're
25 below the minimum fee. It's a different type of

1 decision-making.

2 JUDGE STRICKLER: A question for you on
3 the prior slide, the prior demonstrative, for Cable
4 One out of, I think you said, Arizona?

5 THE WITNESS: Yes, sir.

6 JUDGE STRICKLER: There's no way for you
7 to know, I assume, correct me if I'm wrong, whether
8 Cable One maintained the channel, what is that
9 called, KAET? Is that it?

10 THE WITNESS: What do you mean there's no
11 way to know whether they --

12 JUDGE STRICKLER: No, I didn't finish the
13 question. I'm sorry. I'm still trying --

14 THE WITNESS: Oh, sorry.

15 JUDGE STRICKLER: It's KAET. I'm trying
16 to get the name of the station.

17 THE WITNESS: Yes, it is, sir.

18 JUDGE STRICKLER: Whether they continued
19 to air that even after -- retransmit that after WGNA
20 -- WGN was no longer available, simply out of
21 inertia, they had done it before and just decided to
22 keep it again, you wouldn't know one way or the
23 other whether that was the case; is that correct?

24 THE WITNESS: That is true. That would
25 be their revealed preference, though.

1 JUDGE STRICKLER: The revealed preference
2 is to not engage in the transaction cost if you
3 will, bother of trying to figure out whether they
4 wanted to transmit it or not, but they did it, so
5 that's their revealed preference; we don't need to
6 know why?

7 THE WITNESS: That's correct.

8 JUDGE STRICKLER: Thank you.

9 BY MR. DOVE:

10 Q. Dr. Johnson, is there anything else you
11 can do to study minimum fee payer CSO
12 decision-making?

13 A. Yes. So there's also, then, this issue
14 with respect to being above and below the minimum
15 fee. This is the example on Verizon Virginia that I
16 cite in my report on this form-3. And it just sort
17 of shows what I showed this morning, that if you do
18 the math subscriber group by subscriber group,
19 because of the nature of the formula, you can have a
20 subscriber group where you can carry many DSEs and
21 have gross receipts and some base rate fee for that
22 group, you can have another subscriber group where
23 you carry one DSE, but overall when you do the
24 calculation, you still could end up below the
25 minimum fee based on the overall carriage pattern.

1 And so that's another form of variation.

2 And so that appears to be from my first
3 report in the section on the formula, Your Honor.
4 That's where I believe I call out this type of
5 decision-making.

6 Q. Can you describe, Dr. Johnson, how your
7 regression model deals with this minimum fee issue?

8 A. Okay. Well, there's a few ways. So
9 first thing that I did is I included what is called
10 a minimum fee indicator. All right? So when we
11 talked again about fixed effects, one of the groups,
12 one of the sort of issues here is we have these
13 people that -- we have CSOs that transmit between
14 zero and one DSEs but are paying the minimum fee.

15 So I have a minimum fee indicator, which
16 is a variable in the regression that controls for
17 that phenomenon. It allows those types of
18 decisionmakers, the one that appear that they could
19 carry more programming and hit the minimum fee but
20 don't, how do I control for them in the regression.
21 So that's one thing that I did.

22 And so, therefore, I can account for that
23 information and the fact that those are
24 systematically potentially different from others
25 that are at one or above one in terms of their

1 minimum fee obligation.

2 But I also tried some testing of the
3 model -- and this is in my first report, again
4 Figure 14, I seem to like to reference a lot --
5 where I tested the model to see what happened if I
6 tried to limit or eliminate the minimum fee payers.

7 Q. So taking your first point, was this --
8 your use of the minimum fee indicator, is that a
9 novel solution for the minimum fee issue?

10 A. I don't think it is. There were experts
11 in the prior proceeding, Dr. George, Dr. Crawford,
12 Dr. Israel, all who had minimum fee indicators. I'm
13 not sure they were exactly structurally identical to
14 mine, but they all had some type of control to
15 purportedly capture this phenomenon of are those at
16 the minimum fee systematically different in the
17 model?

18 Q. And then you just mentioned statistical
19 testing. How did you test whether minimum fee
20 payers' decision-making affected your model?

21 A. Well, you know, I did something that I
22 think is a -- I did something that I view as a test
23 where I'm really pushing the data hard. And what I
24 mean by that is I'm going to limit to only a subset
25 of the CSOs who paid above the minimum fee and see

1 what happens to the valuations.

2 Figure 14, column C, I have a regression
3 where I basically lose a fair amount of the data,
4 I'm down to 9,273 observations, and I'm looking to
5 see what happens to the valuations if you only look
6 above the minimum fee.

7 Given that supposedly the minimum fee has
8 particular bite for Public Television, the fact that
9 I continue to find Public Television, is that a
10 statistically significant positive valuation? In
11 fact, I find positive valuation for everything, but
12 I do find, actually, that the two claimant groups
13 where the minimum fee seems to have the most bite is
14 Joint Sports and Devotional, and that's simply
15 positive but they are statistically insignificant.

16 But the reason for that is they have the
17 least data. They actually end up being the most
18 affected by that. So what I conclude from this is
19 I've got the minimum fee indicator, I don't want to
20 lose more than half my data, but even this sort of
21 test, you know, in a fairly aggressive way in terms
22 of throwing out data, still tells me that the model
23 can accommodate the minimum fee, but I absolutely
24 lose precision as a result of that.

25 Q. Dr. Johnson, what other features of your

1 model, if any, helped deal with the minimum fee?

2 A. Well, again, the minimum fee is -- in
3 some respects the entire point of the minimum fee is
4 to capture decision-making. And so in my -- one
5 second, please -- in my rebuttal report, I have a
6 fairly significant section on minimum fee issues. I
7 just think it's worthwhile to point. So that is
8 found in Sections 76 through 85 and goes on with 86
9 and 87.

10 But one of the other sort of salient
11 features is that, you know, despite the claim from
12 -- I believe the Joint Sports expert, Dr. Majure,
13 about the fact that the minimum fee undermines the
14 ability to get revealed preferences, in fact, in his
15 report as he's discussing the Bortz Survey and the
16 weighting of the Bortz Survey, it's actually
17 weighted, the weighting mechanism they advocate for,
18 and he opines on, is exactly the same as using the
19 minimum fee before -- using the base fees before the
20 minimum fee obligation.

21 So on the left, I have the direct quote
22 from the report: "A measure of what the CSO would
23 have been paid absent the minimum fee, corresponds
24 to the CSO's preference as revealed by its usage
25 decisions." That's from Dr. Majure's written direct

1 testimony, paragraph 138.

2 The regression relies on a measure of
3 what the CSO would have paid absent the minimum fee
4 to reveal preferences. We're actually talking about
5 the same thing. Dr. Majure seems to say that for
6 the purposes of the survey, using that will reveal
7 preferences. And I'm saying for the purpose of the
8 regression, it will reveal preferences.

9 JUDGE STRICKLER: I have a question going
10 back, if I may, Dr. Johnson, just to -- it was
11 demonstrative 91, and I asked you the question about
12 whether this channel KAET or this station -- the
13 channel KAET was perhaps distantly retransmitted
14 because of inertia, and you agreed that it was just
15 -- it didn't matter whether it was or wasn't, that
16 was their revealed preference.

17 Do you know whether or not this KAET
18 channel was a must carry channel, a Public
19 Television must carry channel?

20 THE WITNESS: I don't. I don't believe
21 that is one that was -- again, there is no reliable
22 method for determining must carry. And I'm going to
23 talk about that in a second. I don't recall if this
24 was one that Dr. -- I'm sorry, Mr. Harvey's
25 methodology flagged as must carry. That I don't

1 recall.

2 But, overall, the must carry -- there's
3 going to be a lot more on must carry, Your Honor,
4 but even if you took Mr. Harvey at face value that
5 he identified must carry, his numbers, his estimates
6 for must carry is between 15 and 22 percent. And so
7 there's still 80 percent, 85 percent of channels
8 that might have this pattern, even if they were must
9 carry, that wouldn't be must carry. That couldn't
10 be, even by his definition.

11 And I will talk about why I don't think
12 his definition is correct in a little bit.

13 JUDGE STRICKLER: Another question which
14 relates to your comments a moment ago with regard to
15 the Bortz Survey.

16 It's my recollection, and perhaps the
17 record will correct me, that in the Bortz Survey,
18 the survey respondents were required to allocate, I
19 think it was 100 points, not \$100, across their
20 various categories of programming. And they were
21 not allowed, as I recall, to, if you will, bank
22 points. They had to use up all 100.

23 And assuming that's the case, and the
24 record can correct me if I'm wrong on any of that,
25 of course, is the fact that they had to use the 100

1 points and then do the allocation, does that make
2 the survey similar to -- for that reason, to a
3 minimum fee situation where they have to spend 100
4 points and then make the allocation?

5 THE WITNESS: I mean, again, I'm not
6 purporting to be a survey expert. And although I
7 offer a fairly limited opinion about those parts of
8 the survey that I'm comfortable as an econometrician
9 offering, I don't want to -- you know, there are
10 other experts that are survey experts, but I do
11 think your analogy does sound correct to me, that it
12 does seem like that if you constrain the choice to
13 be 100 and everybody has to do 100, then you are in
14 some way forcing people to spend money or not. I
15 think that is true.

16 Again, my point on the Bortz Survey was a
17 little bit more about the fact that after they do
18 the share allocation, though, there's a series of
19 weighting mechanisms that have been proposed by the
20 Sports Claimants, and the one that Dr. Majure
21 endorses is one that exactly lives off the exact
22 same variation that he critiques me for using, and
23 that is the base royalty before the minimum fee.

24 JUDGE RUWE: Since we've returned to the
25 Cable One and we were there for a moment on this

1 slide, if Cable One -- WGN is no longer under the
2 license going into 2015, but if they were to license
3 that channel that WGN became, the cable channel, and
4 it was at a price higher than they were paying the
5 difference above the minimum fee, would that
6 therefore decline the relative value of KAET? That
7 change, that change occurring --

8 THE WITNESS: Right. So if it were the
9 case that now there's some other value -- the higher
10 value for the signal or sort of what you're doing,
11 now you're moving into a world of that sort of
12 tradeoff about I'm not going to make any choice at
13 all with respect to carrying more signals because I
14 have a higher value, right? I think it's --

15 JUDGE RUWE: I'm saying WGN now is -- now
16 I'm paying -- now Cable One is paying more to carry
17 WGN come 2015, and --

18 THE WITNESS: Oh, because it's a cable
19 channel.

20 JUDGE RUWE: Yes. And therefore does
21 that decline the relative value of KAET?

22 THE WITNESS: Well, now that the issue is
23 the WGN programming is being paid more for, now that
24 it has moved into cable channel. Now it's no longer
25 part of the distant comparison.

1 JUDGE RUWE: True.

2 THE WITNESS: So it may well be that it's
3 more valuable, but I'm not sure -- that's not going
4 to factor in the same way because it has been
5 removed from the comparison, right?

6 That's what the change is. When it goes
7 to the cable channel, they may well be paying more,
8 they may be paying less, but now it's out of the
9 analysis thereafter once it's no longer a distant
10 signal. The model can't really inform that
11 directly.

12 JUDGE RUWE: Thanks.

13 BY MR. DOVE:

14 Q. The way I look at this, Dr. Johnson, and
15 tell me if you think this is right, is if there were
16 only two signals, signals in the universe, KAET and
17 WGN, and they were both compensable in 2014, but in
18 2015 WGN was no longer compensable because it has
19 become a cable network, wouldn't that mean in that
20 hypothetical that KAET would receive the entirety of
21 the royalty share because all that's left?

22 A. Well, it's a relative valuation of what
23 is left behind, yes. And so then the model has to
24 work, and given you have a different universe of
25 minutes and a different universe of things, the

1 model is trying to parse out what is the value of
2 that relative to, you know, the non-claimant minutes
3 in the model.

4 So what is true is it's a change. I
5 think the description from Your Honor was about WGN
6 becoming a cable channel such that that's a choice,
7 and maybe it's the fact that now they're paying
8 more. But the fact they're paying more for WGN,
9 well, that's being directly compensated by the
10 negotiation with WGN now as a cable channel. And so
11 now we're back in the distant landscape. That's no
12 longer here.

13 It does relate a bit to that, you know,
14 they're making choices of what's the better value of
15 their -- you know, what to carry. That is true.
16 But I don't think the model can really inform that
17 fully once it leaves the distant signal universe.

18 Q. If we could, I guess, go to slide 96, and
19 let's talk for a moment about Dr. Asker's view on
20 this issue.

21 What's your understanding of Dr. Asker's
22 view on this minimum fee issue?

23 A. Well, Dr. Asker provides a totally
24 different approach. He seems to say that in order
25 to do an analysis, you have to set the minimum fee

1 prices to something different. He talks a lot about
2 extra expenditure required to obtain a good. And so
3 Dr. Asker is saying, well, let's use something not
4 from the form-3's, but let's change a large amount
5 of the data to zeros, about 50 percent of the data.
6 He says if you're at a minimum fee, he's manually
7 overriding the payment, and then he has got a number
8 for what the CSO would have paid absent the minimum
9 fee for another part of the data. He's basically
10 fundamentally changing the pricing consistent with
11 what I guess he views as an alternative theory.

12 Q. And I take it you don't believe that
13 reflects relevant -- a relevant measure of value?

14 A. No, I mean, Dr. Asker's model, you know,
15 it's kind of at odds with the Bortz Survey and the
16 rest, the other experts that have done regressions
17 because we're talking about what the CSOs would have
18 paid absent the minimum fee as an appropriate metric
19 to study to allocate royalties.

20 But also Dr. Asker, at least from my
21 reading of his report, doesn't show that his
22 methodology would apply in 2014. And if it can't
23 work in 2014 when this is supposedly an issue, I
24 don't know why I should -- why the fact that he gets
25 some other results in 2015 to 2017 makes any sense.

1 Q. Dr. Johnson, I would now like to turn to
2 this issue of must carry and duplication that we
3 talked about some, but I think here's an opportunity
4 to drill down a little bit on these two critiques.

5 Explain what it means for a station to be
6 must carry?

7 A. Okay. So my understanding is that there
8 are certain circumstances where there is legislative
9 -- sorry -- legislative compulsion such that you
10 have to carry or you can carry a Public Television
11 station, you're required to, in return for some
12 indemnification to the CSO.

13 And so this issue of must-carry signals
14 has come up for the first time, as I understand it
15 in this proceeding, I did not see any reference to
16 this in the prior proceedings, any of the prior
17 experts, any of the sports experts, Dr. Israel did
18 not mention this issue, although my understanding is
19 that it has existed for quite a while.

20 And so the question is sort of twofold.
21 There is first, well, if there's a must-carry
22 requirement, A, what does that mean for value? And,
23 B, how prevalent is it with respect to Public
24 Television?

25 Q. And just to be clear, because I think you

1 may have mixed two concepts but I am not sure I
2 heard it right, is there a difference between when
3 we're talking about must carry and when we're
4 talking about exempt versus non-exempt signals for
5 royalty purposes that we discussed earlier?

6 A. Yeah, the exempt versus non-exempt has to
7 do with certain multi-cast stations and whether they
8 are required or not to be carried. But must carries
9 are more functional. It is about the idea of
10 whether or not you are required legislatively to
11 carry certain Public Television channels in return
12 for some indemnification of the CSO.

13 JUDGE STRICKLER: When you say some
14 indemnification, I thought it was 100 percent
15 indemnification?

16 THE WITNESS: I don't want to pretend to
17 be an expert on the elements of the statute, Your
18 Honor. I believe the quote is directed in my report
19 and I do think it just says indemnification, so I
20 just think I misspoke.

21 JUDGE STRICKLER: Thank you.

22 BY MR. DOVE:

23 Q. And what do the Joint Sports Claimants'
24 experts opine about how must-carry channels affect
25 the value of Public Television programming?

1 A. Well, I want to be clear. There are sort
2 of two sets of opinions. There is -- Mr. Harvey is
3 the expert that does statistical analysis where he
4 creates an algorithm that he estimates the volume of
5 must-carry Public Television programming.

6 Dr. Majure relies on Mr. Harvey's
7 statistics, but Dr. Majure is the one that opines
8 that the relative market value of these signals is
9 zero because the CSO was legislatively compelled to
10 retransmit the signal upon request.

11 Q. And what's your response or do you have a
12 response to that opinion?

13 A. Well, Dr. Majure's opinion on must carry
14 having no value is just simply wrong. Look, there
15 is many real-world examples where we have mandated
16 goods we're required to carry. People are required
17 at times to carry health insurance. The fact that
18 you're required to carry health insurance in certain
19 markets doesn't mean that has no value to you.

20 You can't buy a car in the United States,
21 I don't think you can any more, where you don't have
22 a seatbelt. You're mandated to pay whatever the
23 extra is for the seatbelt as part of the car price.
24 That really doesn't mean the seatbelt because it is
25 mandated has no value, all right?

1 So must carry does not equate to no
2 value. That's wrong. Then the question is, well,
3 what's the magnitude of the must carry and how does
4 that play out in the econometric model?

5 JUDGE STRICKLER: And how do you
6 determine that value?

7 THE WITNESS: Well, you're going to
8 determine the value first by looking at the model.
9 And I am going to do a number of things. I am going
10 to actually use the programming minutes as I do in
11 the revealed preference model. I am going to
12 actually do some testing where I am going to compare
13 using doctor or, I'm sorry, Mr. Harvey's
14 mathematical calculation and show, in fact, that the
15 must-carry calculation, must carry doesn't have
16 different value than those that are not must carry
17 by his own definition in my econometric model. So
18 -- so that is going to show me that.

19 But also, again, it's a average relative
20 valuation. So to the extent that the must-carry
21 programs had a lower average relative valuation,
22 that would be captured in the model.

23 MR. DOVE: At this point, Your Honors, I
24 think we need to enter into a restricted session.

25 CHIEF JUDGE SHAW: Very well. I saw the

1 word on the demonstrative, so let's do that.

2 MR. SACK: If you're not permitted to
3 attend a restricted session, please excuse yourself
4 from the meeting at this time.

5 MR. DOVE: And just to be clear, I did
6 see some e-mail traffic regarding the difference
7 between a restricted session and a restricted
8 session on Order 27. This is just the general
9 restricted session from my perspective.

10 MR. SACK: We appreciate that
11 clarification.

12 (Whereupon, the hearing proceeded in
13 restricted confidential session.)

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

2 MR. TOTH: We're back in public.

3 CHIEF JUDGE SHAW: Thank you, very good.

4 You may proceed.

5 MR. DOVE: Thank you.

6 BY MR. DOVE:

7 Q. Dr. Johnson, you mentioned earlier that
8 you didn't think Mr. Harvey has actually objectively
9 identified any must-carry Public Television signals.
10 What did you mean by that?

11 A. Well, look, Mr. Harvey puts forward an
12 algorithm. That algorithm is based on the following
13 concept that a PTV call sign is transmitted either
14 locally or distantly to all subscriber groups in the
15 system and basically he has a set of conditions.

16 You have to have at least one local
17 carriage and then everything else has to be distant
18 of the same signal to the entire set of subscriber
19 groups for must carry.

20 He, himself, and I am quoting his
21 testimony, paragraph 83, says it is generally
22 indicative of but not strictly necessary for must
23 carry. So I point that out because even with that
24 "generally indicative of," the estimates of must
25 carry from Mr. Harvey are between, depending on

1 which cut, between 15 and 22 percent on his baseline
2 comparison but there's a problem with that.

3 Q. And what is that problem?

4 A. The problem is the algorithm will also
5 flag as must carry any signal that's carried across
6 subscriber groups, if it's carried to all the
7 subscriber groups and has one local, such that you
8 would also pick up even if it had particularly high
9 value and it might have nothing to do with must
10 carry.

11 So you don't know whether it's a
12 must-carry situation or a station that's actually
13 highly valued or content that's highly valued.

14 Q. Dr. Johnson, how does your regression
15 model handle these supposed must-carry signals?

16 A. As I said before, it's an average
17 relative valuation, but I did do a series of tests
18 taking Mr. Harvey's definition as given where I test
19 under different scenarios. Now, there are different
20 scenarios, some are in the appendix, but the primary
21 one, the one I just pointed Judge Strickler to
22 basically says that when you test those, there is no
23 difference between must carry and not must carry in
24 the econometric estimation.

25 Q. And did any of the other experts attempt

1 to do this kind of testing?

2 A. Well, Dr. Bennett did do something else,
3 but he included all multi-casts as must carry. And
4 we will talk a little bit more about that in a
5 second. He also then treated the must-carry signals
6 as though they didn't exist at all.

7 So unlike my test where I use the
8 econometrics, he is using removing large volumes of
9 data and improperly calling multi-cast must carry.
10 Again, I would rely on my test that is more true to
11 both what, just taking Mr. Harvey's algorithm
12 because I don't agree with it, and doing a
13 systematic test of the model.

14 Q. And what's the effect of these errors on
15 Dr. Bennett's analysis?

16 A. That you just can't draw that conclusion,
17 any conclusion from Dr. Bennett's analysis. He is
18 overinclusive on what is must carry, and then he has
19 removed the must-carry PTV signals as though they
20 don't exist.

21 Q. So let's turn now to another issue that
22 we have talked about a little bit in this proceeding
23 and that's programming duplication.

24 In a nutshell, can you explain what the
25 Joint Sports Claimants point is on supposed

1 duplication of Public Television content?

2 A. No, the claim is that there's a large
3 amount of duplication, such meaning, and the meaning
4 will matter, but essentially trying to say that the
5 same programs carried on a primary stream and a
6 distant stream, same program carried on a primary
7 stream and a multi-cast, some things about sister
8 stations, but all of these things are issues about
9 is it the fact that the method, is it the fact that
10 the data itself shows that there are the same
11 programs being carried such that they don't have
12 value because they are already being carried, same
13 time, same place, what does that mean?

14 Q. And let's just assume for a moment that
15 that proposition is true. Would that pose an issue
16 for your regression?

17 A. Well, no. Like, again, the Waldfogel
18 regression lives off of average relative valuations.
19 So if there is a duplication issue, if that
20 duplication has zero value, then that will be
21 factored into the regression.

22 Now, I have issues with the duplication
23 calculations from Mr. Harvey. They are grossly
24 overstated. But even if we took them at face value,
25 that in and of itself would not invalidate the

1 model.

2 Q. What are the bases for Dr. Majure's
3 opinions about duplication and its effect on
4 relative value?

5 A. Dr. Majure does not do any independent
6 statistical work. He relies on Mr. Harvey's
7 calculation of duplication, which is based on an
8 algorithm, another statistical algorithm that Mr.
9 Harvey developed.

10 Q. And what did Mr. Harvey do?

11 A. Well, Mr. Harvey basically, to determine
12 duplication, he categorizes the programming as
13 duplicative between a distant signal and a local
14 signal, if different episodes of a program are
15 retransmitted in the same six-month period.

16 Q. And what would be an example of a
17 duplicative program under Mr. Harvey's
18 categorization?

19 A. Well, an example would be the
20 Cubs/Pirates game carried on WGN on March 31st, 2014
21 and the White Sox/Blue Jays game on June 29th, 2014
22 are both duplicative. And the reason is because
23 they are within six months of each other and they
24 are both based on the categorization Major League
25 Baseball.

1 Now, I'm a baseball fan. I'm a
2 Nationals fan. You don't have to be a Cubs and a
3 Sox fan to know those two things are not the same
4 thing.

5 Q. Do you have any example of Mr. Harvey's
6 supposed duplication analysis as it applies to
7 Public Television programming?

8 A. Yes. He also relies on a series of
9 high-level names, such as the programming
10 Masterpiece. Well, Masterpiece, Masterpiece
11 Theater, formerly known as, has a number of
12 different actual programs.

13 So, for example, Mr. Harvey would call
14 the program "Sherlock, The Empty Hearse," which was
15 distant on September 4th, 2014 and "Salting the
16 Battlefield," a completely different program on
17 November 16th, 2014, duplicative in his declaration.
18 Clearly these are not duplicative.

19 So Mr. Harvey's mechanical algorithm
20 grossly overstates duplication because it has a very
21 large window and it's using a very high-level name
22 that doesn't actually get into the programming
23 specifics.

24 Q. Now, Dr. Johnson, did you do your own
25 analysis of duplication between local and primary

1 distant signal?

2 A. I did.

3 Q. And what did you find for Public
4 Television?

5 A. What I found is if you actually look at
6 the same program name in the same time period, you
7 actually find the actual rate of duplication is
8 between 20 percent, about 20 percent for primary
9 versus distant signals. And you can find the
10 detailed analysis of this in Figure E-4 of the
11 appendix to my rebuttal report.

12 Q. And did you do the same analysis for the
13 Joint Sports Claimants' program?

14 A. I did.

15 Q. And how do those results compare?

16 A. The Joint Sports Claimants, I find
17 duplication of about 17 percent, roughly similar.

18 Q. And what is your conclusion about your
19 model's ability to capture any variation in value
20 due to duplication?

21 A. Well, again, I think the average relative
22 valuation will capture this issue, but, again, given
23 the amount of duplication, it's nowhere near as big
24 of an issue as Mr. Harvey suggests with the numbers
25 he puts forward.

1 Q. I think we may have already used these
2 terms earlier, Dr. Johnson, but could you give us a
3 quick example of what primary and multi-cast streams
4 are?

5 A. Okay. So a primary stream has one sort
6 of type of programming. It is kind of like, I call
7 it the anchor station, KLCS, for example, PBS is
8 one. But then at the advent of multi-cast streams,
9 there are, related to the primary stream, and you
10 can see same call sign but then DT2, DT3, they are
11 the specialized programming where they carry for PBS
12 topics like Create is the how-to channel. And you
13 can see "Lydia's Kitchen" or "This Old House."

14 PBS Kids, you could watch "Sesame Street"
15 or "Bob the Builder." So these primary and
16 multi-cast programs are different ways to transmit
17 content to subscribers.

18 Q. Now, Dr. Majure and Mr. Harvey claim that
19 programs on these stations are duplicated. What did
20 you conclude as to program duplication across a
21 primary PBS station, a PBS Create station, and a PBS
22 Kids station?

23 A. Well, I actually investigated it.
24 Dr. Majure does not do any independent analysis of
25 the data. He relies on Mr. Harvey. But Dr. Majure

1 does not actually quote Mr. Harvey's statistics.

2 Mr. Harvey didn't do a direct analysis of

3 duplication on primary and multi-cast.

4 Mr. Harvey put forward a set of program
5 names and talked about exclusive content, but I
6 actually looked at the programs using the algorithm.
7 And what I found was that the duplication rates from
8 primary to multi-cast was roughly 5 percent.

9 Q. And what is your takeaway on these
10 must-carry and duplication issues as they relate to
11 your model?

12 A. Well, the model can accommodate them.
13 But, again, I think the must-carry issue as I sort
14 of described before is one that not only can the
15 model accommodate but there is really no difference
16 in the model valuation of the must carry and not
17 must carry.

18 And with respect to duplication, the
19 model would accommodate that as well, but the
20 estimates of duplication are far or grossly
21 overstated by Mr. Harvey's mechanical statistical
22 approach.

23 Q. Dr. Johnson, did you prepare a slide that
24 summarizes where the Judges can find the various
25 regression results we have been talking about today?

1 A. I did.

2 Q. And is this slide 106?

3 A. Yes, it is.

4 Q. Could you describe what's on this slide?

5 A. Yes. So as I described in my testimony,
6 there are -- there is a baseline model that I
7 described in my direct report. That is used to both
8 calculate the base fee pool and the 3.75 pool.
9 Those are found in Figure 1 and Figure 17 of my
10 written direct testimony.

11 I also discuss the fact that, although I
12 split them into two different models because I
13 believe since PTV was not eligible for the 3.75
14 Fund, that I thought that made sense. However, in
15 light of the criticisms offered by other experts and
16 my own thinking, I wanted to give those results to
17 the panel as well. To the extent you would rely on
18 my baseline model but combined, you can find those
19 results in my written rebuttal testimony at Figure
20 C-6.

21 I also presented alternative fixed
22 effects approaches today. As I said, I think that
23 my approach is the best approach, but I did want to
24 show what I thought were other reasonable
25 approaches, since I think that is a critical issue.

1 You can find the same combination, the base fee
2 results for the different fixed effects I presented
3 today in Figure C-2 of my rebuttal report. You can
4 see the 3.75 results in Figure C-4. And you can see
5 the combined base and 3.75 version of the fixed
6 effects for each of the different fixed effects
7 combinations in Figure C-6.

8 Then I list other sensitivities and
9 tests, both in my direct and rebuttal testimony at
10 the bottom.

11 Q. Now, Dr. Johnson, just one more
12 collection of slides here that you prepared called
13 an appendix of additional claims.

14 Now that we're done discussing the
15 substantive claims, could we quickly walk through
16 the other experts' miscellaneous claims with respect
17 to your model? First of all, what should we make of
18 Dr. George's issue about incomplete 2014 CRTC data?

19 A. The incomplete data has been accounted
20 for with the algorithm I present. The results are
21 insensitive to that, and it is only 1 percent of the
22 data.

23 Q. How about Dr. Tyler's claim about
24 estimation of subscriber counts?

25 A. Well, Dr. Tyler asserts that somehow the

1 counts of subscribers is done improperly. My
2 methodology is consistent with the way the vendor,
3 the CDC, does the data and the other experts that
4 use subscriber group counts, so I don't give that
5 any credence.

6 Q. How about the issue Mr. Trautman has
7 about the timing of WGNA contracts?

8 A. Well, Mr. Trautman's issue with my
9 analysis is that he has identified a single call
10 sign in 2016 that on the form-3 SOAs report carrying
11 WGN distantly. I did not change that. I left that
12 as is.

13 He claims that is a data error. I did
14 test whether that made any difference in that one
15 call sign, whether you count that payment or not, it
16 does not change the results.

17 Q. What about Dr. Erdem's critique of the
18 log-linear form?

19 A. Well, Dr. Erdem has critiqued the idea
20 that using a log-linear specification is somehow
21 improper. He is wrong. We do log-linear
22 specifications regularly in econometrics. But here
23 if you use a log-log specification as Dr. Erdem
24 advocates, you would simply be replicating the
25 underlying formula.

1 Q. What are your thoughts on Dr. George's
2 claims about excluded controls?

3 A. Well, again, I think Dr. George sort of
4 seems to think that the fact that I tried to develop
5 a parsimonious model runs the risk of bias.
6 However, as I believe I have demonstrated with the
7 various fixed effects approaches, I don't think the
8 controls are what is really moving the needle on
9 this. I think most of it is which fixed effect
10 specification you rely upon in terms of accounting
11 for potential demand factors.

12 Q. How about Mr. Harvey's claim about
13 multi-collinearity?

14 A. Multi-collinearity is a technical
15 assumption. Multi-collinearity is not an issue. It
16 is not a form of mis-specification. It is simply an
17 attribute of the data. Mr. Harvey's claim about
18 multi-collinearity just has no consequence for the
19 estimation. It does not affect the ability to
20 estimate the coefficients.

21 If anything, it would affect the
22 precision of the estimates, but I have results that
23 are statistically significant.

24 Q. Okay. The next one is the really hard
25 one. How about Dr. Erdem's claim of

1 heteroscedasticity?

2 A. Okay. So heteroscedasticity is one of
3 the Gauss-Markov assumptions which underlies a
4 regression. It has to do with the nature of the
5 underlying standard error calculation.

6 I understand Dr. Erdem made this
7 critique. He did not look at my code, apparently,
8 where I do the correction for heteroscedasticity
9 with what is called cluster standard errors. It has
10 been accounted for in the underlying models I did,
11 so it is not a concern.

12 Q. What are your thoughts on the criticisms
13 from Tyler and Harvey on pattern to residuals?

14 A. Well, this is eyeballing of drafts. It
15 is not very useful. It conflates the idea of a
16 prediction regression with one that we're using,
17 just estimate effects, but also they don't do any
18 mathematical calculation. They just looked at a
19 picture.

20 If you actually do a calculation of the
21 correlation of the residuals underlying their
22 pictures, there is no correlation between them such
23 that there is no problem.

24 Q. How about Dr. Asker's claim about the
25 Kolmogorov-Smirnov test, what are your thoughts on

1 that?

2 A. Well, I agree with Dr. Asker that a
3 Kolmogorov-Smirnov test does talk about differences
4 in distributions, and I even agree that there is a
5 difference between 2014 to 2015, '16, and 17. But
6 that's why I did the test in my initial report in
7 Figure 14, where I allowed it to vary year by year
8 so I could look at what the consequences of that
9 was.

10 Q. And do you have a response to
11 Dr. Bennett's claim about the Huasman test?

12 A. I think I have been very upfront about
13 the fixed effects. I do think they matter. I think
14 Dr. Bennett, though, has failed to understand the
15 tradeoff between the overfitting concern and
16 potential bias and, therefore, he has overweighted
17 the Hausman test. But also I have shown you all the
18 fixed effect results, so I think that issue is moot.

19 Q. What are your thoughts on Mr. Harvey's
20 revised minimum fee indicator?

21 A. I thought this was a bit of an odd
22 critique. In the section in Mr. Harvey's report, he
23 puts forward a chart where he calls out my analysis
24 as saying there were a number of signals, a number
25 of CSOs that carry between zero and one, zero and

1 less than one distant signals.

2 And he says that's economically
3 irrational. I include a minimum fee indicator that
4 captures between greater than zero and less than one
5 and then he criticizes that the model is sensitive
6 if he does something different. I am just capturing
7 exactly the phenomenon that is important.

8 Q. How about Dr. Erdem's issue on inclusion
9 of number of distant signals?

10 A. Dr. Erdem misapprehends the purpose of
11 that. We were trying to get at a relative average
12 valuation. The inclusion of the number of distant
13 signals is what allows you to have a benchmark
14 interpretation.

15 Q. What are your thoughts, Dr. Johnson, on
16 Mr. Harvey's critique relating to changing estimates
17 based on minutes included or excluded?

18 A. Well, the benchmark is made up of
19 claimant versus non-claimant minutes. Mr. Harvey
20 repeatedly runs a series of sensitivities or he
21 calls them sensitivities, whereby removing Big 3
22 minutes or changing the treatment of WGN, he says
23 the results change, but he has no justification for
24 removing Big 3 minutes or treating WGN differently.

25 All he is doing is changing numbers for

1 the sake of saying, look, these things change but we
2 actually have to have a reason we change things when
3 we do econometrics.

4 Q. How about Mr. Harvey's paid-programming
5 value criticism?

6 A. Well, Mr. Harvey raises a critique of my
7 model that when he separates out paid-programming
8 minutes from other types of programming minutes, he
9 gets a large positive value. Well, as I said
10 before, it is an average relative valuation, so I
11 don't think that's an appropriate use of the model.

12 But his theory is that paid-programming
13 value has no value at all, but he didn't remove them
14 from the model. If he had simply removed the
15 minutes that he thinks are problematic, he would
16 have found that the estimates really don't change
17 very much at all. So I just don't think that's a
18 valid critique.

19 Q. And, finally, Dr. Johnson, do you have a
20 response to Mr. Harvey's critique relating to
21 negative NFL and playoff values?

22 A. Yes. Mr. Harvey argues that he can
23 change the model and try to separate out NFL or
24 playoffs. He says: Look, I get nonsensical
25 results. I get negative values for these things.

1 The problem is he's relying on -- he is
2 trying to parse the regression so finely that he has
3 got less than .01 and .04 of the total minutes that
4 are used in the entire estimation.

5 If you keep squeezing the model as
6 tightly as possible, I'm not questioning that it
7 can't do certain things. The model wasn't intended
8 to only estimate isolated values for NFL and
9 playoff. It's an average relative valuation for the
10 claimants. It can do that well. And that's the
11 purpose of the model.

12 Q. Just give me a minute. I think that may
13 be the end of my direct examination, but just give
14 me one moment to review my notes, please.

15 CHIEF JUDGE SHAW: Certainly.

16 JUDGE STRICKLER: May I ask a question
17 while you are doing that, Mr. Dove?

18 MR. DOVE: Sure.

19 JUDGE STRICKLER: I don't want to
20 interrupt you, but I want you to pay attention to
21 what I am asking.

22 On the very last point, the negative NFL
23 and playoff values, Mr. Harvey says those are
24 nonsensical and at least from a lay and statistical
25 point of view, one would be concerned without

1 knowing that there seems to be subscriber and viewer
2 value to those games.

3 And you say, well, but they are only a
4 small number of minutes. So are you saying that
5 they are nonsensical but they don't change the
6 underlying or, I should say, the overall values of
7 the categories?

8 THE WITNESS: What I am saying is that
9 his ability to use the model to parse the very,
10 very, very small amount of programming is what's
11 nonsensical. They don't change the overall value of
12 the categories. The average relative valuation is
13 what I can measure.

14 The model is not intended to be able to
15 measure every type of program under the surface. He
16 has picked these. I don't know what other programs
17 he looked at. I don't see any others that he has
18 reported as showing they're problematic for the
19 model but, again, that's not the intent of the
20 model.

21 So I acknowledge that he finds this
22 result, but it is on a very, very, very tiny number
23 of minutes.

24 JUDGE STRICKLER: Does he suggest or
25 state outright that these are indicative of problems

1 that would be pervasive across all types of
2 programming or does he just pick this one out and
3 leave it out there in isolation?

4 THE WITNESS: I don't want to speak for
5 him. I want to be fair to his report, but I don't
6 believe I saw anything besides paid programming and
7 NFL and playoff values in his report. I did not see
8 any other cut that I remember -- and, again, he has
9 a very long report, so I want to be fair -- but I
10 don't recall any other programming. These are the
11 ones that I recall he called out.

12 JUDGE STRICKLER: Do you know when he
13 makes this point as far as you recall, is he talking
14 about -- obviously he is talking about the
15 retransmission of local stations.

16 Do you know whether or not he is making
17 reference to games that were also on Big 3 network
18 stations as well that were not local?

19 THE WITNESS: I don't know that off the
20 top of my head, I'm sorry, sir.

21 JUDGE STRICKLER: Okay. Thank you.

22 BY MR. DOVE:

23 Q. Just one final question, just to clarify
24 on your response on negative NFL and playoff values,
25 Dr. Johnson. I believe you used the number 0.04

1 minutes. And was that -- did you intend to refer to
2 a percentage?

3 A. If I said minutes, I meant as a
4 percentage of the minutes. It's a .01 percent
5 and .04 percent of the minutes. It is a percentage.

6 Q. Thank you, Dr. Johnson.

7 MR. DOVE: The Public Television
8 Claimants have no further questions at this time,
9 Your Honor.

10 CHIEF JUDGE SHAW: Thank you very much,
11 Mr. Dove. Thank you, Dr. Johnson.

12 We will, of course, proceed with
13 cross-examination. I see by the chart that I was
14 provided -- and I do thank the parties for that --
15 that Mr. MacLean, you are up first for
16 cross-examination. Is that still the case?

17 MR. MacLEAN: I believe I am, Your Honor.
18 And would now be a good time for a short break?
19 That would also allow me to get my documents in
20 order.

21 CHIEF JUDGE SHAW: That's where I was
22 headed because this is the time anyway for a break.

23 So let's just round it up to 4:40 and
24 come back at 4:50 eastern then. Thank you.

25 (A recess was taken at 4:38 p.m., after

1 which the proceedings resumed at 4:50 p.m.)

2 CHIEF JUDGE SHAW: All right. Everyone,
3 welcome back from the break. We are on the public
4 record.

5 And, Mr. MacLean --

6 (Recording in progress).

7 MR. TOTH: Thank you, Your Honor.

8 CHIEF JUDGE SHAW: -- you can begin your
9 examination. Thank you.

10 MR. MacLEAN: Thank you, Your Honor.

11 CROSS-EXAMINATION

12 BY MR. MacLEAN:

13 Q. Good afternoon, Dr. Johnson. I am
14 Matthew MacLean. I represent the Settling
15 Devotional Claimants in this matter.

16 A. Good afternoon, sir.

17 Q. Before we really get into things, I want
18 to go back to a question you were asked towards the
19 very beginning and just make sure that you and I
20 have had the opportunity, at least, to see the same
21 things.

22 I believe you said early on that because
23 PTV was not a party in the 2010 to 2013 satellite
24 proceedings, you have not received documents that
25 were produced by CTV in response to a motion to

1 compel in that proceeding. Is that correct?

2 A. Yes.

3 Q. Okay. So I'm going to put up on the
4 screen here Exhibit 7054, which is already in
5 evidence. This is the designated testimony of Dr.
6 Erdem from the 2010 to 2013 satellite proceedings.

7 And this testimony, this designated
8 testimony was actually filed in this proceeding as
9 part of our written direct statement in this case.
10 Is that right?

11 A. I don't know. I am trying to find -- I
12 can't see what you're showing me, sir. I'm sorry.

13 Q. I'm sorry. Is it not on the screen?

14 A. Oh, I'm sorry, I was looking at the wrong
15 thing. I apologize.

16 Q. Well, I guess I will ask then, can
17 everybody --

18 A. That was my error, I'm sorry. I was in
19 the Veritext Exhibit Share and not the -- yeah,
20 sorry.

21 Q. No problem. So on the screen now can you
22 see Exhibit 7054?

23 A. Yes.

24 Q. And Exhibit 7054 being Dr. Erdem's
25 testimony from the 2010 to 2013 satellite

1 proceeding, which we, the Settling Devotional
2 Claimants, have designated and filed in this
3 proceeding with our written direct statement.

4 Have you had the opportunity to review
5 Dr. Erdem's testimony?

6 MR. DOVE: Counsel, if I could for a
7 moment, just ask if I could approach the witness and
8 show him how to use Exhibit Share so he can look at
9 the whole exhibit.

10 MR. MacLEAN: Okay.

11 CHIEF JUDGE SHAW: Yes. Walk me through
12 again how we're handling -- I don't know if this one
13 is one you intended to examine the witness on, Mr.
14 MacLean, but how we're handling exhibits that you
15 want the witness to look at during the course of
16 cross. I mean -- I beg your pardon?

17 MR. SACK: Your Honor, if I may, I
18 believe that the parties are sharing, are putting
19 exhibits in Exhibit Share for whoever is
20 participating to be able to view the exhibits at
21 their leisure, same with the witness, but the
22 parties are also screen sharing the relevant
23 portions to kind of move things along.

24 And, of course, the exhibit is there in
25 its totality for the witness and anyone else to

1 view.

2 JUDGE RUWE: And this is something, a
3 related thing that I have brought up to Ms. Whittle
4 is we have the --

5 CHIEF JUDGE SHAW: I was in the middle,
6 just for the record, I was in the middle of a
7 sentence, but --

8 JUDGE RUWE: I'm sorry.

9 CHIEF JUDGE SHAW: -- okay, everybody
10 keep going.

11 MR. SACK: I apologize, Your Honor. I
12 was just trying to be helpful.

13 CHIEF JUDGE SHAW: All right. I will
14 listen to what you all have. Apparently this is a
15 thing. So I will take it from your perspective.

16 MR. SACK: You had asked a question, Your
17 Honor, and I was attempting to answer the question.

18 CHIEF JUDGE SHAW: I know. It sounded
19 like it was a period but, trust me, there wasn't.
20 Mr. MacLean --

21 MR. SACK: I am so sorry.

22 CHIEF JUDGE SHAW: -- please continue.

23 No, no, it is quite all right. Where are
24 you, Mr. MacLean? What were you going to tell me?

25 MR. MacLEAN: Well, I think that Mr.

1 Dove, who is counsel for Public Television, asked if
2 he could go show the witness how to use Exhibit
3 Share, so that the witness can access the exhibit
4 himself and scroll through if he wants to do so.

5 CHIEF JUDGE SHAW: But you were telling
6 me it is something you were raising with my staff?

7 JUDGE RUWE: No, that was me, Judge Ruwe,
8 saying that the related issue in Exhibit Share,
9 apparently the documents are being uploaded into the
10 numbered exhibits, but I also pointed out at a break
11 that we have the individual witness and sub-folders
12 of direct and cross binders, and I am just -- I was
13 used to reviewing the documents from in those
14 binders and they are provided for at a witness level
15 in cross and direct. And I hope that they would
16 also be put there going forward.

17 CHIEF JUDGE SHAW: And that's exactly
18 where I was going, Judge Ruwe. Okay.

19 JUDGE RUWE: Well, I'm sorry to interrupt
20 the question.

21 CHIEF JUDGE SHAW: No, no, I think you
22 brought it back on track. That's what I was
23 interested in too, what Judge Ruwe just said.

24 MR. TOTH: Can I add one thing, Your
25 Honor? This is Michael Toth. Just remember to

1 refresh your browser. Each time a new exhibit is
2 put into Exhibit Share, in order to see it, you need
3 to refresh your browser. And the easiest way to
4 refresh your browser is just to click on one of
5 those folders, we're in the cross binder now, if you
6 click on that folder in the folder tree on the
7 left-hand side, that will refresh the entire browser
8 and you will be able to see the exhibit.

9 MR. DOVE: That was going to be my
10 comment. We couldn't find the exhibit, but now
11 apparently it has been uploaded and the witness is
12 able to see it. So --

13 CHIEF JUDGE SHAW: That is exactly where
14 I was going, so we got there. And I got to hear
15 from everybody on it, so now I'm sure we're right.

16 Okay. Good. And, yes, if you need to
17 help the witness learn how to do that for the first
18 time, please do, or somebody.

19 THE WITNESS: I think I now have it,
20 given the advice to reload. I now see this first
21 page of a 319-page document. Is that correct?

22 MR. MacLEAN: That should be correct.

23 CHIEF JUDGE SHAW: It sounds like this
24 has been thoroughly explained and vetted. All
25 right. Very good. Now I have to do it. Let's see

1 if I can manage to do it. Thank you very much. All
2 right.

3 We will assume I can. Please proceed.

4 MR. MacLEAN: All right. Thank you,
5 everybody.

6 BY MR. MacLEAN:

7 Q. So really, Dr. Johnson, I just wanted to
8 establish that we did file this and you did have an
9 opportunity to see it whether you looked at it or
10 not; is that right?

11 A. I don't know. I have never seen it. I
12 don't know if I had an opportunity or not. If you
13 are telling me it is in some paper somewhere, maybe,
14 but I have never seen this.

15 Q. Did you review the Settling Devotional
16 Claimants' entire written direct statement?

17 A. I reviewed the expert reports of Dr.
18 Erdem, Dr. Rubinfeld, Mr. Sanders. I don't know
19 that I reviewed other legal documents, no.

20 Q. So you don't know whether or not you
21 reviewed the designated testimony that was filed
22 with the Settling Devotional's written direct
23 statement?

24 A. I have never seen this so if this is
25 designated testimony, I never saw it.

1 Q. Okay. And so then I suppose as a
2 consequence of that, you also have never seen the
3 documents attached to Dr. Erdem's designated
4 testimony from the satellite proceeding, which
5 include all of Dr. Crawford's tests that were
6 produced to us by Commercial Television in the --
7 and I am referring here starting on page 156 of
8 Exhibit 7054, you have not seen these that were
9 attached to the designated testimony that we filed
10 as part of our written direct statement in this
11 case; is that correct?

12 MR. DOVE: Objection. I am unclear on
13 timing. You mean before he filed his written direct
14 testimony or what? I am unclear on that.

15 CHIEF JUDGE SHAW: Well, if Mr. Dove is
16 unclear, Mr. MacLean, maybe you can clarify this.
17 BY MR. MacLEAN:

18 Q. The question, I believe, was you have
19 never seen this?

20 A. That is true, I have never seen this.

21 Q. You're looking at it for the first time
22 as I am scrolling through these pages right now?

23 A. That is correct.

24 Q. Showing you all of the --

25 JUDGE STRICKLER: Mr. MacLean?

1 MR. MacLEAN: Yes, Your Honor.

2 JUDGE STRICKLER: A question for you. I
3 think when I asked this question, maybe of you
4 during opening statements, you said not only was
5 this made available in response to discovery, if it
6 was even at that point, you actually voluntarily
7 provided it to all the parties. Is that correct?

8 MR. MacLEAN: That is correct, Your
9 Honor.

10 JUDGE STRICKLER: Do you know when you --
11 when you provided it to them?

12 MR. MacLEAN: I do.

13 JUDGE STRICKLER: Can you tell us?

14 MR. MacLEAN: Yes, Your Honor. Let me --
15 that's actually my very next exhibit. So I am going
16 to stop screen sharing. Let me see. Yeah. I am
17 going to stop screen sharing this. I apologize to
18 everybody for the fumbling here, but it is just, you
19 know, it is just the reality of these documents.

20 CHIEF JUDGE SHAW: No apologies
21 necessary.

22 BY MR. MacLEAN:

23 Q. If we turn to, if we look at
24 Exhibit 8513, which I am going to screen share now.

25 A. 8513?

1 Q. 8513. I am screen sharing it now. But
2 you should be able to see it on Exhibit Share.

3 Now, this is all in response to Dr.
4 Johnson's testimony this morning. So this was not
5 loaded up as part of our presentation. We're doing
6 this on the fly because I heard Dr. Johnson's
7 testimony. And I want to make sure that everybody
8 knows and can see that we did, in fact, produce
9 CTV's production in the -- from the satellite case
10 in this proceeding.

11 MR. DOVE: Objection, Your Honor. I
12 mean, there are rules in place about when you're
13 supposed to provide exhibits. And if -- that would
14 certainly be an exception that would swallow the
15 rule if counsel could just pick any exhibit that he
16 or she wanted and use it just because, on direct,
17 you know, a witness testified to it, except for
18 impeachment.

19 MR. MacLEAN: And this is for
20 impeachment, because the witness testified that he
21 had not received it.

22 CHIEF JUDGE SHAW: That's how I
23 understood it. So --

24 MR. DOVE: I don't see how this shows
25 that he received it or not.

1 CHIEF JUDGE SHAW: Well, that's -- that's
2 --

3 MR. DOVE: I'm sorry. I don't want to --

4 MR. MacLEAN: To be more precise, I
5 believe the testimony was that the SDC did not
6 produce it. And that's the testimony that I am
7 impeaching by showing Exhibit 8513, an e-mail dated
8 July 18th from Mr. Warley to all the lead counsel in
9 this case, including Mr. Dove, Mr. Cho, and Mr. Ryu,
10 all from Covington, indicating that we are sending a
11 Bates index and a link to download the SDC's
12 voluntary production.

13 This was before any -- before any of the
14 parties had given the SDC any document production
15 requests. And then if we go down to the Bates index
16 you will see the -- starting with the third, fourth,
17 and fifth entries on these, all reference the 2010
18 to 2013 satellite allocation proceeding with the
19 docket number from that proceeding referencing the
20 CTC Bates numbers of the documents we were producing
21 from that proceeding.

22 JUDGE STRICKLER: Mr. MacLean, what I was
23 about to ask you was that date that you provided the
24 information, which was, I think, on the document you
25 had up there, Exhibit 8513, was July 18th. That was

1 after written direct testimonies had already been
2 submitted?

3 MR. MacLEAN: This was -- yes, Your
4 Honor. This was the initial voluntary production
5 that followed the filing of written direct
6 testimony.

7 JUDGE STRICKLER: And it was before the
8 deadline for amended written direct testimony?

9 MR. MacLEAN: That is correct, Your
10 Honor.

11 JUDGE STRICKLER: And obviously before
12 the period for written rebuttal testimony?

13 MR. MacLEAN: That is correct, Your
14 Honor.

15 JUDGE STRICKLER: Thank you, Mr. MacLean.

16 MR. DOVE: And I am also going to -- I
17 would like to raise another objection. And that is
18 that Dr. Johnson never testified that this document
19 was never produced. He testified that he never saw
20 it. And there's a big distinction to that.

21 CHIEF JUDGE SHAW: Well, I don't
22 understand how that is an objection. I mean,
23 overruled. I mean, Mr. MacLean has to do the
24 building blocks to show that, first, he produced it
25 and now we will try to ascertain whether Dr. Johnson

1 did or did not see it. But I don't blame
2 Mr. MacLean for wanting to build it up, but first he
3 produced it. And then we're going to see if the
4 witness saw it, you know.

5 THE WITNESS: I am sorry, I am a little
6 lost. I apologize. Could you ask whatever the
7 current question is?

8 CHIEF JUDGE SHAW: Let me say I view this
9 as a foundational question to the ultimate question
10 that Mr. MacLean has. And so right now is there a
11 pending question for the witness?

12 BY MR. MacLEAN:

13 Q. My question for you, Dr. Johnson, is were
14 you provided with these documents that we provided
15 to Public Television?

16 A. No.

17 Q. And then I am going to put up
18 Exhibit 8514.

19 CHIEF JUDGE SHAW: Oh, and let me just
20 clarify one thing for the witness. You know, Mr.
21 MacLean is showing you, he is also showing us, it is
22 not -- you don't necessarily have to agree, you
23 know, embedded in that question was did you see what
24 we provided to your, you know, your attorneys. You
25 don't have to agree that he did. The question

1 ultimately is did you see it.

2 THE WITNESS: What I thought I was
3 answering was simply I have not seen this before.

4 CHIEF JUDGE SHAW: Right, right, okay.

5 THE WITNESS: Thank you, sir.

6 CHIEF JUDGE SHAW: Sure.

7 BY MR. MacLEAN:

8 Q. So you don't actually know whether the
9 SDC produced the CTV documents to PTV or not; is
10 that correct?

11 A. That is correct.

12 Q. And likewise, I am now looking -- we're
13 now looking at Exhibit 8514, an e-mail from, again,
14 Mr. Warley, counsel for the Settling Devotional
15 Claimants, to counsel for other parties, including
16 Mr. Dove, Mr. Cho, and Mr. Ryu for the Public
17 Television Claimants dated August 11th, 2022, with
18 the SDC's follow-up production.

19 And to your knowledge did you receive
20 from PTV the SDC's follow-up production on August
21 11, 2022?

22 A. If this is follow-up related to the
23 satellite proceeding, I did not see anything about
24 the satellite proceeding.

25 Q. Okay.

1 A. If it is something different, I could go
2 check if it is related to the proceeding that I'm
3 testifying in, that I would know, but this appears
4 to be, if I am correct, this is also related to the
5 satellite proceeding. And I didn't -- I have never
6 seen that.

7 Q. Okay. And so I am going to -- I am going
8 to go down to, starting at, 1, 2, 3, 4, 5, 6,
9 starting at the sixth through the -- I don't know if
10 you can see what I am doing on my screen -- but the
11 6, 7, 8, 9, 10, 11, 12, the sixth through 12th
12 entries on the Bates log, as you can see from the
13 name of the entries, production regarding in each
14 case Dr. Erdem's written direct statement, written
15 direct statement, amended written direct statement,
16 written rebuttal statement and supplemental written
17 rebuttal statement in the 2010 to 2013 satellite
18 proceeding.

19 To your knowledge did you receive from
20 PTV any of these documents?

21 A. No.

22 Q. No, you don't know or no, you did not
23 receive them?

24 A. No, I have never seen any documents from
25 the satellite proceeding until you just showed me

1 these today.

2 Q. Okay. And you don't know because you
3 haven't seen whether or not the Settling Devotional
4 Claimants actually did provide the documents as
5 indicated in these e-mails and letters, correct?

6 A. That is true.

7 Q. Okay. Did you ever ask the Public
8 Television Claimants' counsel for documents relating
9 to the 2010 to 2013 satellite proceeding?

10 A. No, I don't know why I would ask about a
11 proceeding that I was not a party to and was not
12 involved in.

13 Q. You did read Dr. Erdem's testimony in
14 this proceeding relating to the model search that he
15 believed had been conducted on the basis of
16 documents that were produced in the 2010 to 2013
17 satellite proceeding, correct?

18 A. I do recall that, but if you would like
19 to point me to specific testimony, we can look at
20 it.

21 Q. Okay. But having read that, you did not
22 think to ask can I see the documents that Dr. Erdem
23 is referring to in his written testimony?

24 A. No.

25 Q. I am going to at this point put up our

1 PowerPoint presentation of demonstrative. That's
2 where we will be from this point forward.

3 A. Is there a number on that? I'm sorry,
4 sir.

5 Q. Should be -- I don't know. I am going to
6 ask Mr. Warley to chime in whether there is a number
7 or not.

8 MR. WARLEY: 8512.

9 MR. MacLEAN: 8512. There you go.

10 THE WITNESS: Okay. Thank you, sir. I'm
11 sorry. I am trying.

12 BY MR. MacLEAN:

13 Q. It is challenging for all of us, okay.

14 And it should be on your screen now as
15 well, because I am displaying it.

16 A. Yes.

17 Q. All right. We're going to go to slide 2.

18 Slide 2 is a figure from your direct
19 testimony showing your proposed shares based on your
20 model, correct?

21 A. One of the estimates, yes.

22 Q. Well, this is -- this is your model that
23 you are proposing, correct?

24 A. Yes, but as you heard this morning, I
25 provided several alternatives that I also think are

1 reasonable, but this is the baseline model, yes.

2 Q. Your model yields a four-year average of
3 48.5 percent for Public Television?

4 A. That is correct.

5 Q. That's more than any other model offered
6 in this proceeding, correct?

7 A. For -- in what sense? For Public
8 Television?

9 Q. For Public Television.

10 A. Well, with respect to what I think the
11 final models are for people, yes, I think that is
12 true.

13 Q. And, in fact, it is more than any other
14 methodology offered in the history of Copyright
15 Royalty proceedings for Public Television, correct?

16 A. That I don't know, sir. The environment
17 in 2014 to 2017 is unique. My model appropriately
18 deals with the environment we're living in in this
19 particular proceeding.

20 Q. Did you know that your team experimented
21 with approximately 500 models?

22 A. I reject your question. That is
23 inappropriate and that does not describe what my
24 team did. It is going to be a very long
25 cross-examination if we continue to do that.

1 My team did their work to diligently look
2 at the data and the regression. So I am not going
3 to accept the premise of your question that my team
4 experimented. That is improper and an incorrect
5 characterization of what my team did.

6 Q. Did you know that your team ran more than
7 500 models?

8 A. I knew my team ran models. I did not
9 know the count. I wouldn't know the count. The
10 count is irrelevant.

11 Q. And so to this very day, you don't know
12 how many models your team ran?

13 A. No, sir, that's not correct. I have
14 carefully looked at the entire production of
15 everything that was done by my team on a consulting
16 basis as well, and I know exactly. There is a
17 matrix we have that actually shows the runs that
18 were done.

19 So I do know. It is approximately 450 or
20 so, but we can go through the matrix and we can talk
21 about them.

22 CHIEF JUDGE SHAW: I would like to ask a
23 clarifying question for my own benefit. We have had
24 the word "models" and "runs." Is that the same
25 thing for the purposes of this question? I am

1 assuming you could do several runs of one model, but
2 overall are we talking 500 runs or 500 models?

3 THE WITNESS: We're talking 500 runs.
4 There are several models in the matrix that are
5 identical, run on different data sets at different
6 points in time. So it is not 500 different
7 independent regressions. It's different regressions
8 -- and 500 is not quite the number -- where many of
9 them are repeating the same exact model on different
10 data.

11 JUDGE RUWE: Can we -- sorry, Judge.

12 CHIEF JUDGE SHAW: Are we onboard with
13 the same terminology? Because you were using the
14 word "model" if I remember correctly.

15 MR. MacLEAN: I understand the
16 distinction that you and the witness are drawing.

17 CHIEF JUDGE SHAW: I am not drawing
18 anything. I am just trying to make sure that I know
19 what you're asking.

20 JUDGE RUWE: I want to follow-up after
21 the response. I'm sorry. Given that response, so I
22 would take it that approximately 450 runs is what
23 you're responding to, and I guess I would say then
24 how many models total were within those runs?

25 THE WITNESS: Many of them are

1 duplicative. I don't know the exact number as I sit
2 here. We would have to go through and literally
3 parse them. But because of the dimensions in terms
4 of the key dependent variables, which were the three
5 that were tested in the set of variables, every time
6 you get a new data set you have to run about 20 to
7 30 regressions again, but they are the same
8 regressions.

9 So I can't give you the precise answer,
10 but they do multiply quickly. There are some that
11 are one-off and then there are several that are
12 repetitious. And I would have to go back.

13 JUDGE RUWE: Well, I think you're going
14 to be here tomorrow. I might ask the same question.
15 I would hope that maybe you could answer with more
16 specificity.

17 THE WITNESS: I will look at that
18 tonight, sir, to be able to try to answer the
19 question.

20 JUDGE RUWE: Thank you.

21 BY MR. MacLEAN:

22 Q. Did you see that Dr. Erdem found that
23 there were more than 400 unique specifications
24 tried?

25 A. Well, I saw Dr. Erdem said that, although

1 by reviewing Dr. Erdem's work, he seems to be
2 confused about what is in the matrix. So I don't
3 give any credence to Dr. Erdem's calculations
4 because Dr. Erdem made mistakes in his report.

5 Q. And have you checked to see if there were
6 more than 400 regression specifications, unique
7 regression specifications tried?

8 A. No, because, again, they are for
9 different purposes at different points in time.

10 Q. And you have testified at this point that
11 your team compiled the results of approximately 450
12 of the, we will call them, model runs into a
13 Waldfogel-style regression log, correct?

14 A. That is true. This is a mechanical log
15 over the life of the project of regressions that
16 they were mechanically running, yeah.

17 Q. When did you first see this
18 Waldfogel-style regression log?

19 A. After the motion to compel was complied
20 with.

21 Q. So you saw it around the first time that
22 we saw it; is that right?

23 A. I don't know when you saw it first time,
24 but that's when I saw it.

25 Q. You saw it around the time it was given

1 to us for the first time; is that correct?

2 A. I believe so. As I said, it is around
3 that time, yes.

4 Q. And did you know that of all the runs
5 that there were -- well, let me -- I want to focus
6 your attention here. You can just look at this
7 screenshot of the spreadsheet.

8 Look over in column A. Do you see that
9 column A is entitled model?

10 A. I do.

11 Q. And for the most part, each model is
12 given a unique number; is that right?

13 A. That is incorrect.

14 Q. It's incorrect?

15 A. It's incorrect, sir.

16 Q. Okay. You don't think that each model is
17 given a unique number?

18 A. If you go across the tabs you will see
19 duplication of the numbers. They are not all
20 unique. That is incorrect.

21 Q. Okay. I did say "for the most part."
22 There are a few that are duplicate. Are you still
23 saying I am not correct?

24 A. Sir, we're under cross-examination. I am
25 going to be very precise. Your expert blindly put

1 those model numbers into a regression that he is
2 drawing conclusions from incorrectly. "A few" is
3 not good enough for the standard for doing
4 econometric work. So you have to be precise.

5 Q. Well, actually, Dr. Erdem specifically
6 noted that there were -- that there were a few
7 duplicates, correct?

8 A. He did. Yet he continued to blindly put
9 it into his regression trend without actually
10 accounting for it or thinking about what it meant
11 for the conclusion he was drawing.

12 Q. I noted that column A says model, but you
13 would reject the notion that each of these was a
14 unique model; is that what you are saying?

15 A. I am saying that the numbering isn't
16 unique necessarily. I am saying there is overlap in
17 model numbers across different tabs because in the
18 ordinary course of keeping a log of just anything
19 that someone was running mechanically, they are
20 including that.

21 But we can look at a given log and we can
22 look at a given regression, the output underneath it
23 and see how it matches.

24 Q. Did you know that model 436 is the model
25 that was chosen as the baseline model that you

1 presented?

2 A. I didn't know it by Number 436, but I
3 chose it so, of course, I know that's the model.
4 But I didn't know it was Number 436.

5 Q. Out of what selection of models did you
6 choose it?

7 A. Well, I showed you before, if you go
8 through the evolution of the case and you go through
9 the evolution of the regressions that I looked at, I
10 showed you first the PowerPoint from the 23rd where
11 I showed you the various iterations of log versus --
12 log royalties versus royalties per subscriber. I
13 showed you the very iterations of those that I
14 looked at.

15 Basically I said I think it is a safe
16 estimate if you look at those after the date on the
17 PowerPoint slide after the fourth, the 100
18 regressions from there, there's the set from which I
19 am considering and thinking about the regressions.

20 Q. And so the set that you were choosing
21 from was the set of -- of models that were run from
22 February on; is that what you are saying?

23 A. I am saying that the set of models that I
24 asked my team to look at, things that I have asked
25 them to modify, start with the Crawford regression

1 and move forward from there, yes.

2 Q. All right. I'm sorry, I didn't
3 understand that.

4 Are you talking still in February of
5 2022?

6 A. Yes.

7 Q. Okay. So you are saying that you chose
8 model 436 out of the models that were run from
9 February 2022 on; is that right?

10 A. I chose a model. I don't know what the
11 number was. I know now it corresponds to 436. But
12 I chose a model based on the investigation that I
13 did. I put forward that set of regressions in that
14 slide that you saw earlier today. That's the set
15 from which I am thinking and considering the models.

16 Q. And did you when you were choosing model
17 436, did you actually see the other models that were
18 run from February 2022 on?

19 A. I saw lots of models at that point in
20 time. When we're in those meetings, I am asking to
21 look at the code, I am asking to look at the
22 regressions. If there's a regression there in the
23 PowerPoint, I'm asking to look at it.

24 It is possible I have also looked at
25 others along the way on the screen or things like

1 that, but you have the full set that I looked at.

2 Q. So what is the full set that you looked
3 at? How many models did you look at? Why don't I
4 ask it that way.

5 A. Again, it is a little hard with
6 precision, but roughly I have identified about 101
7 that I think would be the feasible set that I'm
8 looking at. But more importantly is the process by
9 which I got to the set that I considered.

10 Q. But I'm asking about how many models did
11 you see --

12 A. I am saying --

13 Q. -- before you selected 436?

14 A. Once again, I selected a model which
15 happens to be 436. I have given you the set of
16 about 101 regressions that I considered for that
17 purpose. Looking at code, talking about them with
18 my team, that's what the process is.

19 But there isn't some magic -- beyond a
20 log that the research team is keeping separately,
21 there isn't some set of, okay, here's -- here's a
22 paper stack of everything I ever looked at. This is
23 the set from which I am picking in thinking about
24 the key issues.

25 Q. So did you see all of those models from

1 February 2022 on?

2 A. Look, I think I did look. I looked at a
3 lot of models. Am I sure I looked at every single
4 model? I am not sure every single one but I looked
5 at a lot of models, yes. Every time that we were
6 sort of trying to make these decisions, I am trying
7 to look at these models to understand the set of
8 issues I described earlier today.

9 Q. And so is there any reason that these
10 models that you now say you looked at at that time
11 were not provided to us in discovery before we filed
12 a motion to compel?

13 A. Well, first of all, as I explained
14 before, the initial starting point was I followed
15 what were the Federal Rules of Civil Procedure. I
16 have testified in many, many econometric cases. The
17 only thing you are required to turn over is those
18 that are in your report. That was my understanding.

19 But when counsel informed me two weeks
20 later that there were -- that I also needed to turn
21 over others, we started to turn over the PowerPoints
22 that had that. So that's why I reported those
23 things that I thought were important for my report
24 that I thought were helpful. I did not think that
25 the standard was I had to turn over every regression

1 that I considered or every regression that the team
2 ever ran. That is unprecedented in any case I have
3 ever testified in in my entire career.

4 Q. The PowerPoint presentation you
5 mentioned, and that was the PowerPoint presentation
6 that has about 17 models in it dated February 22,
7 2022; is that correct?

8 A. Yes, that is correct.

9 Q. And that PowerPoint presentation also was
10 not provided to us until after we filed a motion to
11 compel; is that right?

12 A. I believe that was provided to you within
13 two weeks of my report going in, actually, sir.

14 Q. You don't know when it was provided to
15 us, do you?

16 A. I think you know, but I know I gave it to
17 counsel and it was my understanding that it was
18 given to you within two weeks of me providing it, my
19 report --

20 Q. How did you --

21 A. Because I was told by counsel.

22 Q. Counsel told you that they gave it to us
23 two weeks after you filed your report?

24 A. That was my understanding, that we gave
25 that to counsel two weeks after. I had thought you

1 had gotten that in that timetable right away, yes.

2 CHIEF JUDGE SHAW: May I ask just a quick
3 clarifying question? We're using the word "report."
4 Do we mean to be using the report, the word report?

5 THE WITNESS: I mean the direct report in
6 July.

7 CHIEF JUDGE SHAW: I beg your pardon?

8 THE WITNESS: I mean the direct report in
9 July.

10 CHIEF JUDGE SHAW: Yeah, I was actually
11 phrasing this more for Mr. MacLean.

12 THE WITNESS: I'm sorry, sir.

13 CHIEF JUDGE SHAW: No, that's helpful.

14 But, Mr. MacLean, do you always mean to say
15 "report"?

16 MR. MacLEAN: I think I was following the
17 witness' terminology but I understood him to mean
18 and I will ask.

19 BY MR. MacLEAN:

20 Q. Dr. Johnson, when you say report, you
21 mean the written direct statement that you filed at
22 the beginning of this case, correct?

23 A. Yes.

24 Q. Okay.

25 CHIEF JUDGE SHAW: And you know counsel

1 will know why I asked that, because a lot of times
2 in District Court other agencies' experts file
3 reports that are not testimony. We're not talking
4 about that, right? Okay. Right, Mr. MacLean?

5 THE WITNESS: I was not.

6 CHIEF JUDGE SHAW: I know you aren't, Dr.
7 Johnson. Mr. MacLean, we're on the same page.
8 You're talking about his written direct testimony,
9 right?

10 MR. MacLEAN: Yes, that is what I
11 understood him to be referring to. And that is what
12 I --

13 CHIEF JUDGE SHAW: I did too. I just
14 didn't want someone reading this transcript down the
15 road to think that there were expert reports
16 floating around, you know, that are informing
17 discovery questions or something like that. That's
18 just, you know, wrong.

19 This is the direct testimony. Thank you.

20 MR. MacLEAN: Okay.

21 BY MR. MacLEAN:

22 Q. So, Dr. Johnson, that February 22
23 PowerPoint presentation contained about 17
24 regression models, correct?

25 A. Yes.

1 Q. You just said you considered more than
2 100; is that correct?

3 A. Yes.

4 Q. Why were the other 100 not turned over to
5 us?

6 MR. DOVE: Objection, lack of foundation.

7 THE WITNESS: Again, you actually have
8 everything. You have more than 100. I followed
9 the -- what counsel instructed me to do in terms of
10 what I was required to turn over. And when we were
11 required to turn over everything, everything has
12 been turned over that my team ever ran, so we have
13 given you everything.

14 BY MR. MacLEAN:

15 Q. The test results that were produced in
16 response to the Judges' order on the SDC's motion to
17 compel consist of work performed by analysts that
18 were operating independent of you, weren't they?

19 A. Again, it depends for which purpose. I
20 have a team that I assemble. I have a team that I
21 rely upon. For the things that I am ultimately
22 relying upon in my report, they are not working
23 independent.

24 There are other analyses that are done,
25 both on a consulting basis that my team runs. There

1 are some things that are done independent. But
2 ultimately the things that support my report and my
3 opinion are under my guidance and I look at them so
4 I can make a determination.

5 Q. But in this case, with respect to the
6 hundred or so models that you are referring to, you
7 did not rely on those analysts' work, correct?

8 A. I am confused by your question, sir. I
9 don't understand how you can try to separate my team
10 from mine, in one respect, and then not in another.

11 If a team is running regressions on my
12 behalf, you know, I would talk to Mr. Kheyfets,
13 Dr. Colino, Ms. Cheng, someone on the team may run
14 the results. I would look at them with those
15 people. That's the way the process works.

16 So I guess in that respect I am relying
17 on them, but then there were other things that were
18 done that I did not rely upon for the purposes of
19 determining what the model is that I would put
20 forward.

21 Q. You did not personally consider, review,
22 or perform the regression tests in the
23 Waldfogel-style regression log, correct?

24 A. I did not run the regressions. I
25 directed the parts of the log that are relevant to

1 my testimony, that is true, but I did not do that,
2 no. I don't run the regressions myself. I look at
3 the output. I look at the results. I guide what I
4 would like to see done. I talk to my team, but I
5 did not personally run the regressions, no, I don't
6 do that.

7 Q. You didn't personally review the results,
8 correct?

9 A. I personally reviewed the results for the
10 models that I relied upon, but I did not personally
11 review the log. I didn't know the log existed.

12 Q. You did not instruct your team to perform
13 these tests, did you?

14 A. Which tests?

15 Q. The tests in the Waldfogel-style
16 regression log?

17 A. Well, there is four or five tabs. I
18 instructed my team to build the data. That's what
19 basically the first three or four tabs are. I
20 instructed my team to replicate the Waldfogel-style
21 regression from Crawford. Those are reflected here.

22 I instructed my team to look at the
23 different models with respect to the various
24 elements of the Crawford regression. Those are
25 reflected here. There are other things I did not

1 instruct them to do that they did, that is true, but
2 I absolutely instructed for those things that I want
3 and they are reflected in the log, but that's
4 different than me directing that the creation of the
5 log or everything in the log, no, there was a lot of
6 other work done basically to get the data together
7 and to assess the data, so that I could begin to
8 really study the question.

9 Q. Okay. Let's go to the next slide, slide
10 6, which is from Exhibit 5000, starting on page 125.
11 Exhibit 5000 is Public Television's consolidated
12 response in opposition to Settling Devotional
13 Claimants' motion to compel discovery and
14 supplemental brief.

15 First of all, do you recall why the
16 Settling Devotional Claimants filed a supplemental
17 brief?

18 A. No.

19 Q. Did you review the Settling Devotional
20 Claimants' supplemental brief?

21 A. I don't believe I ever reviewed legal
22 documents, not those legal documents, I don't
23 remember that, no.

24 Q. Did you review the Judges' decision on
25 the Settling Devotional Claimants' motion to compel

1 discovery?

2 A. Yes, I did, because I wanted to make sure
3 I was complying with it.

4 Q. And that -- that decision did mention the
5 SDC's supplemental brief, correct?

6 A. It did, yes.

7 Q. And it mentioned the reason for filing
8 the supplemental brief, correct?

9 A. I recall it definitely mentioned some
10 reasons, yes.

11 Q. And it was because after filing the
12 motion to compel, we received that PowerPoint
13 presentation of February 22nd, 2022, correct?

14 A. Again, I don't want to characterize your
15 briefing. You know it better than I do. That may
16 well have been the reason, but, again, I don't feel
17 comfortable characterizing your brief when I don't
18 really remember ever looking at that and only
19 reading the decision on the motion to compel.

20 Q. Okay. Taking a look at Exhibit 5000,
21 page 21, and you will see the relevant section in
22 front of you. You will see that Public Television
23 makes the argument "here, the only dispute is over
24 work performed by analysts operating independent of
25 Dr. Johnson and on which Dr. Johnson did not rely."

1 Correct?

2 A. You read that correctly, yes, sir.

3 Q. Did you tell Public Television's counsel
4 that you did not rely on the work performed by
5 analysts that had not been produced to the SDC?

6 A. I don't recall having that discussion at
7 all.

8 Q. Do you know where Public Television's
9 counsel might have gotten this idea that you did not
10 rely on the work that wasn't being turned over to
11 us?

12 A. Well, again, I don't know what you're
13 talking about. I described the work that I did rely
14 upon and those are things that I think have been
15 turned over. That's what is there. But I don't
16 know -- I think this is talking about a broader set
17 of analyses, but I don't know.

18 I don't recall having that discussion
19 with counsel. I did not discuss this issue with
20 them, other than what is it that I relied upon, here
21 is the materials that I have that I relied upon.
22 That's what I -- that was the -- that was the
23 content of what I had.

24 And obviously once I read the motion to
25 compel, it was anything we had at all was turned

1 over.

2 JUDGE STRICKLER: I have a question for
3 you, Dr. Johnson.

4 Focusing in on the language that's
5 bounded in red on this exhibit on the slide 5, you
6 distinguished, I think earlier, between work that
7 was being done at Edgeworth that was related to your
8 position as the testifying expert and you also made
9 reference to consulting work that was being done at
10 Edgeworth in connection with this proceeding. Is
11 that correct?

12 THE WITNESS: Yes, sir.

13 JUDGE STRICKLER: Were there analysts at
14 Edgeworth who reported to someone else, other than
15 you, in connection with the consulting work that was
16 being done with regard to this matter?

17 THE WITNESS: Yes. I was not involved in
18 any of the consulting work. So Mr. Kheyfets or
19 Dr. Colino would have been supervising them for that
20 purpose.

21 JUDGE STRICKLER: As a general rule in
22 the chain of command at Edgeworth, they reported to
23 you?

24 THE WITNESS: With respect to the
25 testifying, absolutely. And then they handled the

1 consulting on their own separate from me.

2 JUDGE STRICKLER: So they did not report
3 to you on the consulting?

4 THE WITNESS: That is correct.

5 JUDGE STRICKLER: Thank you.

6 BY MR. MacLEAN:

7 Q. Let's take us to the next slide, which is
8 also from Exhibit 5000 starting on page 125, 126.

9 This is a letter referencing the Public
10 Television -- this is attached to the Public
11 Television's opposition, a letter referencing the
12 Public Television's production to the SDC following
13 the filing of the SDC's motion to compel in which
14 they provided some additional information, including
15 code files and the PowerPoint presentation from
16 February 22nd.

17 I want to direct your attention to this
18 language here, "the documents produced include any
19 such regression specifications, sensitivities, and
20 tests that Dr. Johnson did not personally consider,
21 review, or perform; that he did not instruct others
22 to perform; and whose results he did not review or
23 consider."

24 So is that an accurate statement with
25 respect to the -- to the regression tests that were

1 performed?

2 A. Again, it is a little hard without
3 knowing which documents you're talking about, but if
4 you're talking about the content at the matrix,
5 there are clearly things in the matrix that I never
6 saw and never relied upon or considered.

7 And then there are some that are recorded
8 there that I did consider, which is part of the set,
9 makes up the PowerPoint and the discussions with my
10 team after February.

11 Q. Who selected the 17 models to be
12 presented on the February 22nd PowerPoint
13 presentation?

14 A. Well, that was with the work with my
15 team, I instructed Mr. Kheyfets and Dr. Colino to
16 replicate Crawford and show me what are the various
17 elements of it in terms of how the model worked. So
18 they prepared that for me and then we had a
19 discussion about those various iterations. We
20 talked back and forth about it.

21 But Mr. Kheyfets and Dr. Colino prepared
22 the presentation with the team.

23 Q. Did you tell them which models to include
24 in the PowerPoint presentation?

25 A. Not at first, no, because I hadn't seen

1 it yet, but I surely asked lots of questions about
2 them, asked for other models, things like that.

3 Q. Were those the first models, model
4 results that you saw in this matter?

5 A. Those were the first on the updated data.
6 Obviously I had seen what Dr. Crawford did before,
7 but that was really the beginning of my engagement
8 on the regression modeling specifically having had a
9 data set that I could rely upon, yes.

10 Q. In your direct testimony you talked about
11 basically two dependent variables, the royalties per
12 subscriber and the log of base royalties.

13 Did you know that your team tested more
14 than 40 different dependent variables in the course
15 of their tests?

16 A. I saw that assertion by Dr. Tyler and Mr.
17 -- Dr. Erdem, but, again, I think that's
18 disingenuous and that's not correct. The team
19 looked at essentially three key variables. There
20 was the discussion about the log of base royalties
21 versus the per subscriber, the royalties per
22 subscriber. There was discussion about base 3.75
23 versus base and 3.75 together.

24 I saw Dr. Tyler put forward a table where
25 he says there's 40, but essentially many of them are

1 he is just taking the name from the log and hasn't
2 looked to see under the surface that they are also
3 measuring base royalties or one of those.

4 So I don't think -- the 40 number is
5 clearly an overestimate. There were basically those
6 three iterations is what were under consideration.
7 Does that mean no one ever ran anything else? No,
8 it is possible. We could look at those. But those
9 were the three that were under consideration.

10 Q. You haven't counted how many dependent
11 variables were tested by your team, correct?

12 A. Again, I am going to -- I have shown you
13 or pointed to Dr. Tyler's table. That appears to be
14 the mechanical calculation. I did not make a count
15 independently, that is true.

16 Q. So you don't know how many dependent
17 variables were tested by your team, correct?

18 A. Mr. MacLean, I am going to be a little
19 bit more precise. I have told you what Dr. Tyler's
20 representation of the matrix is. I could go back
21 and literally go through every single line and try
22 to count that. That is not an exercise I engaged
23 in, that is true.

24 Q. Okay. Did you know that your team tested
25 models with both linear and log-linear functional

1 forms?

2 A. Yeah, I am aware that there were those
3 tests, but, again, that is -- that is partly enabled
4 to sort of look at how the model works, yes, that is
5 true.

6 Q. Did you know that they tried many
7 different combinations of control variables?

8 A. I did know that. I directed that. I
9 asked them to tell me in that table, I wanted to
10 know what the consequences were of the different key
11 control variables. I did know that.

12 Q. When did you start directing the team to
13 try different combinations of control variables?

14 A. Again, in the February meeting, one of
15 the directions for the presentation was that I
16 wanted to know what made the model work. You see
17 there's a table. Judge Strickler asked me about it
18 earlier today, about the individual coefficients,
19 their models.

20 At that point that's what I'm looking at.
21 That's where I'm sort of refining and instructing
22 them along those lines. That's where that
23 discussion began.

24 Q. So the answer is February 2022, that's
25 when you gave instructions?

1 A. Yes.

2 Q. Did you know that your team ran the
3 models on multiple different data sets?

4 A. Of course, yes.

5 Q. Did you know that -- and going to the
6 next slide -- did you know that during testing, your
7 team set up two different work flows, one for John's
8 report, he'll see, and one for other stuff, John
9 won't? Did you know that?

10 A. I did know there were two separate
11 directories. This was actually at instruction of
12 counsel, but it is also consistent with our
13 practices. We're often instructed by counsel to
14 have two separate directories. That's standard
15 practice.

16 Q. And you were not able to see what was in
17 the PBS royalty consult directory, other stuff,
18 correct?

19 A. Well, anything I asked for I could see,
20 but I did not have access to it. That is true.

21 Q. You understand that you are the John
22 referred to, Dr. John Johnson, referred to in
23 Mr. Munoz-Alonso's notes, correct?

24 A. Yes.

25 Q. And do you know what Mr. Munoz-Alonso was

1 supposed to be "very car" about?

2 A. All I can tell you is Mr. Munoz-Alonso
3 was at this point a researcher for two months. I
4 think he was just being very careful overall. He
5 was new to the job. I think he was just taking
6 instructions about what to do.

7 But beyond that, I assume, given there
8 was the potential for consulting work, that was
9 supposed to be out of my purview, I think that's
10 what he was likely being very careful about, but I
11 don't know beyond that.

12 Q. Was the running of different models part
13 of the consulting work that was out of your purview?

14 A. It depends for what purpose. It is my
15 understanding, again, now that I have seen the
16 production, I do understand that during the course
17 of the engagement, there was consulting to counsel
18 where they were discussing some modeling issues.

19 But ultimately anything related to my
20 opinion, to my report, to what I needed to do, I had
21 access to, and I asked for.

22 Q. Did you know that your team withheld data
23 from you until after they performed tests on it?

24 A. I think that's a bit of an unfair
25 characterization, sir. There was never data

1 withheld. There was a process by which I asked my
2 team to build the data. You have an e-mail here
3 that speaks to consulting engagements, but I don't
4 think data was withheld. I can't think of any data
5 set I asked to see that the team didn't let me see.

6 JUDGE STRICKLER: Mr. MacLean, I have a
7 question for you.

8 MR. MacLEAN: Yes, Your Honor.

9 JUDGE STRICKLER: In the course of
10 discovery in this matter, did you ever receive from
11 Public Television a privilege log asserting that any
12 of the regression-related materials were privileged
13 or more precisely were subject to the attorney work
14 product rule and were being withheld on that basis?

15 MR. MacLEAN: Yes, Your Honor, we
16 received such a privilege log along with Public
17 Television's production in response to the Judges'
18 order on the SDC's motion to compel.

19 JUDGE STRICKLER: It seems like the
20 answer is self-evident, but am I correct that the
21 documents you did receive were not -- were not
22 asserted to be covered by the attorney work product
23 rule?

24 MR. MacLEAN: That is correct. I do see
25 that this e-mail is marked privileged and

1 confidential, but it was produced to us and was not
2 included on PTV's privilege log.

3 JUDGE STRICKLER: And the documents you
4 received, again, to be self-evident, were not
5 withheld as work product material, but there is
6 other material set forth in a log that we have not
7 seen that was identified as attorney work product
8 and withheld?

9 MR. MacLEAN: That's correct, Your Honor.
10 And also the documents that we did receive, many of
11 them contained redactions that were also, I believe,
12 listed on the log.

13 JUDGE STRICKLER: I did see the word
14 "redacted" on some. We didn't have any knowledge of
15 why because we have not seen the log. You have made
16 the log an exhibit; am I correct?

17 MR. MacLEAN: We have not made the log an
18 exhibit. We're happy to, of course, but it is my
19 understanding that where you see redactions, it is
20 on PTV documents. Those are -- we didn't make those
21 redactions. Those redactions were made by PTV to
22 place on the log and withheld.

23 JUDGE STRICKLER: Let me ask this
24 question to Mr. Dove.

25 Mr. Dove, in the privilege log as you

1 recall it, I don't know that we necessarily need to
2 have this marked for identification or as an
3 exhibit, but, Mr. Dove, did you, in fact, assert the
4 attorney work product rule as a basis to withhold
5 certain documents in connection with -- in
6 connection with your production and, or I should say
7 response to the motion to compel and in response to
8 our order?

9 MR. DOVE: A very, very small subset of
10 documents, mostly drafts that included attorney
11 comments on those, a few e-mails, and documents
12 relating to some settlement-related analyses and
13 some others where, you know, clear attorney mental
14 impressions, but the vast majority of documents we
15 produced, including documents that were part of the
16 consulting file as opposed to the report or Johnson
17 testimony file.

18 And I am probably as far out there as I
19 can get from my team. Others on my team know more
20 details of that but that's my understanding.

21 JUDGE STRICKLER: And this privilege log
22 that you produced or provided to the Settling
23 Devotional Claimants' counsel, was that before our
24 order compelling discovery or after?

25 MR. DOVE: No, Your Honor, that was

1 after, as part of your order compelling discovery,
2 there was a part of that order that would order the
3 production of a privilege log, which we then
4 provided.

5 JUDGE STRICKLER: Thank you.

6 Mr. MacLean, your witness.

7 MR. MacLEAN: Thank you.

8 BY MR. MacLEAN:

9 Q. Well, this particular e-mail relates to
10 distant signal data for the years 2014 through 2017
11 received from Cable Data Corp. That is actually
12 part of the distant signal data that was ultimately
13 used as part of the regression model presented in
14 your report, correct?

15 A. I don't know that from this e-mail. I
16 don't know that. I know that Cable Data Corporation
17 data was used, but I don't know what this data was.
18 I did point out there were mistakes in the data
19 early on, things like that. I don't know why this
20 -- I just can't answer that question that way. I'm
21 sorry, sir.

22 Q. So you don't know why your team was
23 instructed not to share these files with John?

24 A. I do not. I know this is in July of
25 2021. This is very early on. I don't know.

1 Q. We have seen this before and we have
2 discussed it a little bit. I understand you
3 interpret the line at the very top of this page of
4 notes from Ms. Yan as saying "pooled regression
5 436," and not "picked regression 436," correct?

6 A. It is not an interpretation. It's a
7 fact. That says "pooled."

8 Q. And I accept that. And in fairness to
9 Dr. Erdem, 436 was the regression that was
10 ultimately picked, correct?

11 A. No, that's incorrect. First of all, it
12 is not fair to Dr. Erdem. He offered economic
13 testimony interpreting handwritten notes. If he is
14 going to make an accusation of this nature, he needs
15 to be able to read the notes properly.

16 So I can't be fair to Dr. Erdem. And,
17 second, pooled regression 436 happens to correspond
18 with the log, it is the regression, it happens to
19 correspond to a regression that I ultimately picked.

20 So, again, I am willing to be reasonable,
21 but I am not willing to give Dr. Erdem the benefit
22 of the doubt when he is accusing me of a very
23 serious offense to an econometrician on the basis of
24 misreading a handwritten note and then offering
25 sworn testimony on it.

1 Q. I did say it was the regression that was
2 picked. And that is accurate, correct?

3 A. It was the regression that I picked. Dr.
4 Erdem said it was the regression that Ms. Yan
5 picked.

6 Q. And Dr. Erdem also points out, and I will
7 ask you if you agree with Dr. Erdem's interpretation
8 of this line, "anything we show John gets turned
9 over. Don't show local -- all others good."

10 Do you agree with Dr. Erdem's reading of
11 that line?

12 A. I do agree that that is what Ms. Yan
13 wrote in her notes.

14 Q. Okay.

15 JUDGE STRICKLER: I have a question for
16 you, Dr. Johnson. I understood your testimony
17 earlier in cross-examination, while these documents
18 were being prepared, at least you personally were
19 under the understanding that as a matter of course,
20 anything that was provided for consulting purposes
21 or created for consulting purposes would be kept
22 from you and would not be produced and you
23 understood that to be consistent with the Federal
24 Rules of Civil Procedure, which you were assuming
25 applied in connection with this proceeding?

1 THE WITNESS: Yeah, I basically had
2 followed that, those rules, that's what I am used to
3 in my testifying career. Counsel did not tell me
4 that was different. I found out later that it was.
5 But that was not what I understood to be the rules.

6 JUDGE STRICKLER: Thank you.

7 BY MR. MacLEAN:

8 Q. So it was the intention then, whether
9 consistent with the rules or not, it was the
10 intention not to show you things that were not to be
11 turned over to other parties, correct?

12 A. Again, I think you need to be a little
13 careful. Anything I needed to formulate my opinion,
14 I could look at. And if it needed to be turned
15 over, it needed to be turned over. But there were
16 consulting assignments going on, and I did
17 understand those wouldn't be turned over.

18 So that was my understanding. That was
19 the instructions as I understand it to the team.

20 Q. And did those consulting assignments have
21 anything to do with testing different regression
22 models?

23 A. Well, again, I wasn't privy to those.
24 Now I have seen the turnover that was given, and I
25 did obviously look at the turnover after it was

1 compelled. And I did see some discussions of
2 regressions in PowerPoints. I did see some e-mails
3 about different elements of the data.

4 So it does appear that there were some
5 consulting assignments that were done that also
6 involved regression analyses, yes, that is true.

7 Q. Did you know that Ms. Yan was making
8 judgments about what to show you based on what would
9 be turned over?

10 A. I don't interpret it this way. I don't
11 think that's correct. Ms. Yan would show me
12 anything I asked her to show me through
13 Mr. Kheyfets, Dr. Colino. There was nothing that
14 was hidden from me. If I wanted to see it, I could
15 see it.

16 Now, obviously if I don't know something
17 is being done, that's different, but since I am
18 conducting an analysis and asking, I want to see
19 this, I want to see that, anything I want to see, I
20 am allowed to see. I ask for it from my team. They
21 bring it to me.

22 JUDGE STRICKLER: Dr. Johnson, just help
23 me, I think this was already said but I don't
24 recall.

25 The document that's up on the screen now,

1 and the handwriting on it, that's whose handwriting?

2 THE WITNESS: This is one of my research
3 assistants, Ester Yan. She is kind of the most
4 senior researcher at this point in time. This is
5 the researcher that Dr. Erdem has asserted picked
6 the regression model and actually is the one that
7 made the decisions on the regression. That's his
8 testimony. And that's what I said did not happen.

9 JUDGE STRICKLER: I understand. So this
10 Ms. Yan, is that how I would refer to her?

11 THE WITNESS: Yes, you would.

12 JUDGE STRICKLER: Ms. Yan, she was
13 working and reported to you?

14 THE WITNESS: Yes. Obviously he is
15 talking to Mr. Kheyfets, Dr. Colino, Dr. Cheng, but
16 I did have some meetings with her, yes, although I
17 don't recall if I met with her on this date or not.
18 She is compiling the report. She is making sure the
19 team is checking analyses. She is getting
20 instructions. Generally -- we're not too
21 hierarchical, but generally my meetings are with
22 Mr. Kheyfets, Dr. Colino, Dr. Cheng, occasionally
23 Ms. Yan if it was something on data, those kind of
24 things.

25 JUDGE STRICKLER: Would it be accurate to

1 say that Ms. Yan was wearing two hats, one reporting
2 with regard to you as a testifying expert perhaps
3 through them or to you directly and also as a -- as
4 part of a consulting team dealing with those
5 gentlemen that you spoke with before and not -- and
6 not disclosing that information to you?

7 THE WITNESS: Yes, that is correct, sir.

8 JUDGE STRICKLER: How many people at
9 Edgeworth -- I don't even want to say your team --
10 how many people at Edgeworth were wearing dual hats
11 in this regard while you were -- while Edgeworth was
12 working on this project?

13 THE WITNESS: All right. So at Edgeworth
14 there were about ten people on the team. I think
15 that you could put, at least my understanding is
16 probably five or six of them you could put in that
17 dual role. I think others were only working on sort
18 of isolated assignments with respect to the
19 testifying report, checking footnotes, things like
20 that. That's a rough estimate, sir, but --

21 JUDGE STRICKLER: I understand. You
22 mentioned earlier, and I apologize for not recalling
23 the names, but I think three individuals who were
24 reporting directly to you and some -- and at least
25 one of them was also handling the consulting aspect

1 of this as you have described it.

2 Exactly how many of those three were part
3 of the consulting work, team, if you will, as well
4 as the team that reported to you?

5 THE WITNESS: I think all three probably
6 had a role in different consulting assignments at
7 different points in time.

8 JUDGE STRICKLER: And just for the record
9 and to refresh my memory, what were the names of
10 those folks.

11 THE WITNESS: That was Mr. Kheyfets,
12 Dr. Colino, and Dr. Cheng.

13 JUDGE STRICKLER: And when you say
14 consulting, what is your definition of consulting in
15 this context?

16 THE WITNESS: Okay. So consulting
17 assignments are those that are at request of
18 counsel. So, for example, as I understood -- and,
19 again, I have learned more after the fact, but I
20 understood there were certain settlement discussions
21 going on. There were certain discussions that they
22 were having with respect to questions from counsel
23 about different issues in the case.

24 It looks like there were various
25 presentations made to counsel on different issues

1 they cared about, on even the tutorials like how
2 does econometrics work, those types of things.
3 That's my understanding. Again, that's all based on
4 now that I have looked at the production after it
5 was compelled, now I have looked at that, I have
6 looked at those drives, I have looked at what was
7 turned over, that's the best I can tell you. That's
8 what I have been able to understand after the fact.

9 JUDGE STRICKLER: Thank you, Dr. Johnson.

10 BY MR. MacLEAN:

11 Q. Did you know that your team had
12 performed -- well, up to model 385 by the time you
13 were onboarded?

14 A. Again, I didn't know the numbering. I
15 now looked closely at this. I do know there were a
16 number of models on the preliminary data sets that
17 kept changing. And as I think, you know, maybe
18 we're going to get into some of those details, but
19 some of those are regression models where there is
20 sort of one control where they are trying to
21 understand if the minutes are correct.

22 So I think mechanically if you get to the
23 number, that may well be true. There were
24 definitely regressions run before I was actively
25 involved. That is true.

1 Q. Hundreds of regressions run before you
2 were actively involved, correct?

3 A. From the time that I started in February
4 with the regressions, there were many regressions
5 run on preliminary data sets to diagnose data
6 issues. There were lots of things done before that,
7 that is true.

8 Q. You were onboarded on about February 9th,
9 2022, correct?

10 A. No, I was onboarded in July of 2021. I
11 read the Crawford decision, the Crawford report in
12 2021, in July. I read the Judges' decisions. I
13 read the other expert reports. Then I sent the team
14 off to build the data and replicate Crawford.

15 It is true that in February I began in
16 earnest to actually engage in the econometrics as
17 the data process had been largely concluded.

18 CHIEF JUDGE SHAW: I'm sorry, I have a
19 question and I could go back and scour the record,
20 but we're here now and maybe it could be clarified.

21 You're saying that a lot of work -- well,
22 some work was done and then you were onboarded.
23 That's the turn of phrase that I have heard more
24 than once.

25 Under whose direction was the work

1 conducted before you were onboarded?

2 THE WITNESS: So everything is ultimately
3 under my direction. But what is absolutely true is
4 that that process from where I said we're going to
5 replicate Dr. Crawford's model, I read the decisions
6 in July, that nine-month window where the data is
7 being obtained from the vendor, cleaned, repulled,
8 that is a process that Mr. Kheyfets is running with
9 respect to data. So that by the time it is time for
10 me to engage, I have a data set that they can
11 explain to me exactly what was done and then the
12 regression modeling.

13 So, yes, I started the beginning of the
14 project, I set the direction, but then that data
15 process took a long time. I will say Mr. Kheyfets
16 and I, you know, our offices are next to each other,
17 just right up the hall. It did seem to take a
18 really long time for this data set. It was
19 complicated. It was a long process. It took longer
20 than I hoped.

21 But until the data was largely together,
22 that's when it was time for me, when I was
23 comfortable engaging to the point of actually
24 putting my mark on the regressions in the analysis.

25 CHIEF JUDGE SHAW: But while it was under

1 Mr. Kheyfets' day-to-day control, I don't know what
2 the right word is, but you ultimately set him out to
3 do that, in other words --

4 THE WITNESS: That is correct, right.
5 I'm the principal investigator. I said here is what
6 we need to do.

7 CHIEF JUDGE SHAW: From the very, very
8 start, correct?

9 THE WITNESS: From the start. You
10 actually have my handwritten notes on the Crawford
11 report from July of 21, my first very time when I
12 sat down and said okay, here is the things I am
13 thinking about this.

14 So there's a work in the beginning when I
15 am trying to get my hands around the assignment and
16 the engagement. And then I sent Mr. Kheyfets off.
17 As I said, Mr. Kheyfets and I we talk every day,
18 multiple times a day. I can't tell you about every
19 conversation we had.

20 It could be in passing like, you know,
21 two minutes, oh, yeah, we're still having trouble
22 with the CDC data. I mean, I can't capture all of
23 that, but basically we have a close working
24 relationship. But, yes, I trust Mr. Kheyfets to run
25 the data part of that team.

1 And then I ultimately get to weigh in as
2 they have made these different sort of choices along
3 the way to make sure that the data is consistent
4 with the way I want it treated and the econometrics,
5 then you see the process that I went through in
6 detail this morning, sir.

7 CHIEF JUDGE SHAW: So onboarding I could
8 look at as becoming reengaging, actively engaging?

9 THE WITNESS: I think that's a great way
10 to put it. That is the point in time, you know, I
11 am about six months before my report. So, again,
12 six months before I am going to file my report, I am
13 now at the point where it is time to reengage. The
14 data is largely together, although there were still
15 some issues, the regression model has been
16 replicated. Now I can get into the process of
17 rolling my hands up and saying: Okay, what are we
18 going to do with this model?

19 CHIEF JUDGE SHAW: And I don't mean to be
20 a stickler about this, but by "report," we mean your
21 testimony?

22 THE WITNESS: I mean my direct testimony
23 for July 1st, 2022.

24 CHIEF JUDGE SHAW: Thank you. I mean, it
25 sounds repetitious now, but weeks later what I am

1 reading this transcript or anybody in the future I
2 want it very clear. Thank you.

3 THE WITNESS: I will try to remember,
4 sir, I'm sorry.

5 CHIEF JUDGE SHAW: No, that's quite all
6 right. It is quite all right. Thank you.

7 BY MR. MacLEAN:

8 Q. So I did see your notes written on Dr.
9 Crawford's report, but I did not see a date on them.
10 Did you say that you reviewed that report in 2021?

11 A. Yes, I did.

12 Q. And you're confident that's when you took
13 those notes that appear, handwritten notes that
14 appear on Dr. Crawford's report?

15 A. Yes, because you can look at them and see
16 I am talking about the structure of the engagement
17 in those notes.

18 Q. I'm going to take a look at slide 35 in
19 our deck. Are we there?

20 Okay. Sorry everybody. Just give me a
21 second. There we go. Okay.

22 Slide 35 from Dr. Johnson sent February
23 4th, 2022, 5:44 p.m. to Stephanie Cheng, David
24 Colino, Mike Kheyfets, "I read Crawford today." Can
25 Jascy look for a time on Wednesday?"

1 Do you see that there?

2 A. I do.

3 Q. Okay. Did you read Crawford, the
4 Crawford report on February 4th, 2022?

5 A. I did, but not for the first time.

6 Q. All right. Let's go back to slide 11.

7 All right. By the time you were
8 reengaged, onboarded, whatever word we're using,
9 your team was testing a baseline model, correct?

10 A. That is true.

11 Q. This is not a baseline model that you
12 directed them to test, correct?

13 A. Well, you skipped a slide. The baseline
14 model we started with was the Crawford replication.
15 You have jumped to the next slide where the team and
16 I are having discussion about the issues that have
17 been identified with respect to the model, the
18 choices I'm going to have to make with respect to
19 the regression analysis.

20 Q. Okay. But as of the time that you were,
21 whether we call it onboarded or reengaged in
22 February of 2022, your team was working on a current
23 working model or baseline model, correct?

24 A. That's the nomenclature we used, yes.

25 Q. And that baseline model used a fees-per

1 subscriber as the dependent variable, correct?

2 A. Yes, as I said, one of the issues that
3 right from the beginning we were talking about was
4 this fee-per subscriber measure versus the log
5 royalty measures, the independent variable.

6 Q. So I was correct, correct? Right?

7 A. Yes, sir.

8 Q. Okay. That baseline model was a linear
9 model, correct?

10 A. Which model? I'm sorry.

11 Q. The baseline model that we're talking
12 about that's on the screen right now that your team
13 was testing on February 22nd, 2022?

14 A. The royalties per subscriber was
15 linear-linear, that is true.

16 Q. Which means the dependent variable and
17 the independent variable were -- variables were not
18 log-transformed, correct?

19 A. That is true.

20 Q. This baseline model is not the model that
21 you presented in your written direct testimony,
22 correct?

23 A. That's absolutely true, yes.

24 JUDGE RUWE: I have deliveries of
25 demonstratives for tomorrow. Just a second.

1 JUDGE STRICKLER: Give me a chance as
2 well. My bell rang simultaneously. Excuse me.

3 MR. MacLEAN: This time I can say I don't
4 think that's us.

5 CHIEF JUDGE SHAW: Okay. I was about to
6 ask about this, but I will wait until the Judges
7 return.

8 (Pause in the proceedings.)

9 CHIEF JUDGE SHAW: All right. Well, a
10 lot of things have come together at the same time.
11 I remember yesterday, Ms. Plovnick said she would
12 instruct the messengers not to arrive until 6:00.
13 And it seems that they rang their buzzers exactly at
14 6:00.

15 And I just want to say that they have
16 been, at least from my end, they have been very
17 professional and very prompt. And so that's exactly
18 what I would expect them to do.

19 And that answered my first question,
20 which is that I will be getting a delivery soon
21 because the other two Judges did, and 6:00 o'clock
22 is fine, and then that leads to the next logical
23 question, Mr. MacLean, when do we want to break for
24 the evening?

25 MR. MacLEAN: Your Honor, I am happy to

1 proceed, if that is what everybody would like, but
2 I'm also at a perfectly fine stopping point if that
3 is what everybody would like.

4 CHIEF JUDGE SHAW: Well, I have -- my
5 doorbell hasn't running yet, so I think it will
6 shortly. We will have another break. So this might
7 be a good time to break for the evening.

8 We will do that. We're on the public
9 record. I'm sure that counsel has instructed Dr.
10 Johnson about, you know, not consulting during the
11 evening and so forth.

12 Before we break for the day, is there
13 anything we need to discuss while we're all together
14 from any party?

15 MR. DOVE: Your Honor, just to be clear,
16 the Judges -- I mean, Judge Ruwe sort of gave a
17 couple homework assignments to Dr. Johnson. May he
18 do those?

19 CHIEF JUDGE SHAW: Okay. Well, the usual
20 rule if we were -- let's say we were at lunch -- the
21 usual rule I have, the other Judges have different
22 or if your practice here is you can usually call the
23 factory to find out something to answer the Judge's
24 question, but you're not supposed to engage in
25 consultation with counsel as to how to answer the

1 Judge's question.

2 Now, I think the question Judge Ruwe had,
3 he can maybe specify, he wanted a breakdown on runs,
4 and that is probably something that the witness can
5 do without consulting with counsel unless he needs
6 some paperwork or something. Judge Ruwe, is that
7 it?

8 JUDGE RUWE: It was related to runs but
9 it was how many models.

10 CHIEF JUDGE SHAW: Right.

11 JUDGE RUWE: And at the time, yes,
12 Mr. Johnson suggested that he didn't know, but I
13 indicated I may follow up about that so, yes, I
14 would like that answer.

15 CHIEF JUDGE SHAW: So, yes, and so I
16 would say that that should be his answer. He
17 shouldn't work with counsel on that. But if for
18 whatever reason he doesn't have enough materials, I
19 mean, of course he can request some materials or
20 something like that.

21 Is that what you envisioned, Judge Ruwe?

22 JUDGE RUWE: Yes. Thank you.

23 CHIEF JUDGE SHAW: Okay. Does that
24 answer your question, Mr. Dove?

25 MR. DOVE: It does, Judge Shaw.

1 CHIEF JUDGE SHAW: Okay, good.

2 Anything else before my doorbell rings?

3 Okay.

4 Well, thank you all very much. I will
5 see you tomorrow morning.

6 (Whereupon, at 6:08 p.m., the hearing
7 recessed, to reconvene at 10:00 a.m. on Wednesday,
8 March 22, 2023.)

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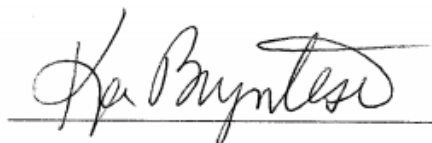
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6	AFTERNOON SESSION: 475				
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8	CONFIDENTIAL RESTRICTED SESSIONS				
9	413 - 429				
10	585 - 588				
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12	E X H I B I T S				
13	EXHIBIT NOS:	MARKED/RECEIVED	REJECTED		
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CERTIFICATE

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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.

3/21/23

A handwritten signature in cursive script, appearing to read "K. Brynteson", is written over a horizontal line.

Date Karen Brynteson, RPR, RMR, CRR, FAPR

Signature of the Court Reporter

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