

## In the Supreme Court of Ohio

Crutchfield, Inc.,	:	
	:	Case No. 2015-0386
	:	
Appellant,	:	
	:	Appeal from the Ohio
v.	:	Board of Tax Appeals
	:	
Joseph W. Testa,	:	
Tax Commissioner of Ohio,	:	
	:	BTA Case Nos. 2012-926,
Appellee.	:	2012-3068, 2013-2021

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### JOINT MOTION TO SUPPLEMENT THE RECORD ON APPEAL – EXHIBIT B

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BEFORE THE OHIO BOARD OF  
TAX APPEALS  
STATE OF OHIO



CRUTCHFIELD, INC.,

CASE NOS.: 2012-A-926  
2012-A-3068  
2012-A-2021

Appellant,

V.

JOSEPH W. TESTA,  
TAX COMMISSIONER OF OHIO,

Appellee.

Oral deposition of  
ASHKAN SOLTANI, taken at the law  
offices of Hanglely Aronchick Segal  
Pudlin & Schiller, One Logan Square,  
27th Floor, Philadelphia,  
Pennsylvania, on Thursday, October  
16, 2014, commencing at approximately  
2:33 p.m., before Joanne Rose, a  
Registered Professional Reporter,  
Certified Realtime Reporter and  
Notary Public, pursuant to notice.

## ORAL DEPOSITION OF ASHKAN SOLTANI, 10/16/2014

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ORAL DEPOSITION OF ASHKAN SOLTANI, 10/16/2014

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## ORAL DEPOSITION OF ASHKAN SOLTANI, 10/16/2014

1 MR. FAUSEY: Tax

2 Commissioner calls Ashkan Soltani.

3 ASHKAN SOLTANI, having been  
4 duly sworn, was examined and  
5 testified as follows:

6 DIRECT EXAMINATION

7 BY MR. FAUSEY:

8 Q. Ashkan, can you state and  
9 spell your name for the record,  
10 please.

11 A. A-s-h-k-a-n, Soltani,  
12 S-o-l-t-a-n-i.

13 Q. And do you have in front of  
14 you a copy of Tax Commissioner's  
15 Exhibit 38?

16 A. I do.

17 Q. Do you recognize that?

18 A. I do.

19 Q. What is that?

20 A. That's my expert report.

21 Q. And just briefly turning to  
22 the end of the report, is that your  
23 resume attached --

24 A. That is.

1 Q. -- as the first exhibit?

2 A. That is.

3 Q. And is that current?

4 A. That is current.

5 Q. Okay. Well, just very

6 briefly walk us through your

7 education.

8 A. So undergrad at UC San

9 Diego, focus on cognitive science and

10 computer science. And then a

11 Master's at Berkeley in Information

12 Science.

13 Q. Okay. And what was your

14 Master's thesis?

15 A. It was a look at the state

16 of -- it was called Know Privacy. It

17 was a look at the state of online

18 data collection and information

19 sharing.

20 Q. And that's Know, K-n-o-w,

21 Privacy?

22 A. That's correct.

23 Q. And since graduation, what

24 have you done?

1           A.    A lot.  I've worked at the  
2 Federal Trade Commissioner as a  
3 technologist; an investigative  
4 reporter for The Wall Street Journal  
5 and the Washington Post; an expert on  
6 a number of AG matters like this one;  
7 and founded a company called  
8 MobileScope, which is a privacy -- an  
9 online privacy company, mobile  
10 privacy.

11           Q.    And has your journalistic  
12 work won any awards?

13           A.    Yeah.  We won a Pulitzer  
14 this year, and I've been a Pulitzer  
15 finalist in 2012, and a Pulitzer  
16 Prize in 2009 for the work I did at  
17 The New York Times as well.

18           Q.    You went over those rather  
19 quickly.

20                    Tell us, what was the most  
21 recent Pulitzer?

22           A.    We won a 2014 Pulitzer in  
23 -- for public service for the work we  
24 did on looking at the government's

1 data collection practices, the NSA's  
2 data collection practices.

3 Q. And who is "we"?

4 A. Me and my co-author, Barton  
5 Gellman, and a couple other reporters  
6 at The Washington Post. It's awarded  
7 to the paper, but it's for the  
8 stories that we wrote.

9 MR. FAUSEY: All right.

10 The parties have agreed to stipulate  
11 to certain qualifications that we've  
12 reduced to writing, but not signed.

13 Is that your understanding,  
14 Mr. Bertoni?

15 MR. BERTONI: Yes, it is.

16 MR. FAUSEY: And so with  
17 that understanding in place, we'll  
18 proceed straight into the substance  
19 of your testimony today.

20 BY MR. FAUSEY:

21 Q. So, turning back to the  
22 front page of Tax Commissioner's  
23 Exhibit 38.

24 What were you asked to

1 address in this report?

2       A.    I was -- I was instructed  
3 to look at Crutchfield and identify  
4 the tools and technologies they used  
5 to interact with customers in Ohio  
6 and elsewhere.

7                I list -- I specified four  
8 specific items.  But the tools  
9 utilized by Internet sellers  
10 generally, and Crutchfield  
11 particularly, for establishing and  
12 growing the consumer market in the  
13 digital age, how these tools function  
14 and how they're used by Crutchfield  
15 to interact with consumers in Ohio  
16 across various digital platforms,  
17 including Internet websites, e-mail  
18 communication, and mobile  
19 applications, and whether for the  
20 2005 through 2012 audit period  
21 Crutchfield extensively utilized such  
22 data tracking and technological tools  
23 on an interactive basis with Ohio  
24 customers.

1 Q. And just to be clear about  
2 the audit period, and it says it on  
3 the first page of your report, did  
4 you examine Crutchfield's activities  
5 from the period of July 1st, 2005 to  
6 June 30th, 2012?

7 A. That is correct.

8 Q. Okay. As we proceed today,  
9 when I ask you questions, I'd like  
10 you to assume that I'm talking about  
11 that period unless I'm specifying  
12 something else. Is that okay?

13 A. Absolutely.

14 Q. Okay. All right. So in  
15 preparing this report, were you  
16 provided with copies of the discovery  
17 exchanged by the parties in this  
18 case?

19 A. I was.

20 Q. And that comprises hundreds  
21 of pages of documents?

22 A. That's right.

23 Q. And were you also given  
24 transcripts of depositions?

1 A. I was.

2 Q. And were those the  
3 transcripts of the deposition of  
4 Jason McCartney and Richard  
5 Stavitski?

6 A. That's right. There were  
7 three, but McCartney's was two parts,  
8 I believe.

9 Q. And you reviewed those in  
10 preparation of your report?

11 A. I did.

12 Q. Outside of the parties'  
13 discovery, what else did you review  
14 in preparation of your report?

15 A. I ran tests and evaluated  
16 the Crutchfield website currently, as  
17 well as during the audit period,  
18 using a resource called the Internet  
19 Archive, which archives websites at  
20 various points in time.

21 Q. And in your work, have you  
22 found that the Internet Archive is  
23 generally a reliable source for  
24 information?

1           A.    I believe it to be a  
2 reliable source for capturing what a  
3 website was doing at a particular  
4 time.

5           Q.    And do others in your field  
6 rely on the Internet Archive as well?

7           A.    It's heavily used by many  
8 in my field.

9           Q.    All right.  So let's just  
10 kind of dive into your report here.

11                    If I can ask you to turn to  
12 Page 2.

13           A.    Uh-huh.

14           Q.    You start with a brief  
15 discussion of how the web works.  And  
16 you've included a diagram there on  
17 Page 2, Figure 1.

18                    It might be helpful for us  
19 to sort of talk about this using that  
20 diagram as a starting point.  So what  
21 are you showing us here?

22           A.    The figure on Page 2  
23 describes a typical web interaction,  
24 whereby, a user, by means of a web

1 browser, connects to a website or web  
2 server, and makes a request for some  
3 content, typically, a web page, and  
4 is issued a response, which is the  
5 contents of that web page, plus  
6 additional instructions to the  
7 browser, including cookies and  
8 instructions to get other websites or  
9 pages.

10 Q. And we're going to talk in  
11 some detail about what that  
12 communication is like.

13 But you've started by  
14 talking about the user's computer  
15 sending its IP address to the website  
16 for response.

17 A. That's right.

18 Q. So what's an IP address?

19 A. An IP address is the  
20 Internet protocol address. This is,  
21 essentially, how a user's computer  
22 identifies it to -- identifies itself  
23 to a website or a service initially,  
24 such that the website or service

1 knows where to deliver the response  
2 to.

3           So it's kind of like, you  
4 know, kind of a destination address  
5 for those responses.

6           Q.   And we heard testimony  
7 today that an IP address is not  
8 always for one user at one computer.

9           Can you explain that to us  
10 a little bit.

11          A.   That's right.  So an IP  
12 address is simply an address on the  
13 Internet.  It can be for an  
14 individual.

15               For example, typically,  
16 when you're on a mobile phone, you'll  
17 have a unique identifier for you,  
18 only for your mobile phone, whereas,  
19 at an office building, everyone at  
20 that office building might share one  
21 IP address kind of behind what's  
22 known as a firewall.

23               So to the web server  
24 everyone might appear to be coming

1 from the same source address.

2 Q. And what's the effect of  
3 using an Internet router on IP  
4 addresses?

5 A. Can you explain what you  
6 mean?

7 Q. Is there any effect on a  
8 user's -- will a user send a  
9 different IP address if they're using  
10 a router as opposed to not using a  
11 router?

12 A. Can you elaborate a little  
13 bit more?

14 Q. Let's move on. There are  
15 some questions about that on direct  
16 and I'm not sure we're a hundred  
17 percent clear on it, but we'll just  
18 move on.

19 A. Just like a router is --  
20 there's multiple routers between you  
21 and a web server.

22 Q. Yeah.

23 A. You might have a router at  
24 your home and then you'll have your

1 ISP. And every link down the line  
2 will have a router that essentially  
3 routes your communication.

4           It will be as if I wanted  
5 to pass a message across the table, I  
6 would hand it to each individual and  
7 each individual would route it to the  
8 next closest person.

9           Q. Okay. On Page 3 of your  
10 report you have a table there, a  
11 chart there, that relates to IP  
12 addresses and demonstrates that they  
13 can accurately show the location of a  
14 user.

15           Can you explain to us what  
16 we're looking at there.

17           A. So an IP address,  
18 typically, can be used to identify an  
19 approximate location, usually down to  
20 about a city block, of that user's --  
21 that user's location in the real  
22 world, or that user's computer, that  
23 computer's location.

24           It can be used to identify

1 the location of the user and their  
2 computer. It can be pretty accurate  
3 or it can be for -- you know, for a  
4 company like that who has, say,  
5 multiple offices and they use VPNs,  
6 it can be not accurate.

7 Q. And what exactly are we  
8 looking at? What is the image that  
9 you've captured there?

10 A. So that dot on the map kind  
11 of -- it indicates my physical  
12 location based on a publicly  
13 available database that maps IP  
14 addresses to locations.

15 And that's almost exactly  
16 the location of my office where I was  
17 running these tests.

18 Q. Professor Goldman testified  
19 today that IP addresses can be  
20 assigned in blocks to a particular  
21 person or entity. And that then, as  
22 they're distributed, that may affect  
23 whether or not the IP address is an  
24 accurate reflection of geography.

1 Do you agree with that?

2 A. The allocation of IP  
3 addresses has very little to do with  
4 the lookup, the geographic lookup  
5 features of that IP address.

6 Typically, the databases  
7 that provide geographic lookup of IP  
8 addresses rely on other factors, such  
9 as where the -- where other sensors  
10 have reported that IP address to be.

11 For example, one of the  
12 databases, for example, could be  
13 Google location services, right. And  
14 so my phone might know my current IP  
15 address, right, and my current  
16 location at the same time.

17 And, thereby, helps  
18 Google -- my current location based  
19 on a GPS antenna that's on the phone,  
20 it will transmit that location to  
21 Google and identify the location of  
22 the phone.

23 Now, my phone moves around  
24 quite a bit, but for things like

1 permanent wi-fi routers and permanent  
2 kind of hot spots, it becomes much  
3 more accurate.

4           So there's a number of ways  
5 where the IP address databases are  
6 built up and it doesn't necessarily  
7 map exactly with the INA, I-N-A,  
8 assignment process.

9           Q.   And, in your experience,  
10 does an IP -- so an IP address isn't  
11 100 percent foolproof, a guarantee  
12 that that's the correct address,  
13 right?

14           A.   It's not, but it's -- our  
15 IP address is pretty accurate for at  
16 the city and state level, at the very  
17 least, and usually down to the block  
18 level.

19           There are cases where it  
20 will be wrong, but those cases are  
21 principled on things like if the user  
22 is using software or VPN services to  
23 mask their IP address.

24           Q.   So, in your experience, is

1 the geographical address associated  
2 with an IP address typically correct?

3 A. It's -- definitely at the  
4 city and state level, it's typically  
5 correct. You know, I would give it,  
6 you know, a high -- a high  
7 percentage, that's correct.

8 Q. Let's turn to Page 4 of  
9 your report there. And I notice  
10 you've reproduced an image there.

11 What are you trying to  
12 illustrate with that image?

13 A. This is an example. So  
14 oftentimes IP addresses are good  
15 enough for the purposes of  
16 determining what content to show to  
17 a user, what language to show to a  
18 user. This is what websites rely on.

19 They're also used to  
20 measure things like traffic by state  
21 or traffic by -- web traffic by state  
22 or activity by a state or country  
23 from inside analytics software.

24 So this is a screenshot

1 from, actually, one of the  
2 productions indicating a feature of  
3 Monetate, which allows them to  
4 understand where a visitor is right  
5 now.

6           This graphic is actually  
7 from a Q3 2012. So the actual  
8 numbers are outside of the period,  
9 but the feature and the functionality  
10 I don't believe would have changed  
11 too much during the period as well.

12       Q. I'll ask you to sort of put  
13 a thumb or something on the page  
14 you're on because we'll come back to  
15 it. And turn to Exhibit 36. It  
16 should be backwards in the binder.

17           Try 38. No. 37. That's  
18 it. 37.

19       A. All right. Good.

20       Q. So just take a look at the  
21 front page of that. Is this the  
22 document that you drew that figure  
23 from?

24       A. Yes. This is the EQ3

1 e-commerce quarterly publication from  
2 Monetate.

3 Q. And what page does this  
4 graphic appear on in that?

5 A. I think it's the one from  
6 Page 6 of the publication or the  
7 number 002091.

8 Q. Yeah. The Bates stamp on  
9 it is 002091. Okay.

10 So that document was part  
11 of the material that I provided you  
12 that was produced by Crutchfield in  
13 discovery --

14 A. Uh-huh.

15 Q. -- and that you reviewed in  
16 producing this report?

17 A. That is correct.

18 Q. All right. So moving off  
19 of the IP address.

20 What other information is  
21 communicated by your browser during  
22 the conversation with the web server?

23 A. So your browser, when it  
24 talks to a web server sends along a

1 number of other attributes, which is  
2 its IP address, the language that it  
3 supports, the version of browser that  
4 it uses, and along with the page that  
5 you would like to visit, and the  
6 cookies, any cookies that might have  
7 previously been set by that company  
8 or that website.

9 Q. And what is that  
10 information used for?

11 A. That information is used  
12 for a variety of reasons. So things  
13 like IP address and language can be  
14 used to determine either the  
15 geographic capabilities or the  
16 language capabilities. So whether to  
17 show a page in English or Spanish,  
18 for example.

19 Cookies can be used to  
20 personalize a page. So, you know,  
21 for example, say, you know, Hi,  
22 Danny, or say, Welcome Back, and --  
23 or store items in your shopping cart  
24 that you might have not previously

1 purchased.

2           They can also be used to  
3 identify you individually, you or  
4 your computer individually, for the  
5 purpose of clickstream analysis,  
6 which I'm sure we'll get into.

7           And then the browser  
8 version often tells the website  
9 whether it's a mobile device or what  
10 capabilities the browser supports.

11           I actually put in -- on  
12 Page 12, there's a graphic, Figure  
13 11, on my -- on my report that has a  
14 number of these attributes that the  
15 -- their kind of data analytics suite  
16 supports.

17           And it's most of the ones  
18 that I listed. So this is kind of a  
19 lot of the analytics based on those  
20 core elements of information.

21           Q. Well, let's -- before we  
22 get there.

23           A. Okay.

24           Q. We'll stick a pin in that.

1           So this is in the web  
2 context. The user's browser contacts  
3 the server and automatically, as you  
4 said, shares some information.

5           A. Uh-huh.

6           Q. What happens next?

7           A. The web server -- the  
8 user's browser initiates a request  
9 to the web server and shares the  
10 information I described earlier to  
11 the web server.

12           The web server then  
13 subsequently generates a response  
14 based on those parameters back to the  
15 web browser. And in that response,  
16 it sends along additional  
17 instructions for what images to show  
18 or what additional elements for the  
19 web server -- for the web user to  
20 request.

21           Q. Okay. And when you say  
22 "instructions," what do you mean by  
23 that?

24           A. The web browser sends HTML

1 and JavaScript, usually HTML and  
2 JavaScript code to the web browser,  
3 that it then executes, runs in the  
4 web browser's memory and in the  
5 computer's operating system, and  
6 that's what essentially renders the  
7 page. That's what draws the page for  
8 the user.

9           So an example would be, I  
10 would go to -- my web browser would  
11 make a request -- it's kind of like a  
12 conversation. My web browser would  
13 make a request of Crutchfield's web  
14 server and my web browser would say,  
15 you know, what is on the home page?

16           And the Crutchfield web  
17 server would respond and say, on the  
18 home page today is the Crutchfield  
19 logo, a promotion for and an image  
20 for a particular car stereo, and some  
21 language describing the car stereo  
22 and the price, along with some --  
23 whatever other items might be on that  
24 page.

1 Q. Okay. And so the -- so you  
2 said there's HTML -- typically, HTML  
3 code and Java code?

4 A. JavaScript.

5 Q. JavaScript.

6 Are there also images --

7 A. Yes.

8 Q. -- sent along, too?

9 A. So usually there's images,  
10 there's fonts, there's other  
11 instructions that are, essentially,  
12 part of the HTML class of items that  
13 the browser interprets and renders on  
14 the page.

15 Q. And that HTML code, is that  
16 -- would you call that software?

17 A. Some do, yeah. Definitely.

18 Q. Okay. Would you call it  
19 software?

20 A. I call it -- yeah, I call  
21 it an interpretive -- essentially,  
22 interpretive code for the browser.  
23 JavaScript -- actually, yes, I would  
24 call it software.

1 Q. Now, what about the  
2 JavaScript?

3 A. JavaScript definitely is  
4 software. HTML, you know, I think --  
5 HTML is technically a markup  
6 language, right.

7 It's an instruction set to  
8 the browser, whereas, JavaScript is a  
9 full programming language. But both  
10 in this case constitute software.

11 Q. When you say "software,"  
12 what do you mean?

13 A. Software is, essentially,  
14 instructions to a computer's  
15 operating system, in this case, the  
16 computer's browser, that tell it to  
17 do certain things, like render pages  
18 or move items or...

19 Q. Let's turn to Page 5 of  
20 your report while we're talking about  
21 assembling the website.

22 So you've included Figure  
23 4, Crutchfield.com. Now, is that a  
24 recent grab of that page?

1 A. On Figure 4?

2 Q. Yes.

3 A. Yes. So that -- that grab  
4 was, I believe, from April 2014.

5 Q. And this is just to  
6 demonstrate sort of the principles  
7 that you're talking about here?

8 A. That's right. That's to  
9 demonstrate the interaction that you  
10 have with the website.

11 I don't expect it to have  
12 changed much in the past ten or so  
13 years, except with some additional  
14 support for newer features, but the  
15 basic principles will be the same.

16 Q. Okay. And then Figure 5,  
17 it says, an HTTP request from  
18 Crutchfield.com.

19 A. That's right.

20 Q. And is that the information  
21 that your browser sends to  
22 Crutchfield.com?

23 A. With the exception of IP  
24 address, which is assumed here, it's

1 not visible here, that is the  
2 information that your browser is  
3 sending to Crutchfield.

4 Q. Okay. And this has a date  
5 on it of 2014, April 8.

6 A. Uh-huh.

7 Q. Would it have been the same  
8 set of data transmitted during this  
9 period?

10 A. Yes. It would be  
11 presumably an earlier version of the  
12 operating system, but the same set of  
13 data, yes.

14 Q. And then Figure 6 is an  
15 HTTP response from Crutchfield.com  
16 server. Now, is that a full  
17 response?

18 A. That's just a -- that's a  
19 snippet of the response. The full  
20 response would be quite large. In  
21 fact, it's 20 kilobytes based on --  
22 based on that capture. That's just a  
23 small excerpt.

24 And I use it to illustrate

1 the fact that, in part of the  
2 response, Crutchfield's server  
3 instructs my browser to then fetch an  
4 image, which is the image located at  
5 the path that I've highlighted, which  
6 is actually located on Akamai's  
7 servers.

8 Q. And then Figure 7 is the  
9 actual image that your browser serves  
10 up as a response -- as a consequence  
11 of those instructions?

12 A. That's right. That's what  
13 the user would see when the browser  
14 fetches the image located at that  
15 URL.

16 Q. Okay. And I notice you  
17 have a footnote here that said, "In  
18 this case the website hosting the  
19 image is operated by the content  
20 service provider, Akamai  
21 Technologies."

22 A. Uh-huh.

23 Q. We've talked about content  
24 distribution networks. And I believe

1 Akamai was identified by Professor  
2 Goldman as a content distribution  
3 network.

4           Is that the same as a  
5 content service provider?

6           A. I'm using it  
7 interchangeably. Essentially, the  
8 term "service provider" or almost  
9 "hosting provider" is -- essentially,  
10 refers to someone that hosts some of  
11 these assets, whether they're images  
12 or HTML.

13           Akamai is a distributed --  
14 content delivery network or content  
15 distribution network that hosts  
16 people's images, hosts images on  
17 behalf of their clients in various  
18 locations across the world in order  
19 to expedite the service.

20           Q. And while we're here, let's  
21 talk about content distribution  
22 networks for just a minute.

23           A. Uh-huh.

24           Q. So I think you gave me the

1 definition again briefly there, but  
2 let's go through that in a little  
3 more detail.

4           What actually does Akamai  
5 do as a content distribution network?

6       A.    They host --

7           MR. BERTONI:  Objection.

8           For Crutchfield or

9 generally?

10          MR. FAUSEY:  General.

11          THE WITNESS:  Generally,  
12 Akamai and other CDNs host images on  
13 behalf of their clients, typically,  
14 in order to improve the performance  
15 of the clients' websites.

16               And they do this by  
17 geographically locating their web  
18 servers closer to the user that is  
19 requesting the page, right.

20 BY MR. FAUSEY:

21       Q.    So, as part of the  
22 intersection between my browser and  
23 Crutchfield's servers, my browser may  
24 be directed to Akamai's servers to

1 retrieve part of the website?

2 A. That's right. Your browser  
3 will be -- as part of the  
4 interaction, your browser will be  
5 redirected to Akamai's servers,  
6 presumably Akamai's servers that are  
7 closest to your --

8 MR. BERTONI: I'm going to  
9 object on foundation.

10 This witness has not  
11 testified as to the source of the  
12 information regarding Akamai's  
13 operations. As I understand it, the  
14 decisions on hosting and location  
15 thereof are proprietary. And so I'd  
16 like a foundation.

17 THE WITNESS: Sure. I can  
18 get it to you.

19 BY MR. FAUSEY:

20 Q. All right. Let me ask the  
21 question.

22 In your work, have you had  
23 experience to research and learn  
24 about content distribution networks?

1           A.    I have.  I've actually  
2 built infrastructure to do content  
3 delivery, you know, in kind of the  
4 earlier part of my career.

5                    But for the specifics of  
6 this report, I, in fact, tested to  
7 see, at least currently, what  
8 Akamai's services were provided -- or  
9 what services Akamai was providing  
10 for Crutchfield and where those  
11 services were located.

12                   And so I did that by  
13 connecting to the Crutchfield site  
14 via IP addresses in Ohio, and then  
15 looking to see where the physical  
16 location of the Akamai servers that I  
17 was instructed to fetch assets from,  
18 where they were.

19                   MR. BERTONI:  I would like  
20 to voir dire the witness on his  
21 knowledge of the Akamai system.

22                   MR. FAUSEY:  Okay.

23                   CROSS-EXAMINATION VOIR DIRE  
24 BY MR. BERTONI:

1 Q. Do you know whether  
2 Akamai's servers that are used in the  
3 transmission of information all cache  
4 information or some use simply as  
5 effectively throughfares for data to  
6 be transmitted?

7 A. That is caching.

8 Q. But are there some that  
9 don't have information stored upon  
10 them?

11 A. If they're acting as a  
12 throughfare, such as, say -- I think  
13 the term you're about to go for is a  
14 reverse proxy.

15 Q. Well, what I'm told is that  
16 they don't rely on caching, but map  
17 through intermediate nodes.

18 Do you know what that  
19 means?

20 A. So they -- so, at the end  
21 of the day, the principles are, you  
22 have a web server, right. Your  
23 computer could be a web server,  
24 right. In this -- for this purpose

1 of application. And the court  
2 reporter's computer is also a web  
3 server, right.

4           You're Crutchfield in this  
5 case. My browser makes a request  
6 from your computer and fetches the  
7 asset itself, the image from your  
8 computer and copies it over. That's  
9 a direct interaction.

10           In this case, she might be  
11 Akamai. So, instead, you might say,  
12 you know what, she's closer to you,  
13 fetch the image through her, right.

14           And so my computer will go  
15 through her computer, who will then  
16 request the image from you, copy it  
17 to her computer, even if it's  
18 temporarily in memory, and copy it to  
19 me.

20           So, at some point in time,  
21 the image exists either in memory or  
22 typically cached on that computer in  
23 order to not make repeated calls to  
24 your -- to your server.

1 Q. Are you aware of whether or  
2 not Akamai provides services that do  
3 not involve the temporary whether in  
4 memory or otherwise of information on  
5 an intermediate node?

6 A. I don't believe that's  
7 possible from a laws of physics  
8 perspective, right. So, at any point  
9 where you're -- if you're proxying or  
10 connecting through any intermediary,  
11 the intermediary has to make copies  
12 of those bits in order to transfer  
13 them to you.

14 Q. Are you familiar with the  
15 internal algorithms that Akamai uses  
16 to determine how to route information  
17 from one server to another on any  
18 given moment?

19 A. The internal algorithms  
20 won't matter with regards to the --  
21 whether the set of bits, in this  
22 case, the image that I displayed,  
23 whether that would need to pass  
24 through the host, right.

1           So that image as it  
2 transfers through the web would need  
3 to be copied at each intermediary  
4 point.

5           Q.    Do you know whether Akamai  
6 had servers in Ohio during the audit  
7 period?

8           A.    I don't know at the --  
9 during the audit period.  The tests  
10 that I ran were in April.

11          Q.    Of this year?

12          A.    Of 2014.  And, at that  
13 point, I observed that the images  
14 were coming from servers located in  
15 Columbus, Ohio.

16          Q.    And is it possible to go  
17 back in time to determine whether  
18 information that was used in the  
19 Crutchfield website during the audit  
20 period went through a specific server  
21 or not?

22          A.    Akamai would definitely  
23 have those logs.  So if the tax board  
24 wanted to make those requests, those

1 -- that information should be  
2 available. They have the -- they  
3 have that information.

4 Q. You don't have that  
5 information?

6 A. I don't have a way to go  
7 back in time through Akamai's logs.  
8 What we can do -- yeah. It would be  
9 part of Akamai's kind of their own  
10 internal documentation.

11 Q. And you don't have that  
12 information?

13 A. I don't. But I don't have  
14 any reason to believe that they would  
15 not have assets of major states.

16 Q. You don't know whether they  
17 had assets in Ohio during that time  
18 period, correct?

19 A. During the time period, I  
20 do not know if Akamai had assets in  
21 Ohio. I would presume.

22 Q. Yeah. I'm not asking you  
23 to presume. I'm asking whether you  
24 know or not.

1           A.    I don't know if they had it  
2 or not.

3           Q.    Okay.  And what is off-net  
4 caching?

5           A.    Off-net caching is a way to  
6 essentially make the assets available  
7 to other -- kind of other sub-nets.  
8 Essentially, you might find that you  
9 have hosting that is, not air gapped,  
10 but not connected directly to the  
11 major -- to the primary network.

12          Q.    In the way that Akamai  
13 works, to the best of your  
14 understanding, does the request for  
15 information necessarily go through  
16 the same servers each and every time  
17 it's requested when a customer is  
18 going through a web page?

19          A.    No.  They're load balanced,  
20 right.  It will often go -- the  
21 general principle is, it will route  
22 to the closest and least burdened web  
23 server, right.  So the server that's  
24 closest to the user that's least

1 burdened.

2 Q. And that could be outside  
3 of the state where the individual's  
4 web server resides, correct?

5 A. It could be.

6 Q. And, in fact, there are a  
7 number of factors that determine how  
8 Akamai will route information to the  
9 ultimate user, correct?

10 A. Under the principle that,  
11 again, it's usually the -- the  
12 guiding principle is the fastest  
13 throughput to the user.

14 Q. And so what Akamai is  
15 selling is performance, rather than  
16 the use of specific servers in  
17 specific locations?

18 A. They sell hosting.  
19 Performant hosting is probably the  
20 best way to describe it.

21 Q. And it is sold on the basis  
22 of achieving certain speed --

23 A. Or capacity.

24 Q. -- or capacity?

1           And do you know whether  
2 Akamai keeps information about the  
3 locations of its servers private?

4           A.    Private is a funny -- in  
5 the sense that do they publicize  
6 their data centers?

7           Q.    Correct.

8           A.    I don't know that they do.  
9 Although I don't think it's very hard  
10 to ascertain. I mean, I could in a  
11 weekend map out all of their data  
12 centers.

13          Q.    Would it surprise you that  
14 Akamai refuses to provide the  
15 identity and location of its servers  
16 to its customers?

17          A.    I -- I would imagine -- it  
18 wouldn't surprise me, although -- no,  
19 it wouldn't surprise me.

20          Q.    And in connection with  
21 Akamai, does the routing of  
22 information through Akamai's system  
23 depend on outages, changes in web  
24 traffic, demands, time of day?

1 Does that all factor in to  
2 where the information may be routed  
3 and what server may be called upon?

4 A. Yeah. Those -- those --  
5 again, under the guise of the -- kind  
6 of most performant option for the  
7 user, right.

8 MR. BERTONI: Okay. I'm  
9 going to move to strike this  
10 witness's testimony.

11 He has no knowledge of what  
12 happened during the audit period with  
13 regard to Akamai. He doesn't have  
14 any knowledge of servers located in  
15 the State of Ohio related to Akamai.

16 His expert witness report  
17 suggests he might have that  
18 information. It's quite clear that  
19 he does not.

20 And so we'll preserve this  
21 for trial, but...

22 MR. FAUSEY: Sure. And  
23 I'll briefly answer you to say that  
24 he actually -- in here he does

1 provide instances where Akamai  
2 appears in the source code during the  
3 time period at issue here.

4 MR. BERTONI: But no  
5 indication as to --

6 MR. FAUSEY: We have  
7 contracts with Akamai in the record  
8 in this case. We have your expert  
9 witness who has testified that they  
10 had contracts with Akamai as a  
11 content distribution network.

12 So the fact that they  
13 employed Akamai as a content  
14 distribution network is established  
15 in the record. So I don't know what  
16 striking his testimony on that point  
17 is going to do.

18 MR. BERTONI: The point of  
19 it is that this report and its  
20 analysis of Akamai hinges on the  
21 location in the State of Ohio of  
22 servers.

23 If you look at the very  
24 last -- second-to-last page, "Given

1 their use of Akamai, some of  
2 Crutchfield's virtual assets were  
3 physically located in Ohio."

4           That's based upon  
5 speculation concerning the location  
6 of Akamai servers in Ohio, if you  
7 track it back through the report.  
8 And this witness has testified that  
9 he has no knowledge of Akamai's  
10 servers in Ohio during that time  
11 period.

12           MR. FAUSEY: I understand  
13 that's your argument, that it's  
14 speculation. However, an expert  
15 witness is entitled to review the  
16 evidence available to him and form an  
17 opinion on that basis. In this  
18 case --

19           MR. BERTONI: I will leave  
20 it at that.

21           MR. FAUSEY: In this case,  
22 he's found that shortly after the  
23 audit period, they're using Ohio  
24 servers. He cited to Akamai's

1 contract with over 300 Ohio  
2 universities during the audit  
3 period -- or prior to the audit  
4 period in this case.

5           And the fact that their  
6 assets are in Crutchfield's source  
7 code, the fact that they have a  
8 contract in place with them, the fact  
9 that your expert has testified that  
10 they use them, he, I think, very  
11 reasonably has drawn the inference  
12 that they were using -- and the fact  
13 that they're in the business of  
14 delivering content quickly, I think  
15 he's drawn a very reasonable  
16 inference.

17           MR. BERTONI: That will be  
18 for someone else to judge.

19 BY MR. BERTONI:

20           Q. But you mentioned the  
21 university servers. Do you know  
22 whether Akamai has contracts with  
23 universities to provide servers on  
24 their campuses limited to providing

1 faster service for those university  
2 communities?

3 A. Explain your question  
4 again.

5 Q. Does Akamai have a segment  
6 of its business where it will engage  
7 universities as its customers and  
8 provide them what are called edge  
9 servers that allow for the speedy  
10 transmission of Internet information  
11 to the university community?

12 A. So, in marketing speak,  
13 that's essentially the same as a  
14 proxy server. An edge server with  
15 cache content, in this case, on  
16 behalf of students in Ohio, for  
17 example, right.

18 So, if there are edge  
19 servers at the university in Ohio,  
20 the students in that -- in that  
21 campus that are accessing the  
22 Internet through those servers will  
23 get a speedier experience because  
24 Akamai is caching the content on

1 behalf of their clients or whoever.

2 Q. And the university servers  
3 are there because the university has  
4 separately done business with Akamai  
5 and asked for that service for them  
6 to speed up the service and not for  
7 other Ohio users, correct?

8 A. That might be the case. I  
9 don't know those contracts  
10 specifically. The net result,  
11 though, would still be that those  
12 images and assets would then be  
13 cached on those servers, right.

14 Q. Understood.

15 MR. BERTONI: Okay. My  
16 objection is on the record.

17 MR. FAUSEY: Thanks, David.

18 I'll continue.

19 DIRECT EXAMINATION (continued)

20 BY MR. FAUSEY:

21 Q. Okay. So moving off of  
22 content distribution networks,  
23 because I think we've covered it  
24 pretty exhaustively at this point.

1           On Page 7 of your report,  
2 this appears to be another snippet of  
3 HTML code from Crutchfield's web  
4 server.

5           Is that correct?

6           A.   Page 7 is the -- this is  
7 the -- essentially, this is a capture  
8 of the subsequent instructions that  
9 my browser would make upon the first  
10 instruction.

11           So I get the request -- I  
12 get the response back from  
13 Crutchfield and the response includes  
14 additional instructions to grab all  
15 of these resources from various  
16 services, like Invodo and Akamai and  
17 -- and Crutchfield themselves.

18           Q.   Okay. And I apologize. I  
19 had that backwards.

20           So this is showing activity  
21 of your browser to retrieve assets on  
22 the instructions from the web server?

23           A.   That's correct.

24           Q.   And, again, this is

1 demonstrative from a later period?

2 A. From April 2014.

3 Q. Okay. And so the user has  
4 asked for the website, the server has  
5 delivered the instructions to create  
6 the website. And this picture  
7 demonstrates, then, the browser  
8 carrying out those instructions?

9 A. That is correct.

10 Q. And where are those  
11 instructions carried out?

12 A. In the browser's -- on the  
13 -- on the user's computer.  
14 Essentially, the CPU and the memory  
15 of the user's computer runs the  
16 instructions that are given to it,  
17 given to the web browser, and then  
18 fetches the subsequent images.

19 Q. So the processing that  
20 takes place to put that website  
21 together occurs in Ohio if the user  
22 is in Ohio?

23 A. That is correct.

24 Q. Well, let's move on to

1 this.

2 All right. When this set  
3 of instructions is sent from the  
4 server, so HTML code, JavaScript and  
5 images, where are those -- where are  
6 those set of instructions stored?

7 A. They are initially stored  
8 on Crutchfield's web servers, and  
9 then they are transmitted to the  
10 user's browser or device, sometimes  
11 by way of an intermediary like  
12 Akamai, and then stored on the user's  
13 computer or mobile device in what's  
14 known as the cache.

15 Q. And what is the cache?

16 A. The cache is, essentially,  
17 the storage area for the user's web  
18 browser. It allows it to store,  
19 either temporarily or for sometimes,  
20 you know, months or years, images or  
21 code that's given to it by the web  
22 server. And it allows it to then  
23 more quickly render that web page on  
24 subsequent visits.

1 Q. Is it possible to disable  
2 cache?

3 A. It is possible to disable  
4 cache.

5 Q. What's the effect of that?

6 A. Disabling the cache would  
7 make your browsing speed slower. And  
8 it would -- as I think a previous  
9 witness testified, it would also  
10 cause you to download more data -- or  
11 use more data in the downloading of  
12 those assets, since you would  
13 repeatedly request the same asset.

14 Q. And can a user determine  
15 how long assets are stored in their  
16 cache?

17 A. Not -- typically, not  
18 individual assets. Typically, you  
19 specify your browser to kind of --  
20 most browser -- most web browser  
21 software lets you specify the size of  
22 your cache, and the web server is  
23 what instructs your browser on how  
24 long to cache items for.

1 Q. So let me make sure I  
2 understood that.

3 The server -- so the web  
4 server from the retailer is  
5 instructing your browser how long to  
6 retain the items in its cache?

7 A. That's right. So it would  
8 be -- for example, that image that I  
9 showed you at the beginning, it would  
10 essentially say, here is an image.  
11 Why don't you hang on to this for a  
12 few weeks in the event that you need  
13 to show it in your browser again.

14 And if the user's browser  
15 has space, it will store that image  
16 based on the web server's  
17 instructions.

18 Q. And so the net effect for  
19 the user of storing these  
20 instructions in this cache is what?

21 A. The images would, in future  
22 visits, speed up their rendering of  
23 the retailer's website, but it would  
24 use space, hard disc space, on the

1 user's computer.

2 Q. All right. So we talked at  
3 the beginning about, as part of this  
4 exchange between the web server and  
5 the user's computer, the placement of  
6 cookies.

7 A. Uh-huh.

8 Q. So let's talk a little bit  
9 about cookies. What's a cookie?

10 A. A cookie is simply a string  
11 of data that is stored on the user's  
12 computer by instruction of the  
13 website. Often it's a text file; it  
14 can be other things. But it's,  
15 essentially, a data element that the  
16 website instructs the user's browser  
17 to save on to a disc.

18 Q. And what are cookies  
19 typically used for?

20 A. I think we heard this  
21 earlier, but they can used for a  
22 variety of things. They can be used  
23 to remember -- essentially, remember  
24 anything that the website or service

1 wants remembered about the user.

2           And so that could be things  
3 like what items they have in their  
4 shopping cart, what their preferences  
5 were for language or -- or,  
6 oftentimes, most prominently, they're  
7 used to provide a unique identifier,  
8 identifying that individual user or  
9 computer.

10       Q.   And so let me make sure I  
11 understand the process.

12           I visit a website and that  
13 website sets a cookie.  Where does  
14 that cookie live, then?

15       A.   So in the response from the  
16 website, the website issues an  
17 instruction.  It's called a set  
18 cookie instruction and it just  
19 instructs your browser to set a  
20 cookie, which it then does basically  
21 on your hard disc.

22       Q.   And now I navigate away  
23 from the website.  Is that cookie  
24 still there?

1           A.    That is.  Unless the user  
2 has deleted their cookies or blocked  
3 the setting of cookies, that cookie  
4 would remain on their hard drive.

5           Q.    Okay.  And now when I go  
6 back to the same website, what's the  
7 effect of me having a cookie there?

8           A.    When you go back to the  
9 website, as soon as you make a  
10 connection, another request to the  
11 website, you automatically -- your  
12 browser automatically transmits those  
13 cookies to the website.

14          Q.    And what can the server  
15 then do with that information?

16          A.    So it can remember -- the  
17 server can then use that information,  
18 the cookie information you transmit  
19 to it, to remember that you were  
20 perhaps the previous visitor, for  
21 example, or that you had a particular  
22 item in your cart, which they might  
23 choose to show you again.

24          Q.    For instance, might a

1 website, you know, customize based on  
2 my second visit based on the cookie?

3 A. It could use it for  
4 customizing, essentially, saying, Hi,  
5 Dan, Welcome back.

6 Because it would perhaps  
7 either store your name in the cookie,  
8 or more often it would store,  
9 essentially, your user ID, which then  
10 it would look up and say, hey, your  
11 name is Dan, and use that to  
12 customize and say, Hey, Dan, Welcome  
13 back.

14 That would be an example of  
15 customization.

16 Q. Now, the cookie is not --  
17 on my second visit, the cookie isn't  
18 performing that work on my computer,  
19 is it?

20 A. No. The cookie is simply a  
21 string of numbers that identify you,  
22 right. It's -- essentially, it can  
23 be thought of like a license plate  
24 number or a driver's license number

1 that you're issued, and then you then  
2 furnish every time you visit the  
3 site.

4 Q. So the server recognizes  
5 that cookie and then responds  
6 accordingly?

7 A. That is correct.

8 Q. Is that how I see the  
9 difference?

10 A. That's right.

11 Q. Okay. All right. Now, you  
12 mentioned this briefly previously,  
13 but you have a Figure 11 on Page 12  
14 of your report.

15 And I think you said that  
16 this was an example of the data that  
17 Crutchfield would receive from  
18 Omniture based on a customer's  
19 Internet usage.

20 Is that correct?

21 A. That's right. So this --  
22 this is, essentially, some  
23 documentation that was provided. And  
24 I only reference it to just give

1 you -- kind of just to highlight that  
2 the set of -- the set of data that  
3 we're talking about, the set of  
4 non-voluntary data that we're talking  
5 about, with regards to clickstream  
6 and tracking and the information the  
7 company receives, is highlighted in  
8 this document.

9           So this is, again, things  
10 like the page you're visiting, your  
11 IP address, your, you know, language  
12 type, your date and time, et cetera.

13           And these are the building  
14 blocks for things like analytics or  
15 clickstream analysis or  
16 personalization.

17       Q.    Okay.  Can you turn to  
18 Exhibit 3 in the binder there.

19       A.    Okay.

20       Q.    Do you see a page that has  
21 the Bates number 247 on it?

22       A.    247?

23       Q.    Yeah.

24       A.    Exhibit 3?

1 Q. Yeah. My exhibits are off.

2 A. I found it.

3 Q. Okay. And that's -- I'm  
4 sorry. That's Exhibit 6. Sorry  
5 about that. My numbers are off here,  
6 apparently.

7 So the document that's been  
8 marked Tax Commissioner's Exhibit 6,  
9 at page Bates stamp 247, is that the  
10 same page that you've reproduced in  
11 your report?

12 A. The Bates stamp isn't  
13 showing on mine.

14 Q. Okay.

15 A. But the page looks like the  
16 same page in my exhibit, which is --  
17 which was one of the documents in the  
18 production.

19 Q. So that's on Page 1 of 9  
20 there down at the bottom?

21 A. Page 1 of 9 of Exhibit 6.

22 Q. All right. You go on in  
23 your report to talk about first-party  
24 cookies.

1           What's a first-party  
2 cookie?

3           A.    So that we have defined  
4 what cookies are.  And the difference  
5 between a first-party and a  
6 third-party cookie is just the  
7 nomenclature to describe the first  
8 party is the -- is typically referred  
9 as to the website the user  
10 intentionally visits, right.

11           So, in this case, they may  
12 knowingly type in Crutchfield.com  
13 into their browser or click on a link  
14 in an e-mail that takes them to  
15 Crutchfield.com.

16           Crutchfield, in that case,  
17 is a first party, and by the  
18 technical definition everyone else is  
19 a third party.  And so third-party  
20 cookies are cookies set by anyone  
21 that's not a first party.

22           Q.   And Figure 12 on Page 13 of  
23 your report, is that an example of a  
24 set cookie from Crutchfield's

1 website?

2 A. That's a first -- example  
3 of a set cookie from Crutchfield,  
4 which would be a first-party cookie.

5 Q. And in your review of the  
6 depositions and the documents in this  
7 case, as well as your review of the  
8 Internet Archive materials, did you  
9 find that Crutchfield was using  
10 first-party cookies?

11 A. I did. And I believe they  
12 in their depositions and their  
13 privacy policies outline that they  
14 use cookies.

15 Q. And let me ask you, while  
16 we're on the topic of privacy  
17 policies, to turn to the back of your  
18 report. And you see just right after  
19 your resume there.

20 A. Yes.

21 Q. Do you see those documents  
22 following your resume?

23 A. Yes. Yes.

24 Q. Could you tell us what

1 those are?

2 A. Those were simply copies of  
3 Crutchfield's privacy policies taken  
4 from the Internet Archive during --  
5 and they represent the times shown at  
6 the top of the page during the --  
7 during the time period in question.

8 Q. And did you access the  
9 Internet Archive and retrieve those  
10 yourself?

11 A. Yeah. Yeah. I mean,  
12 anyone can go to that URL and  
13 retrieve them.

14 Q. And do those look like the  
15 ones you pulled down?

16 A. Yes. Uh-huh. The full URL  
17 is at the bottom of the page, if you  
18 want to go visit it.

19 Q. All right. And is it your  
20 understanding that those privacy  
21 policies indicate that Crutchfield  
22 uses first- and third-party cookies?

23 A. It is my understanding that  
24 they mention them. I have to look to

1 see the exact language in each one.  
2 I think they change a little bit from  
3 year to year, but they mention --  
4 they mention cookies and they mention  
5 opt-out.

6 Q. Is it also your  
7 understanding that one cannot shop at  
8 the Crutchfield website during this  
9 time period without cookies?

10 A. One -- it's my  
11 understanding that one cannot  
12 purchase items from Crutchfield's  
13 website without cookies, based on, I  
14 believe, their testimony and based on  
15 my review of their current website.  
16 But that would not be uncommon.

17 Q. So can a user choose not to  
18 accept cookies?

19 A. A user can definitely block  
20 cookies or instruct their web browser  
21 to block cookies or not accept any  
22 cookies.

23 And, for the most part,  
24 they're able to browse the website,

1 but not engage in anything that would  
2 require a cookie, like a shopping  
3 cart or any kind of customization.

4 Q. Now, most browsers, do they  
5 as a default accept cookies?

6 A. Yes. All the browsers I  
7 know of accept first-party cookies by  
8 defaults, and then some browsers  
9 block some versions of third-party  
10 cookies by defaults. But almost --  
11 the majority all accept first- and  
12 third-party cookies.

13 Q. And so does it, then, take  
14 some affirmative steps by a user to  
15 go in and change that setting?

16 A. Yes, it does.

17 Q. And have you had experience  
18 in reviewing materials that discuss  
19 the frequency with which persons  
20 block cookies in their browser?

21 A. My understanding --

22 MR. BERTONI: Objection.  
23 Foundation.

24 MR. FAUSEY: Well, I'm just

1 asking if he's reviewed materials  
2 that talk about it.

3 MR. BERTONI: Before he  
4 goes into it, he's about to answer  
5 what he understands to be  
6 percentages, I'd need to know from  
7 where first.

8 BY MR. FAUSEY:

9 Q. Well, so that's my  
10 question. Have you reviewed such  
11 materials or have you had access to  
12 information regarding the percentage  
13 of users that block cookies?

14 A. I have -- I have read  
15 materials by various groups, industry  
16 and non-industry groups, describing  
17 the opt-out percentages and those  
18 numbers will vary.

19 MR. BERTONI: I'm going to  
20 object if he can't identify specific  
21 sources for the record. The judge  
22 can rule on it.

23 BY MR. FAUSEY:

24 Q. Go ahead. Continue.

1           A.    Right.  So those numbers  
2 will vary depending on whether  
3 they're from an industry  
4 self-regulatory group or a company  
5 like Mozilla or Pew.  I've seen  
6 numbers from all of those.

7                   I don't remember the exact  
8 figures offhand, but they vary from  
9 the low percentages to sometimes the  
10 high, you know, 30s or 40s.

11           Q.    Being 30 or 40 percent --

12           A.    Of users deleting their  
13 cookies.  My -- in my experience,  
14 from kind of if you were to average  
15 that --

16                   MR. BERTONI:  Objection.

17                   You can answer.

18                   THE WITNESS:  Yeah.  If you  
19 were to -- if you were to average the  
20 numbers, you would expect that -- I  
21 could confidently say that less than  
22 half of users modify their cookie  
23 settings, and I would expect that to  
24 be even lower.

1 BY MR. FAUSEY:

2 Q. During this time period?

3 A. Especially during that time  
4 period. So awareness of cookies and  
5 third-party tracking has only really  
6 kind of blossomed in the last four --  
7 three or four years.

8 And prior, most users were  
9 not aware of the cookie settings in  
10 their browser, privacy settings in  
11 general.

12 Q. Let's move on to  
13 third-party cookies on Page 14 of  
14 your report. You've touched briefly  
15 on third-party cookies.

16 So is a third-party cookie  
17 delivered in the same way that a  
18 first-party cookie is delivered?

19 A. So a third-party -- in the  
20 sense that a third-party cookie is,  
21 essentially, a set cookie header from  
22 a third-party website. So a website  
23 that's not the website the user is  
24 visiting.

1           And so, in the example  
2 of -- you know, just to use  
3 Crutchfield as an example, if you  
4 visited their page and they use a  
5 third party, say, Google in this  
6 case, Google would instruct your web  
7 browser -- it would give it a set  
8 cookie header.

9           And it would allow -- if  
10 your browser allows the setting of  
11 cookies, which most browsers do, it  
12 would -- it would write a cookie to  
13 this.

14         Q.    Do website servers  
15 typically contract with third parties  
16 relative to those cookies?

17         A.    Websites typically contract  
18 with third-party advertisers and  
19 analytics firms, who rely on  
20 third-party cookies to track users  
21 across multiple websites or  
22 properties.

23         Q.    All right.  So on Page 15  
24 of your report, Figure 13, what are

1 we looking at here?

2 A. This is just an example of  
3 the elements of -- so Figure 13 is me  
4 visiting a stereo page on  
5 Crutchfield's website for a Sony car  
6 stereo.

7 And the underlying Figure  
8 14 is one of the third-party requests  
9 that get generated when visiting this  
10 page.

11 And I highlight it to show  
12 that oftentimes the name of the page  
13 is useful for the third party to  
14 identify kind of attributes of the  
15 user, right.

16 So websites or services  
17 typically profile other websites. So  
18 Google would profile that Crutchfield  
19 is a retailer and that this is a car  
20 stereo page.

21 And Google would then later  
22 ascertain that I am interested in car  
23 stereos or -- and add that to my  
24 profile. And that's essentially how

1 the third-party profiling happens.

2 Q. Okay.

3 A. Again, it's on the same  
4 core building blocks as I showed  
5 earlier, which is the referrer  
6 header. The referrer header, in this  
7 case, contains the name of the page  
8 that I'm visiting on the first-party  
9 site.

10 Q. Okay. Now, does the user  
11 know that that's happening?

12 MR. BERTONI: Objection.

13 BY MR. FAUSEY:

14 Q. Is it immediately apparent  
15 that this is happening?

16 MR. BERTONI: Objection.

17 You can answer.

18 THE WITNESS: This -- the  
19 third-party activity would not be  
20 visible to most users, unless they  
21 had some sort of special tool  
22 installed to let them see that  
23 third-party activity.

24 BY MR. FAUSEY:

1 Q. Okay.

2 A. So most users would not be  
3 aware of what third parties are  
4 setting cookies or connecting to  
5 other resources on their computer.

6 Q. And outside of third-party  
7 cookies, what other sorts of tracking  
8 tools exist?

9 A. There are a number of ways  
10 that third parties and first parties  
11 can track or identify a user and that  
12 consists of things like  
13 fingerprinting, essentially, coming  
14 up with ways to uniquely identify the  
15 user.

16 So there's a variety of  
17 technical mechanisms, like flash  
18 cookies, fingerprinting. This other  
19 technique called CSS history  
20 sniffing.

21 Ultimately, all they are  
22 are ways to uniquely identify a given  
23 user.

24 MR. BERTONI: What was the

1 third one that you said?

2 THE WITNESS: CSS history  
3 sniffing. It's kind of in the weeds.

4 We don't --

5 BY MR. FAUSEY:

6 Q. Have you ever heard of  
7 third-party action tags?

8 A. Yeah. Third-party tags,  
9 yeah.

10 Q. Okay. And what are those?

11 A. Those are, essentially,  
12 elements that -- so, as I said, when  
13 Crutchfield instructs -- when  
14 Crutchfield sends -- let me just  
15 figure out how to say this.

16 So Crutchfield sends  
17 instructions to the users' browsers  
18 on additional assets to pull in,  
19 right. And so an instruction could  
20 be go to Google and grab this image  
21 or this advertisement, right. That  
22 could be an instruction.

23 In that instruction the --  
24 Crutchfield, or any other publisher,

1 can add tags to say grab this element  
2 and, you know, here's some additional  
3 info. And so you can tag -- you can  
4 add tags, like the name of a  
5 campaign, attributes about the user,  
6 attributes about a particular  
7 promotion.

8           They're essentially ways  
9 for the first party to pass  
10 information to the third party  
11 through the user's browser.

12       Q.   Why might that be useful?

13       A.   Again, to uniquely profile  
14 or identify the user or a campaign,  
15 measure the effectiveness of a  
16 campaign.

17       Q.   So could that relate to --  
18 also to the relationship between the  
19 first party and the third party, so  
20 the action tag could be tracking an  
21 agreement that they have?

22       A.   That's right. I mean, so,  
23 typically -- typically, the tag would  
24 only work if it's agreed upon between

1 both parties, right.

2           It would be like I would be  
3 sending you codes and you would have  
4 to know -- you would have to have a  
5 contractual --

6       Q.    To know what to do with  
7 them?

8       A.    Yeah.

9       Q.    So on Page 16 of your  
10 report you have a screenshot of  
11 something called Lightbeam.

12           What is that and what are  
13 you demonstrating there?

14       A.    Earlier I was just  
15 describing that a user would not  
16 typically be aware of third-party  
17 activity on their browser.

18           Lightbeam is a tool.  It's  
19 a browser extension that can be  
20 installed to allow users to identify  
21 what third parties are visible on  
22 their website.

23       Q.    So, in your review of the  
24 materials that you received and the

1 deposition transcripts and your own  
2 research, did you -- were you able to  
3 determine whether Crutchfield has  
4 third-party cookies on its website?

5 A. This is an indication out  
6 of the -- from April 2014 and, at  
7 that time, there were third parties.

8 But reviewing the archive  
9 code from Internet Archive also  
10 indicated there was a number of third  
11 parties involved, and the contracts  
12 and the depositions also indicated  
13 there was a number of third parties.

14 Q. Let's talk a little bit  
15 about the mobile environment. It's  
16 the next section of your report on  
17 Page 17.

18 Is the mobile environment  
19 significantly different than your  
20 typical web browsing experience?

21 A. Yes and no. So there are  
22 differences, such as screen size and  
23 the features that the phone supports.

24 You can visit a website

1 through a mobile browser and that  
2 experience is much like visiting it  
3 through a desktop browser, with the  
4 exception that the screen size might  
5 be different or some of the  
6 capabilities might be different.

7           There's also mobile  
8 applications, right. And mobile  
9 applications are a bit different than  
10 mobile browsing because they require  
11 downloading of kind of what's known  
12 as an app from an app store to the  
13 user's phone or device.

14         Q. And is there anything  
15 unique about the mobile environment  
16 in terms of marketing or tracking  
17 that doesn't exist in the web  
18 browsing context?

19         A. So, in a mobile environment  
20 you have additional persistent  
21 identifiers that are like cookies,  
22 but that are hard coded into the --  
23 into the mobile phone that marketers  
24 use to uniquely identify users,

1 users' devices, actually.

2 Q. So you called that, did you  
3 say a persistent --

4 A. Persistent identifier.

5 Q. Okay. Can a user change  
6 that identifier?

7 A. It depends on the operating  
8 system. Typically not, although  
9 we're starting to see mobile --  
10 mobile operating system manufacturers  
11 start adding those features, much  
12 like clearing your cookies was not  
13 immediately available when browsers  
14 first came out, but slowly became  
15 available.

16 Q. And what about the GPS  
17 function of mobile devices? Does  
18 that change the tracking and  
19 marketing?

20 A. I would say somewhat. If  
21 you asked me a year ago, I would have  
22 said yes. And I would say that  
23 mobile GPS is more precise than  
24 location services on laptops.

1           But more and more we're  
2 seeing web browsers also have  
3 location-based services built in.  
4 So, if you've ever seen a little --  
5 like the site will request your  
6 location on your browser, it's also  
7 requesting your -- it's also getting  
8 access to your location based on  
9 things like your IP address or your  
10 wi-fi network.

11         Q.    But it does work  
12 differently in the sense that there's  
13 a GPS --

14         A.    That's right.

15         Q.    -- device on your mobile?

16         A.    So mobile devices have  
17 additional antennas that your laptop  
18 typically doesn't have by default,  
19 and one of those antennas is a GPS  
20 antenna, which can more precisely  
21 locate it on the planet.

22         Q.    I'll ask you to turn to  
23 Page 17 of your report.

24         A.    Yeah.

1 Q. It looks like a screen grab  
2 of a mobile app.

3 What are we looking at  
4 there?

5 A. This is the Crutchfield  
6 mobile app as downloaded from the app  
7 store sometime in April of 2014.

8 My understanding was they  
9 also had a mobile app prior to this  
10 date, and it was, essentially, a way  
11 for me to browse the Crutchfield  
12 catalog and read it and kind of read  
13 it on my phone.

14 Q. Now, is that mobile app, is  
15 that software?

16 A. The mobile app is software  
17 that kind of lives and runs on your  
18 phone.

19 Q. So, to be clear, that's  
20 stored on your mobile device whether  
21 it's your phone or your iPad?

22 A. That's right. The mobile  
23 app is stored on your mobile device.

24 Q. And so tell me about how

1 does it get there. I mean, how do I  
2 get the app on my mobile phone?

3 A. I go -- so, typically, I  
4 would go to -- depending on my mobile  
5 platform, so if it was an iPhone, I  
6 would go to the Apple store, or if it  
7 was Android, I would go to the Google  
8 Play store, and I would kind of  
9 request a download of the app from  
10 the store.

11 At which point, the app  
12 would be downloaded to my phone. And  
13 I would be able to execute and  
14 operate the app on my device.

15 Q. And do apps interact with  
16 web servers?

17 A. Some do. In this case, I  
18 believe Crutchfield will allow you to  
19 download the catalog and browse the  
20 catalog even without web access. So  
21 you could download the app, request  
22 the catalog, and then even without  
23 Internet access, browse the catalog  
24 just on your device.

1 (Discussion off the  
2 record.)

3 BY MR. FAUSEY:

4 Q. Okay. So let's move to  
5 sort of another category. We've been  
6 talking about kind of how stuff  
7 works.

8 A. Uh-huh.

9 Q. Let's talk about sort of  
10 how data is used.

11 I think you were in the  
12 room for Professor Goldman's  
13 testimony, correct?

14 A. Uh-huh.

15 Q. And I believe it was his  
16 testimony that the ultimate goal of  
17 marketing is to increase the market.

18 Would you agree with that  
19 statement?

20 A. Yes.

21 Q. And is customer data used  
22 for that purpose?

23 A. To increase the market?

24 Q. Yes.

1 A. Yes.

2 Q. And so how might a company  
3 -- what means might a company employ  
4 to use customer data to improve -- to  
5 increase their market?

6 A. So I list out a couple. So  
7 one is the most basic, which is  
8 analytics. So analytics allows a  
9 customer or a company to improve  
10 their product or service, right, to  
11 understand.

12 Basically, they get  
13 insights about the -- I'm also  
14 getting tired. The retailer is able  
15 to glean insights from the customer's  
16 behavior and use that to improve  
17 their product or service.

18 And this can be things like  
19 how users browse their website or  
20 what products are most popular, or  
21 what language is working best.

22 They can also do things  
23 like test different languages, right,  
24 A/B testing. And I think there was

1 some documentation in the productions  
2 that Crutchfield was doing A/B  
3 testing of things like how to convey  
4 a message, right.

5           So they could try out  
6 different pitches and measure what  
7 customer response is and what seems  
8 to be more effective.

9           They can also use data to  
10 do retargeting. So, if I know that a  
11 particular person has added an item  
12 to their cart, I can use data -- that  
13 knowledge that they had an item in  
14 their cart that they didn't purchase,  
15 to later reach out to them via either  
16 the same channel or a different  
17 channel in order to pitch them the  
18 item again.

19           And then, finally, they can  
20 use data about the user's behavior to  
21 pitch new products or services or  
22 advertise them to -- in ways that are  
23 receptive.

24           And, typically, a company

1 will either do this themselves, or  
2 they'll rely on kind of pros, like  
3 Atlas or Google, or, you know, ad  
4 networks that are really good at the  
5 behavioral advertising and profiling.

6 Q. So let's break it down just  
7 a little bit.

8 So A/B testing is what?

9 A. A/B testing is, you have an  
10 A test and a B test. So you have --  
11 you know, I can say, you know, the  
12 coffee is lovely, and that's test A.  
13 And then -- or the coffee is -- this  
14 is great coffee, and that's test B.  
15 And I can test those different  
16 slogans.

17 Q. And customer data would  
18 tell you which of those slogans is  
19 more successful?

20 A. That's right.

21 Q. And retargeting, you  
22 mentioned if someone's abandoned an  
23 item in their shopping cart. Let's  
24 use that example.

1           In what ways would a  
2 retailer, an online marketer, use  
3 retargeting to use that abandoned  
4 item to retarget their customer?

5           A.    So, if I knew a customer --  
6 if I, as a retailer, knew a customer  
7 had abandoned an item in their  
8 shopping cart, I could e-mail them  
9 about it later and say, hey, you've  
10 abandoned this item. Are you sure  
11 you don't want to buy it?

12           I could advertise the same  
13 item to them when they're on a  
14 different website, or I could have  
15 the item be the first item they see  
16 when they visit my website again.

17           Q.    And does that limit it to  
18 abandoned items?

19           A.    No. I might -- I might  
20 also target similar classes of items,  
21 right. So it could be I might see  
22 that you are not abandoning an item,  
23 but you've looked at car stereos and  
24 that might be an interest of yours.

1           And so I'll target you with  
2 a car stereo that you might have  
3 looked at previously. If you've ever  
4 had like a tennis shoe follow you  
5 around the Internet, that's often  
6 retargeting.

7           Q.    And what about behavioral  
8 advertising? I think you testified  
9 that companies can sort of sort data  
10 to determine what products you might  
11 be receptive -- a particular user  
12 might be receptive to.

13                    Could you elaborate on that  
14 a little bit.

15           A.    Yes. So companies can  
16 classify people based on a number of  
17 different demographics, including  
18 kind of what -- either what items  
19 they're interested in or what they're  
20 financially able to afford or what  
21 geography they're in, what -- kind of  
22 what lifestyle they lead.

23                    And there's a number of  
24 different firms that help with this

1 type of classification and targeting.

2 Q. Okay. Now, in your review  
3 of the documents, the deposition  
4 transcripts, and your independent  
5 research, did you find that during  
6 this time period Crutchfield engaged  
7 in A/B testing?

8 A. I believe they did. I  
9 highlight the one document they  
10 reference, the PayPal one. They  
11 reference at least one document that  
12 does A/B testing.

13 Q. And I'll ask you to turn to  
14 Exhibit 8 in the binder. That's Tax  
15 Commissioner's Exhibit 8.

16 MR. BERTONI: Can we go off  
17 the record for a second.

18 (Discussion off the  
19 record.)

20 BY MR. FAUSEY:

21 Q. Did you find evidence in  
22 your review of this matter that  
23 Crutchfield was engaged in  
24 retargeting?

1 A. I believe I did.

2 Q. And how about behavioral  
3 advertising?

4 A. I believe Crutchfield  
5 relied on a number of third-party  
6 advertisers that engage in behavioral  
7 advertising.

8 Q. Okay. Let's talk for a  
9 minute about e-mail.

10 How do companies use  
11 e-mail?

12 A. E-mail is another channel  
13 to reach out to a customer. It can  
14 be used for communicating delivery of  
15 a product or to promote new products  
16 or ask customers to revisit and buy  
17 abandoned items, for example.

18 Q. And did you find any  
19 evidence in your review of this case  
20 that Crutchfield used e-mail to reach  
21 its customers?

22 A. I believe they -- in the  
23 depositions and in the contracts they  
24 mentioned e-mail retargeting.

1 Q. And when you say "e-mail  
2 retargeting," did Crutchfield send  
3 e-mails based on a customer's prior  
4 purchasing history or website  
5 activity?

6 A. I believe I saw that in the  
7 depositions.

8 Q. And what about, did  
9 Crutchfield track the success of its  
10 e-mail campaigns?

11 A. I believe things like open  
12 rate were -- and conversion rate are  
13 -- were mentioned or referred to in  
14 the documents.

15 Q. So, and by open rate, what  
16 do you mean?

17 A. Open rate is the number of  
18 people that see the e-mail. It's  
19 usually facilitated by a third-party  
20 pixel tag. And conversion rate is  
21 the number of people that take action  
22 once they've opened the e-mail and  
23 like buy something or kind of visit  
24 the website.

1 Q. All right. So we've talked  
2 a little bit about website cache.  
3 So, I think, hopefully, we can move  
4 through this next section of your  
5 report relatively quickly.

6 What are you showing us in  
7 Figure 17 there?

8 A. 17 is -- demonstrates the  
9 items that are stored in the user's  
10 browser cache after they visited the  
11 Crutchfield website.

12 Q. Okay. And this  
13 demonstrates what you were saying  
14 before about how long an item is to  
15 be cached?

16 A. Right. If you look to the  
17 right, there's a column that says how  
18 long things will expire. And so some  
19 of the images are cached what looks  
20 like a year and six months.

21 Q. And the Figure 18 looks  
22 like --

23 A. I'm sorry. Six months.

24 Q. And Figure 18, it looks

1 like an image that was instructed to  
2 be stored for 30 years?

3 MR. BERTONI: Where are we?

4 MR. FAUSEY: Figure 18 on  
5 Page 21.

6 BY MR. FAUSEY:

7 Q. Is that what we're looking  
8 at there?

9 A. Uh-huh.

10 Q. Now, this is also from  
11 2014, right? This information in  
12 Figure 17.

13 A. This is all from 2014.

14 Q. Would it have operated in  
15 the same manner during the time  
16 period at issue?

17 MR. BERTONI: Objection.  
18 Speculation.

19 BY MR. FAUSEY:

20 Q. Go ahead and answer.

21 A. I would expect the website  
22 to operate in the same manner.

23 Q. All right. Turn to Page  
24 22.

1 A. I'm going to make a  
2 correction, actually.

3 Q. Sure.

4 A. I'm not showing the data  
5 for Figure 18. So I'm just going  
6 to -- let's just use -- let's just  
7 use six months here, because I don't  
8 see the corresponding place  
9 highlighted for 30 years here.

10 Q. Okay.

11 MR. BERTONI: And that's on  
12 the bottom of Page 21. It should say  
13 six months, not 30 years?

14 THE WITNESS: Correct.  
15 BY MR. FAUSEY:

16 Q. Okay. So, on Page 22,  
17 Figure 19, what are you showing us  
18 here?

19 A. These are the examples of  
20 cookies that are stored on the user's  
21 browser after visiting the  
22 Crutchfield website. The specific  
23 cookie I show is the Google  
24 Doubleclick ID cookie.

1 Q. Again, this is 2014?

2 A. Yeah. And that cookie is  
3 set to expire for -- or it's set to  
4 persist for two years.

5 Q. And what are we looking at  
6 in Figure 20?

7 A. Figure 20 is just a dump of  
8 the various cookies that are set  
9 after visiting the Crutchfield  
10 website. So these are 20 or so  
11 cookies resulting from a visit to the  
12 Crutchfield website in the 2014  
13 period.

14 Q. So I'm going to ask you to  
15 turn to Page 24 of your report.

16 A. Yep.

17 Q. And the section is titled  
18 "Opinion regarding Crutchfield's  
19 activities for 2005 to 2012."

20 I'll ask you to take a look  
21 at that page and review your opinions  
22 there. Tell me when you're finished.

23 A. (Witness reviews document.)

24 Yes.

1 Q. And continue on, please, to  
2 Page 26.

3 A. (Witness reviews document.)  
4 Yep.

5 Q. Having reviewed that, are  
6 those the opinions you've drawn at  
7 the conclusion of your review of the  
8 evidence, testimony, and documents in  
9 this case?

10 A. Yes.

11 Q. And do they remain your  
12 opinions today?

13 A. They do.

14 Q. Okay. Just a couple more  
15 questions here.

16 MS. MESIROW: Off the  
17 record.

18 (Discussion off the  
19 record.)

20 BY MR. FAUSEY:

21 Q. Actually, that reminds me,  
22 I forgot to close the loop on a  
23 couple of those things.

24 Let me ask you to turn back

1 to Page 24 of your report. And just  
2 to close the loop, do you see the  
3 paragraph numbered six there?

4 A. Uh-huh.

5 Q. And it refers to a document  
6 that you've titled "Productions:  
7 Experian-Z24.PDF, Wiland.PDF."

8 A. Sure.

9 Q. I'm going to find these  
10 first and then give you the exhibit  
11 number.

12 So I'll ask you to turn to  
13 Exhibit 31. Have a look at that and  
14 tell me when you're done.

15 A. Yes. That's the document  
16 that I'm referring to.

17 Q. And that's the -- you're  
18 referring to Experian-Z24.PDF?

19 A. That's right.

20 Q. And then I'll ask you to  
21 turn to Exhibit 7.

22 A. Yes. That's the Wiland  
23 document.

24 Q. That's the document you're

1 referring to as Wiland.PDF.

2 All right. There are a few  
3 documents following your report and I  
4 would just like to make sure that we  
5 know what they are for the record.

6 So first is your resume,  
7 and we've already covered that.

8 A. Uh-huh.

9 Q. Next are Crutchfield  
10 privacy policies.

11 Did you retrieve those  
12 policies from the Internet Archive?

13 A. I think we talked about it.

14 Q. Okay. And following that  
15 are versions of Crutchfield's home  
16 page.

17 Did you retrieve those from  
18 the Internet Archive as well?

19 A. That's right.

20 Q. And they appear to be in  
21 the same condition as when you  
22 retrieved them?

23 A. Yes.

24 Q. Okay. And the remaining

1 documents are also documents that  
2 you've cited in your report; is that  
3 correct?

4 A. That looks right.

5 MR. FAUSEY: All right.  
6 I'll just review my notes real quick.

7 (There was a pause in the  
8 proceedings.)

9 BY MR. FAUSEY:

10 Q. There was some question  
11 during Professor Goldman's testimony  
12 about whether a web server could  
13 delete items in a customer's cache.

14 Do you recall that line of  
15 questioning?

16 A. I think I do.

17 Q. Well, let me ask you that,  
18 could a web server delete items in a  
19 customer's cache?

20 A. A web server would send  
21 instructions for the item to be  
22 deleted in the cache. So they could  
23 expire an item in the cache.

24 MR. FAUSEY: That closes my

1 direct.

2 Thank you.

3 CROSS-EXAMINATION

4 BY MR. BERTONI:

5 Q. All right. I want to start  
6 with the question about what your  
7 assignment was here.

8 Was your assignment to  
9 describe the various Internet-related  
10 marketing activities that Crutchfield  
11 engaged in during the assessment  
12 period or was it to draw certain  
13 conclusions from that activity, or  
14 both?

15 A. I think the question was --  
16 the assignment was the prompts at the  
17 beginning of my report.

18 Q. Okay. So what you were  
19 asked to do would be to address the  
20 four items that are listed on the  
21 very first page?

22 A. Can you give me that  
23 page -- or that -- what is the  
24 exhibit number?

1 MR. BEATTY: Exhibit 38.

2 BY MR. BERTONI:

3 Q. 38. Is that correct?

4 A. That's right.

5 Q. And so, one, to describe  
6 technological tools used by Internet  
7 sellers generally, and Crutchfield  
8 particularly, for establishing and  
9 growing a consumer market in the  
10 digital age, correct?

11 A. Uh-huh. Yes.

12 Q. Then second -- and I'll  
13 summarize to move us along -- to talk  
14 about how those tools function across  
15 platforms in websites, e-mails, and  
16 mobile applications; is that right?

17 A. With consumers in Ohio,  
18 that's right.

19 Q. Okay. With consumers in  
20 Ohio. And we'll get to that in a  
21 second.

22 And then the third is, to  
23 determine whether during the audit  
24 period Crutchfield extensively used

1 such data tracking and technological  
2 tools on an interactive basis with  
3 Ohio consumers; is that right?

4 A. That's right.

5 Q. And then, finally, whether  
6 Crutchfield's use of these tools  
7 enabled Crutchfield as an  
8 out-of-state retailer to establish,  
9 grow, and maintain its market in  
10 Ohio.

11 Is that fair to say?

12 A. That's right.

13 Q. Let's turn to the last page  
14 of the report.

15 Actually, let's turn to the  
16 page -- it's the paragraph beginning  
17 on 25, bottom paragraph.

18 "Given their use of  
19 Akamai," do you see that paragraph?

20 A. I do.

21 Q. "Some of Crutchfield's  
22 virtual assets were physically  
23 located in Ohio."

24 Do you see that?

1 A. I do.

2 Q. Now, first of all, what is  
3 a virtual asset?

4 A. A virtual asset is an asset  
5 that's not tangible in the sense of  
6 it doesn't have mass. Well, it might  
7 have -- I think we've talked about  
8 this before whether electrons have  
9 mass.

10 But it's virtual in the  
11 sense that it's a digital good.

12 Q. And let me ask you this  
13 question: Do you understand how data  
14 is stored on a computer hard drive  
15 whether solid state or magnetic?

16 A. I have some understanding.

17 Q. You have some  
18 understanding?

19 A. I wouldn't claim to be an  
20 expert.

21 Q. Do you know whether in  
22 storing data on a hard drive, the  
23 mass or weight of the hard drive is  
24 in any way altered as a result of the

1 storage of that data?

2 A. I've not done the research  
3 myself, but my understanding is that  
4 electrons have mass. And so on a  
5 magnetic drive you're simply -- so  
6 you're simply rearranging the mass on  
7 the hard drive.

8 You're not actually adding  
9 new kind of -- you're adding  
10 electrons, but you're not moving the  
11 magnetic particles, the magnetic bits  
12 on the drive.

13 Q. In fact, the drive has a  
14 static number?

15 A. That's right.

16 Q. And when you put data on  
17 the drive --

18 A. You move it around.

19 Q. You move it around. So  
20 that data may be organized in a  
21 certain way based on what's on that  
22 drive.

23 But adding data and  
24 deleting it doesn't change the mass

1 of the drive?

2 A. I don't believe it does.

3 MR. FAUSEY: I'm going to  
4 object as beyond the scope of direct.  
5 And it's also beyond what I've  
6 offered him for.

7 MR. BERTONI: Well, this  
8 entire case focuses on the presence,  
9 and we'll talk about it, but I think  
10 this is well within, and we can raise  
11 it with the hearing officer.

12 BY MR. BERTONI:

13 Q. And so is that -- just so  
14 I'm clear --

15 A. No new mass is added.

16 Q. No new mass is added.

17 If you -- okay. Then  
18 that's fine.

19 A. With the exception of  
20 whatever the mass of the electrons  
21 are that are transmitted to the  
22 device, right.

23 Q. But the device itself,  
24 those electrons that are transmitted

1 don't add to the mass of the device.

2 It simply manipulates what's already  
3 there, right?

4 A. I'll say I don't know to  
5 the degree of electrons. But to the  
6 degree of the magnetism, I would  
7 agree with you.

8 Q. And is it similar to what  
9 happens when you record sound on a  
10 magnetic tape?

11 MR. FAUSEY: I'm going to  
12 object.

13 We're way beyond direct and  
14 we're way beyond his expertise.

15 MR. BERTONI: I'm entitled  
16 to probe because the entire theory  
17 here is that there's a presence, and  
18 so I'm trying to figure out what it  
19 is.

20 MR. FAUSEY: But he's not a  
21 magnetic tape expert.

22 MR. BERTONI: Well, maybe  
23 that's -- maybe that's your problem.

24 But it says at the end of

1 this report that Crutchfield had a  
2 virtual presence in the state. So  
3 I'm trying to find out what that  
4 means.

5 THE WITNESS: So what I  
6 mean by virtual asset is they have  
7 possessions, virtual possessions,  
8 that are present in the state.

9 And by -- and I think we've  
10 talked about this before. By  
11 possession, I mean in the same way  
12 that if I had porn, child porn, on my  
13 browser's cache, I could be said to  
14 be in possession of child porn.

15 BY MR. BERTONI:

16 Q. Okay.

17 A. I would say that a  
18 Crutchfield asset on my browser is,  
19 I'm in possession of a Crutchfield  
20 asset. That's what I mean by it.

21 Q. Okay. And so you're not  
22 talking about -- you're not saying  
23 that the virtual asset is physical in  
24 any sense?

1 MR. FAUSEY: I'm going to  
2 object, and I'm going to instruct him  
3 not to answer.

4 We're going way beyond.  
5 And I keep objecting and you keep  
6 taking it further.

7 MR. BERTONI: You have  
8 proffered a witness whose testimony  
9 is that Crutchfield had a virtual  
10 presence in the state, and I am  
11 entitled to explore what that means.

12 MR. FAUSEY: You're asking  
13 about whether -- you're asking him  
14 about the weight of electrons.  
15 You're asking him about magnetic  
16 tapes. These are things he isn't  
17 qualified to answer.

18 And you say this is my  
19 case. No, that's your case. You're  
20 the one saying there's no physical  
21 presence here.

22 MR. BERTONI: Well, that's  
23 right.

24 MR. FAUSEY: I didn't make

1 that case. I didn't offer him for  
2 that. And if you wanted an expert to  
3 talk about magnetic tapes, that's up  
4 to you guys, that's not on me.

5 I didn't call him for that.  
6 I didn't offer him for that. I'm not  
7 going to have him continue to testify  
8 as to the weight of electrons.

9 MR. BERTONI: We're going  
10 to get the hearing officer on the  
11 telephone right now.

12 MS. MESIROW: Good luck. I  
13 mean, no offense, but...

14 MR. BERTONI: Well, all  
15 right. I'm going to reserve on this.

16 BY MR. BERTONI:

17 Q. Let's drill in, because I'm  
18 going to show its direct relevance.

19 The last sentence is that  
20 Crutchfield has a virtual presence.

21 Did you make a finding or  
22 reach a conclusion as to whether  
23 Crutchfield has a physical presence  
24 in Ohio?

1           A.    I don't believe I was asked  
2 to make a finding with regard to  
3 physicality.  I'm a digital expert.  
4 And we're talking about digital  
5 commerce, right.

6           Q.    And so when you say  
7 Crutchfield had a virtual presence in  
8 the state, you're not saying that  
9 Crutchfield has a physical presence  
10 in the state, correct?

11          A.    I'm saying -- again, I'm  
12 speaking in the digital e-commerce  
13 realm.

14          Q.    And so what you're saying  
15 -- tell me what you're saying, then,  
16 again.  You're saying that  
17 Crutchfield had --

18          A.    I'm saying exactly what I  
19 have to say, which is they have a  
20 virtual presence in the state, and to  
21 the degree that I'm an expert on  
22 virtual technologies and e-commerce.

23          Q.    And what does virtual  
24 presence mean?

1           A.    Again, digital presence.  
2 I'll refer you back to the example of  
3 possession of an asset, right.  
4 Possession of an asset could be a  
5 virtual presence. That asset is  
6 present on my phone.

7           Q.    And if Crutchfield left a  
8 message on an answering machine tape,  
9 is that a virtual presence?

10          A.    It could perhaps be some  
11 form of. It's not my area of  
12 expertise.

13                 Digitally, I could tell you  
14 if they left a Skype recording on  
15 your computer and they had certain IP  
16 rights to that recording, I would  
17 say, then, that is an asset.

18          Q.    And do you know whether the  
19 taxpayer in this case, Crutchfield,  
20 Inc., owned any intellectual property  
21 in the State of Ohio during the audit  
22 period?

23          A.    I don't know if they owned  
24 intellectual property. Based on the

1 previous testimony, there are  
2 intellectual property rights to  
3 things like digital assets and  
4 software code and mobile applications  
5 and images, so...

6 Q. And do you recall whether  
7 those digital assets had any  
8 reference to Crutchfield, Inc. or a  
9 different company?

10 A. I don't think that was  
11 specified or clarified.

12 Q. If you turn to -- it's in  
13 your expert report, there was a  
14 reference, do you recall, to an  
15 intellectual property notice that  
16 appeared on a web page?

17 A. Sure.

18 Q. Can you track that down.  
19 Help me find that.

20 A. Yeah, yeah. I think it's  
21 at the bottom of --

22 MR. FAUSEY: I'm going to  
23 lodge another objection. I didn't  
24 ask him about that. I didn't offer

1 him as an intellectual property  
2 expert.

3 I didn't ask him to look at  
4 the relationship between Crutchfield  
5 and various Crutchfield entities. So  
6 I'm not sure where you're going with  
7 this.

8 MR. BERTONI: You asked him  
9 to identify that language and you  
10 interrogated him at some length about  
11 intellectual property rights and I'm  
12 just asking --

13 MR. FAUSEY: I asked  
14 Professor Goldman about that. I  
15 didn't ask Ashkan a single IP  
16 question.

17 BY MR. BERTONI:

18 Q. All right. So let's turn  
19 to that page that has the web page.

20 It's part of your report,  
21 is it not?

22 A. My report, no. It was part  
23 of the -- so I provided examples of  
24 the Crutchfield privacy policies

1 from --

2 Q. Right.

3 A. -- and the website from the  
4 Internet Archive.

5 Q. And let's turn to that  
6 page.

7 A. So there's one on -- right  
8 after my resume.

9 Q. Okay. Let's look at the  
10 end of the privacy policy. And it  
11 talks about Copyright, Crutchfield  
12 New Media, LLC.

13 Do you see that?

14 A. I do see that.

15 Q. Were you asked to determine  
16 whether a company called Crutchfield  
17 New Media, LLC, had a virtual  
18 presence in Ohio?

19 A. I was not asked if  
20 Crutchfield New Media, LLC, was  
21 original.

22 Q. You were asked whether  
23 Crutchfield, Inc.?

24 A. I was asked whether

1 Crutchfield -- I don't remember if it  
2 was specified as Inc. or New Media.

3 Q. The taxpayer here, the  
4 Appellant.

5 A. Okay.

6 Q. Now, if you were looking at  
7 this, would the copyright assignation  
8 here have some relevance to you in  
9 determining whether a company has a  
10 virtual presence in the state?

11 A. I'm not sure. Yeah, I'm  
12 not sure how the copyright  
13 attribution works between the New  
14 Media, LLC, and Crutchfield, Inc.

15 I would presume they are  
16 related, but perhaps your expert can  
17 specify.

18 Q. So I understand clearly,  
19 when you talk about virtual presence,  
20 it seemed to me that it arose from  
21 some -- from a party having some  
22 rights in intellectual property in  
23 Ohio.

24 Is that right?

1           A.    Part of it, yeah. Like  
2 some assets, some virtual goods,  
3 being stored in Ohio, as well as  
4 collected from Ohio. I think that's  
5 what the case that I make in my --

6           Q.    And information that they  
7 own?

8           A.    They have rights to. It's  
9 in the -- in the same way that we  
10 were talking about consumers'  
11 information being used and having  
12 value, right.

13                    I think that's like -- if  
14 you look at both sides of that, there  
15 is a digital exchange of information  
16 going on with assets from Crutchfield  
17 and information about consumers. And  
18 I think that to me is what  
19 constitutes a virtual presence.

20           Q.    And does the ownership of  
21 that information have any relevance  
22 to determining whether something is a  
23 virtual asset?

24           A.    I think it does in the same

1 way that the ownership of the user's  
2 information does, right.

3 Q. And are you aware of any  
4 servers in Ohio, located in Ohio,  
5 that set cookies for Crutchfield  
6 during the tax period?

7 A. During the tax period I am  
8 not, but I am familiar with --

9 Q. Well, I'm asking you about  
10 your -- your counsel can --

11 A. Right.

12 Q. So you are not aware of  
13 any?

14 A. I'm aware that -- I'm aware  
15 of what I've stated in my report,  
16 which is that, during the period that  
17 I tested, there were Akamai servers  
18 in Ohio.

19 And during the period in  
20 question, there were Akamai servers  
21 being used -- sorry -- Akamai was  
22 being used by Crutchfield.

23 Q. In other words, you were  
24 not aware of any servers in Ohio that

1 set cookies for Crutchfield during  
2 the tax period?

3 A. Specifically, no.

4 Q. And are you aware of any  
5 marketing efforts of Crutchfield  
6 during the tax period used only for  
7 Ohio residents?

8 A. That's a harder one, right,  
9 because they were relying on  
10 companies like Google and third -- so  
11 you would have to have insights into  
12 how Google does targeting.

13 Q. Well, I'm asking you, are  
14 you aware of any marketing efforts by  
15 Crutchfield during the tax period  
16 used only for Ohio residents?

17 A. I don't think I can answer  
18 that.

19 Q. But you --

20 A. So just to clarify why, so  
21 a lot of the targeting engines have  
22 their own algorithms that would say  
23 this just -- like this particular  
24 thing seems to be best targeted for

1 Ohio.

2 I'm not sure, to the degree  
3 that they're relying on third-party  
4 services, I think that's hard to  
5 tell.

6 Q. Well, I'm not asking you  
7 whether it's hard to tell. I'm  
8 asking whether you are aware.

9 A. I'm aware that all of those  
10 services do geographic targeting, for  
11 example.

12 Q. But you are not aware of  
13 whether during the tax period  
14 Crutchfield engaged in any marketing  
15 efforts only for Ohio residents?

16 A. Not only for Ohio  
17 residents. They relied on these  
18 services that geographically target.  
19 Some of those targets could be only  
20 in Ohio.

21 Q. Are you aware, during the  
22 audit period, of whether Crutchfield  
23 engaged -- and not speculatively, but  
24 are you actually aware of marketing

1 efforts by Crutchfield, during the  
2 tax period, that were limited to Ohio  
3 residents?

4 A. I am not.

5 Q. And do you know whether  
6 during the tax period Crutchfield  
7 engaged in any kind of analytics  
8 related strictly to Ohio residents?

9 A. Again, like, it's just  
10 based on the Monetate example that I  
11 showed you, right. There are --  
12 there are numbers broken down by --  
13 analytics broken down by states.  
14 Presumably, depending on how you want  
15 to parse that, that can be analytics  
16 about residents in Ohio.

17 Q. Now, I'm asking you again.  
18 Were you aware of any analytics that  
19 were limited to Ohio residents during  
20 the tax period?

21 Not whether there might or  
22 might not be. Are you aware of any?  
23 And if you are, I'll ask you to tell  
24 me about them.

1 A. I'm not sure -- so I think  
2 I'm having a hard time understanding  
3 your -- like, I'll tell you what I'm  
4 aware of. I'm aware of --

5 Q. Well, I'm not asking you  
6 what other things you're aware of.

7 I'm asking you, are you  
8 aware of any analytics done by or on  
9 behalf of Crutchfield --

10 A. The term "limited" is what  
11 I'm hinging on.

12 Q. -- for Ohio residents only?

13 A. Yes. I would say the  
14 Monetate example.

15 Q. Okay. Let's talk about the  
16 Monetate example.

17 A. Yeah.

18 Q. Show me where that is.

19 A. So, on Page 4, right.

20 Q. Okay.

21 A. This interface allows you  
22 to break down stats per state.

23 MR. FAUSEY: He's on Page 4  
24 of his report, not Page 4 of the

1 exhibit.

2 THE WITNESS: Actually,  
3 that's fine.

4 BY MR. BERTONI:

5 Q. Okay.

6 A. Yeah. So their service  
7 allows you to drill by state, right,  
8 so there -- there's -- based on their  
9 functionality that they provide, they  
10 have an interface that would allow  
11 you to run stats for Ohio only,  
12 right.

13 Q. But here's my question: Do  
14 you know whether Crutchfield ever did  
15 that?

16 A. I don't know if a manager  
17 ever went to that interface. I would  
18 presume based on the functionality.

19 Q. Well, I'm not asking you to  
20 presume. I'm asking -- what we're  
21 trying to get to is what your  
22 knowledge is.

23 And you can --

24 A. I'll tell you exactly what

1 my knowledge is, is that the  
2 functionality exists to do per state  
3 analytics on Ohio, and some manager  
4 may or may not have done that. I  
5 don't have insights and we don't -- I  
6 don't think we have that in the  
7 testimony.

8 Q. You have no knowledge of  
9 whether Crutchfield during the tax  
10 period ever engaged in analytics  
11 limited to Ohio residents, correct?

12 A. I think I just answered the  
13 question.

14 Q. No, you did not. It's a  
15 yes-or-no question.

16 Yes or no, do you have  
17 knowledge of during the tax period  
18 whether Crutchfield engaged in  
19 analytics limited to Ohio residents?

20 A. I don't have any knowledge  
21 to or against that.

22 Q. So you're unaware of any  
23 such activity?

24 A. I'm unaware of some --

1 specific activity.

2 Q. Okay. Now, do you know  
3 whether Crutchfield during the tax  
4 period engaged in any A/B testing  
5 limited to the residents of State of  
6 Ohio?

7 A. I'm trying to figure how to  
8 move this along most quickly. If the  
9 next set of questions are limited to  
10 the State of Ohio, I don't have any  
11 specific knowledge on anything  
12 limited to the State of Ohio, beyond  
13 the functionality provided by the  
14 software and the services, the  
15 third-party services, that  
16 Crutchfield -- so I think that might  
17 help.

18 Q. It helps a little bit, but  
19 let me try to get my questions  
20 answered --

21 A. Right.

22 Q. -- which -- on this one.

23 Are you aware of any A/B  
24 testing conducted by Crutchfield or

1 anyone on its behalf during the tax  
2 period that was tested only on Ohio  
3 residents?

4 A. I'm not aware of anything  
5 tested only on Ohio residents.

6 Q. Do you know of any e-mail  
7 promotions from Crutchfield during  
8 the tax period that were only sent to  
9 Ohio residents?

10 A. I'm not aware of anything  
11 only to Ohio residents.

12 Q. Are you aware of whether  
13 Crutchfield ever sent any e-mail  
14 promotions during the tax period that  
15 had content specifically relating to  
16 Ohio residents?

17 A. No.

18 Q. Were there any promotions  
19 by Crutchfield of any kind that only  
20 Ohio residents received or saw?

21 A. I am not aware.

22 Q. Was there a web page that  
23 Ohio residents visited that was in  
24 any way different from web pages that

1 residents of other states saw during  
2 the tax period?

3 A. Presumably, like the  
4 shipping charges would be different,  
5 but that's probably the only one.

6 Q. Apart from shipping  
7 charges, you're not aware of any  
8 difference?

9 A. I'm not aware.

10 Q. And do you know whether  
11 Crutchfield treated the disclosure of  
12 shipping charges differently in Ohio  
13 from other states?

14 A. I don't know.

15 Q. Do you know whether  
16 Crutchfield treated its handling of  
17 cache on users' computers differently  
18 in Ohio than in any other state?

19 A. I don't believe so.

20 Q. Do you know whether  
21 Crutchfield used cookies in Ohio  
22 differently than it used in any other  
23 states?

24 A. I don't believe so.

1 Q. Are you aware of any  
2 marketing during the tax period by  
3 Crutchfield specifically tailored to  
4 residents of Ohio?

5 A. No.

6 Q. Are you aware of  
7 Crutchfield tracking e-mail --

8 A. Let me qualify the last  
9 one.

10 Again, to the degree that I  
11 don't have knowledge of what the  
12 third-party advertisers do.

13 Q. You have no knowledge one  
14 way or another?

15 A. I do know -- again, I do  
16 know how those algorithms work,  
17 right. So I think this point is kind  
18 of important, right.

19 Because, like, to the  
20 degree that all of these services,  
21 like Google and Doubleclick and  
22 Atlas, rely on geographic targeting  
23 and optimization, right. For  
24 example, they would not show you an

1 ad if you were in a state that was  
2 not receptive to that ad, right.

3 So that -- so I'm going to  
4 qualify that, but to your answer --  
5 to your question, no.

6 Q. Is it fair to say that  
7 Google and its contracts with third  
8 parties can agree to whatever kind of  
9 promotion that their clients wish to  
10 pursue?

11 A. But would they not -- would  
12 they not be an extension of the  
13 person they're contracting for?

14 Q. They may. But that  
15 contractor may say do not promote  
16 based upon any specific geographical  
17 considerations.

18 A. It's possible.

19 Q. You don't know whether that  
20 happened here or not, right?

21 A. I didn't see any mention of  
22 it in the contract, those  
23 restrictions in the contract.

24 Q. Now, when you mention

1 tracking e-mail, you mentioned  
2 opening rates on e-mails, you  
3 mentioned that.

4 Do you know, during the tax  
5 period, did Crutchfield do that on a  
6 state-by-state basis or an aggregate  
7 over the entire customer base?

8 A. I don't know if it was  
9 state by state or aggregate.

10 Q. You don't know one way or  
11 another on that?

12 A. That's correct.

13 Q. Do you know whether or not  
14 Crutchfield engaged in any specific  
15 tracking of e-mail for Ohio residents  
16 only?

17 A. I'm going to go back to my  
18 earlier response. I don't know  
19 anything that was specific to Ohio.

20 Q. Now, you mentioned that  
21 there is -- that a server can cause  
22 the expiry of an item that's in  
23 cache?

24 A. That's right.

1 Q. And let's talk about cache  
2 and how expiration dates work with  
3 cache.

4 If I am a user of a  
5 computer and I set my cache to a  
6 certain size, do I also have control  
7 over how long that item stays in the  
8 cache?

9 A. It depends on the browser.  
10 Some let you say cache for 30 days or  
11 a maximum of five megabytes.

12 Q. And is it your testimony  
13 that a server can then override my  
14 web browser's instructions as to how  
15 long to keep information in cache?

16 A. Yeah.

17 Q. And are you aware of  
18 Crutchfield ever having done that  
19 with its website during the tax  
20 period?

21 A. Overriding? So deleting  
22 items from the cache?

23 Q. Exactly.

24 A. During the tax period, no.

1 I think -- I think this one here is  
2 -- it's a simple way of how the  
3 technology works, right.

4           So, for example, I don't  
5 know of a feature that would let a  
6 user keep an image around in the  
7 cache longer than the website  
8 instructed.

9           Q.    So the website would treat  
10 it and effectively put an expiration  
11 date like a cookie; is that what  
12 you're saying?

13          A.    It's the same.  It's the  
14 same.

15          Q.    Okay.  So, then, what we're  
16 talking about here is a website -- a  
17 server saying here's information, put  
18 it in cache and it has an expiration  
19 date?

20          A.    That's right.  And then  
21 they could later say, you know what,  
22 that asset actually expired either  
23 further out in the future or sooner  
24 than I had told you.

1 Q. And that might be the case,  
2 for example, if an image has changed  
3 for a product? There might be a need  
4 to --

5 A. That's right.

6 Q. Okay.

7 A. That's right.

8 Q. All right. So you talked  
9 about a server responding to a second  
10 visit and saying, Hi, Dan.

11 Now, did Crutchfield do  
12 this during the tax period?

13 A. Say Hi, Dan? No. But I  
14 believe they did some customization  
15 similar.

16 Q. Any customization based  
17 upon a person's name?

18 A. I'm not aware of the  
19 person's name in the customization,  
20 no.

21 Q. And what kind of  
22 customization did they do during the  
23 tax period to visiting web servers?

24 A. Things around promotions,

1 right, so free shipping promotions.  
2 Things about the type of items you've  
3 seen previously or had potentially  
4 bought, the retargeting and stuff we  
5 talked about, or other items you  
6 might be interested in.

7           And things that -- relating  
8 to the, like, make and model of your  
9 car. Like, if you indicated you have  
10 a Toyota, they would market you with  
11 a Toyota stereo.

12           Q. So there's information that  
13 the user provides to Crutchfield, for  
14 example, and Crutchfield will then  
15 use that information when the visitor  
16 returns to present things that it  
17 believes the user might be interested  
18 in?

19           A. That's the second category.  
20 So the -- so that would be an example  
21 of customizing based on the car the  
22 user has disclosed.

23                   Customizing based on what  
24 items were in the cart or what items

1 you've seen previously would not  
2 be -- I don't consider the user  
3 voluntarily making those.

4 Q. But that's information that  
5 the user has input into the web page?

6 A. Or just like clicked on,  
7 right.

8 Q. Clicked on.

9 A. So, if I click on a car  
10 stereo, Crutchfield observes that I  
11 like that car -- you know, a JVC car  
12 stereo.

13 Crutchfield observes that I  
14 like that car stereo and then would  
15 later show me that car stereo. It's  
16 based on maybe less explicit than me  
17 telling Crutchfield I have a Toyota,  
18 right.

19 Q. And so, if I went into a  
20 retail store and told the clerk who  
21 knew me that I liked this particular  
22 model of car, and I came back, they  
23 might -- in that retail context, is  
24 this similar to sort of saying I know

1 you like this car, maybe you'll like  
2 this other one?

3 A. Yeah. I think the -- so  
4 that would be like the second  
5 example. I think, if you want an  
6 analogy, it would be like, if a clerk  
7 observed me looking at a particular  
8 model, and the next time I came back  
9 and said, I saw you looking at that  
10 model, let me show you this other  
11 model. So that would be a closer  
12 analogy.

13 Q. Okay. And when you click  
14 on something to put it into the  
15 shopping basket, that click, I think  
16 we've determined, is a communication  
17 to the server, correct?

18 A. That's right.

19 Q. And the server knows when  
20 you click because you're  
21 communicating with the server and  
22 asking it to do something?

23 A. Correct.

24 Q. And so what the server is

1 doing at that point is, it's keeping  
2 track of the clicks, the  
3 communications that have taken place?

4 A. That's right.

5 Q. And those communications  
6 are initiated by the consumer,  
7 correct?

8 A. That is correct.

9 Q. Each time a consumer  
10 clicks, information is transmitted to  
11 the server?

12 A. It's that data generated or  
13 information generated by the user.

14 Q. Now, in this instance, when  
15 we're talking about what happens on  
16 the web, it's one defining feature  
17 that it seems to be the case is that  
18 communication is consumer initiated.

19 The going to the website,  
20 for example, correct?

21 A. With the exception of  
22 e-mail, yeah.

23 Q. With the exception of  
24 e-mail. Let's put e-mail to the

1 side.

2 But when you're interacting  
3 with a website, you're initiating  
4 communications and getting responses  
5 back?

6 A. Typically.

7 Q. And if you never return to  
8 a website after the first visit,  
9 that's the end, correct?

10 A. Correct. They might still  
11 have some assets on your computer.

12 Q. They might?

13 A. But those will expire.

14 Q. And we talked about  
15 cookies. And there's, in your expert  
16 report -- help me to understand this.

17 If you look at the list of  
18 cookies. It's on Page 23 of your  
19 report.

20 A. Right. Right.

21 Q. Now, this list of cookies  
22 is just a series -- is this actually  
23 what the cookie is, by the way, if  
24 you go down this list?

1 A. Yeah. That's pretty much  
2 all -- so a cookie is the domain that  
3 set it, right. Some flags with  
4 regards to expiration and kind of  
5 timing information.

6 Q. Yep. Yep.

7 A. And then usually a cookie  
8 name and a cookie value. So a good  
9 one might be -- what's a good cookie?  
10 Number 91, right. So --

11 Q. Okay.

12 A. -- it's set by  
13 Crutchfield.com.

14 Q. I see it.

15 A. The cookie name is System  
16 ID and the value is that unique  
17 string.

18 Q. Yep.

19 A. And the stuff, kind of all  
20 the numbers to the right are actually  
21 Unix timestamps that translate into  
22 the last seen and expiration date.

23 Q. Okay. What is a Unix -- so  
24 the -- if you look after Google -- if

1 you look after Crutchfield.com, on  
2 Line 91, there's a vertical line --

3 A. Yeah, the slash.

4 Q. -- and a bunch of stuff  
5 out. Yeah.

6 A. The vertical line is the  
7 path. And then flip back to one  
8 page.

9 Q. Yep.

10 A. Those numbers translate  
11 into those numbers, right. So a Unix  
12 timestamp is just another way to  
13 represent what we know as regular  
14 time.

15 Q. Got it.

16 And so the cookie itself is  
17 the data string that appears after  
18 System ID, that 571075061?

19 (Mr. Joseph Turow joined  
20 the proceedings.)

21 THE WITNESS: It -- I mean  
22 -- kind of, yeah. I mean, all of the  
23 metadata about the domain it's set on  
24 and the path, so, dot,

1 Crutchfield.com, end slash.

2           So, dot, Crutchfield.com

3 means that it applies to all of the

4 subdomains, and the slash means at

5 what directory level. All of that

6 metadata is still associated with the

7 cookie.

8 BY MR. BERTONI:

9           Q. Okay. So, if I stumbled

10 upon your computer, and, let's say, I

11 was a federal investigator.

12           A. Right.

13           Q. And I saw these cookies.

14           A. Right.

15           Q. And I looked at this

16 cookie. That cookie wouldn't tell me

17 anything about you, would it?

18           A. It would tell you that you

19 had been to Crutchfield.com and when.

20                   And, you know, it would

21 give you this look-up number that

22 then you could go to Crutchfield and

23 say --

24           Q. Right.

1 A. -- who is that person?

2 Q. So, in other words, the  
3 cookie is effectively a short code  
4 that relates to a database that's in  
5 the server; is that right?

6 A. That's right.

7 Q. So that when Crutchfield's  
8 server is contacted by you and you  
9 send data, you send the cookie, it  
10 allows Crutchfield to relate that  
11 rather short number to information  
12 that it maintains on its own servers,  
13 in this case, Virginia.

14 Is that right?

15 A. Right.

16 Q. And what's on your computer  
17 is simply a shorthand code that is  
18 unintelligible to anyone who doesn't  
19 have the referent in their own  
20 server?

21 A. Some, right. Not all, but  
22 that particular cookie, absolutely.

23 Q. Well, let's focus on that  
24 one and we can talk about other ones.

1           And the same, I would  
2 suspect, is true for third-party  
3 cookies, that there is a number and  
4 that number only makes sense to the  
5 third party, right?

6           A.    Right.  Or, like -- so,  
7 some history -- let's say yes, with  
8 the caveat that I'll give you  
9 counterexamples, if you want.

10           But for the purpose of this  
11 discussion, typically -- I think I  
12 described it earlier, and I know one  
13 of your witnesses doesn't like  
14 analogies -- but a cookie can be  
15 thought of like a Social Security  
16 number, or some -- some reference  
17 number to uniquely identify you, such  
18 that you can look up subsequent  
19 requests about that person.

20           Q.    Now, in some respects,  
21 until you're able to connect that  
22 computer with an individual, isn't  
23 the cookie more analogous to -- I  
24 hate these analogies, too, but

1 lawyers are taught to think this way.

2 But I liked your license plate

3 analogy.

4 A. License plate would be

5 another one.

6 Q. It analogized the computer

7 to a vehicle. And you don't know who

8 is driving that vehicle, you simply

9 have a license plate number.

10 A. This is true, with the --

11 with the caveat that, in the

12 advertising world, the primary

13 purpose of a cookie and the reference

14 of a cookie is for uniques.

15 And they don't refer to

16 them as unique computers. They

17 usually talk about unique visitors.

18 You get paid for by unique impression

19 or unique visitor. And so for

20 practical, kind of in the -- in the

21 advertising language, it is a unique

22 visitor or person, but --

23 Q. But, in reality --

24 A. In reality, if it's only

1 one person using the computer, it's  
2 just -- it refers to that person.

3           If it's multiple users and  
4 they don't log in and log out and  
5 change settings, then it could be --  
6 it could refer to a household, for  
7 example.

8           Q.    Which could explain my  
9 getting promotions from My Chemical  
10 Romance on a computer that my  
11 daughter uses with me.

12           A.    That's it.

13           Q.    And so you've got this  
14 identifier, and at some point, at  
15 some point, that identifier may or  
16 may not get linked to a living  
17 individual and their name, correct?

18           A.    That's right.

19           Q.    And do you know during the  
20 tax period how Crutchfield, if it did  
21 so, connected cookies to individual  
22 human beings by name?

23           A.    Beyond the -- there is some  
24 instances of descriptions of how they

1 did it for like retargeting, right,  
2 such that when you -- you would have  
3 to know, for example, that a user had  
4 an item in their cart, right.

5           So you would essentially  
6 tie the cookie string to a user  
7 e-mail address, right. Because the  
8 only way you could tie that item  
9 would be through the user's browser  
10 activities by adding to a cart and  
11 that only contains the cookie ID,  
12 right.

13       Q.   And so you don't -- this is  
14 helpful to me. You don't connect a  
15 cookie to a person unless the person  
16 -- one way is the person providing  
17 you some personally identifiable  
18 information during the use of the  
19 computer which bears that cookie  
20 mark?

21       A.   Say that one more time.

22       Q.   I'll try to be less obtuse.

23           You've got a cookie and at  
24 some point one way to connect it to

1 an individual --

2 A. Is if they identify  
3 themselves.

4 Q. -- is if they  
5 self-identify.

6 A. That's right.

7 Q. So I may register. I may  
8 request a catalog. And I'm giving  
9 you an e-mail address now. I'm  
10 volunteering it to you.

11 A. That's right.

12 Q. And now that e-mail address  
13 has been generated by the browser  
14 that is associated with a cookie, and  
15 it may not be perfect.

16 A. That's right.

17 Q. There may be multiple  
18 people using it.

19 A. That's right.

20 Q. You know, somebody could  
21 find your computer open on a desk and  
22 come in and do stuff with it. That's  
23 often a defense in child porn cases,  
24 I'm sure.

1 A. Right.

2 Q. But they could do it. But  
3 there's -- you've got volunteered  
4 information that's now associated  
5 with that cookie?

6 A. Correct. So one way you  
7 could associate a cookie to an  
8 individual is if they volunteer  
9 information.

10 Q. And do you know whether  
11 during the tax period Crutchfield  
12 associated cookies, its own, with  
13 an individual's name, apart from  
14 information volunteered by the web  
15 user?

16 A. I don't. And I don't --  
17 in the context of behavioral  
18 advertising, you wouldn't need to,  
19 but I don't.

20 Q. And, in fact, behavioral  
21 advertising and retargeting can occur  
22 without knowing who the individual  
23 is, correct?

24 A. That's right. That's

1 right.

2 Q. You can use that cookie and  
3 a third party can put that cookie on  
4 a person's computer, and what matters  
5 is that the person who surfed for  
6 chinos on site A is the person who  
7 then goes to CNN and maybe the direct  
8 marketer wants to dangle chinos in  
9 front of them --

10 A. That's right.

11 Q. -- wherever they go.

12 A. Per your description, a  
13 cookie is a shorthand reference to --  
14 to that individual.

15 Q. And so, unless the  
16 individual, at least for  
17 Crutchfield's purposes, during the  
18 tax period, unless that person  
19 volunteered identifying information  
20 that took them outside of simply  
21 being a number and gave them an  
22 identity, Crutchfield wouldn't be  
23 able to tell?

24 A. Tell...?

1 Q. That this cookie is  
2 associated with this human being.

3 A. No. They would only know  
4 attributes of that human being.

5 Q. Okay. Now, Google  
6 Analytics. There's a lot of talk, I  
7 think a lot of companies talk about  
8 analysis of aggregate data, as  
9 opposed to analysis of an  
10 individual's data.

11 And you'll see it in  
12 website disclosures. I'm sure you're  
13 familiar with that.

14 Do you know whether during  
15 the tax period Crutchfield used third  
16 parties for data analytics other than  
17 on an aggregated basis?

18 A. Right. So, yes, almost,  
19 like, the majority of analytics, with  
20 the exception of very specific  
21 clickstream analysis, where you want  
22 to follow an individual user, usually  
23 you do that for usability testing, is  
24 an aggregate.

1           But the thing to realize is  
2 it relies on individual clickstreams,  
3 right. So you can't have the  
4 aggregate without identifying one  
5 unique individual.

6           So you take a bunch of  
7 uniques, whether they're  
8 self-identified by name, usually for  
9 analytics you don't need them by  
10 name, you just need their cookie ID,  
11 and then you analyze them in  
12 aggregate.

13         Q. I mean, is it fair to say  
14 what you're talking about is what  
15 traditional retailers often did with  
16 looking at foot traffic in a store?

17           They're more interested in  
18 the number of people that navigate to  
19 the left or right, and what they look  
20 at, and where they may end up, as  
21 opposed to figuring out whether --  
22 whether Dan, as an individual, did X,  
23 Y, or Z in the store?

24           MR. FAUSEY: I'm going to

1 object to him. I didn't offer him  
2 and didn't question him as to  
3 traditional methods of marketing.

4 MR. BERTONI: Well, let's  
5 stop. I'm trying to be clear for the  
6 record.

7 THE WITNESS: Right.  
8 Right.

9 BY MR. BERTONI:

10 Q. So that your testimony, it  
11 sounds like, is that the individual's  
12 identity is less -- is not relevant  
13 to the kind of clickstream analytics  
14 that at least Crutchfield was using  
15 during this tax period?

16 A. Their individual name  
17 and -- well, I don't think that was  
18 my testimony.

19 Q. All right. Clarify it  
20 then, please.

21 A. So -- so analytics can be  
22 helpful in the digital realm because  
23 it allows you to do aggregate  
24 analysis and identify behaviors of

1 people, right.

2           So, group behaviors, much  
3 like was done in the offline kind of  
4 in-store kind of retail tracking.  
5 With the one caveat, that you can  
6 later then target or advertise to or  
7 personalize based on individual data,  
8 right.

9           So I know you're the white  
10 shirt-type guy and white shirt-type  
11 guys love purple ties, right. And so  
12 next time --

13         Q. I didn't buy it.

14         A. The next time you visit,  
15 I'm going to make sure that I show  
16 you a purple tie. Because my  
17 analysis of everyone in the room's  
18 data has said that white shirt guys  
19 like purple ties.

20         Q. Well, let me ask you the  
21 question, then, about Crutchfield.

22                 Because my review suggests  
23 that Crutchfield looked at usage on  
24 an aggregate basis, it used analytics

1 to try to figure out --

2 MR. FAUSEY: Objection.

3 MR. BERTONI: I'm asking  
4 him to confirm or not. I mean, we're  
5 trying to get to the bottom here.

6 MR. FAUSEY: Your review of  
7 the documents?

8 MR. BERTONI: I'm asking  
9 him to confirm if it's right or  
10 wrong. I'm looking at his report,  
11 what it says, and he can correct me  
12 if my -- if my analysis is incorrect.

13 BY MR. BERTONI:

14 Q. It appears that Crutchfield  
15 used aggregated data, not for the  
16 purpose of isolating white shirt  
17 people, but for the purpose of  
18 understanding how its website was  
19 being used en masse?

20 A. That is true for the, like,  
21 Omniture analytics portion, or even  
22 the -- I'm sorry -- the Doubleclick  
23 analytics portion that you described.  
24 But they did use other more targeted

1 data-based procedures like Criteo.

2 Q. And explain to me what  
3 Criteo -- what they did with Criteo?

4 A. Criteo. It's actually in  
5 the -- I think we -- should we pull  
6 it up?

7 Q. Whoever. Yeah. If you can  
8 tell me what you're looking at and  
9 what the source of it is.

10 THE WITNESS: Do you  
11 remember where it is?

12 MR. FAUSEY: There's a  
13 Table of Contents.

14 MS. MESIROW: It is Exhibit  
15 19.

16 THE WITNESS: Actually,  
17 there's another one. Google  
18 Advertising Service Agreement.

19 BY MR. BERTONI:

20 Q. Okay. So which exhibit are  
21 we again? Sorry. I had to fumble  
22 for a minute.

23 A. 18.

24 Q. 18. Got it.

1 All right. Google  
2 Advertising Service. Now, explain to  
3 me your understanding of what Google  
4 -- what service it was providing  
5 under this agreement.

6 A. So I just want to make sure  
7 this is the ad.

8 Gmail sponsored promotions.  
9 This is the Gmail one. There was one  
10 about AdWords.

11 Q. Because Gmail -- that's an  
12 e-mail promotion. We're not talking  
13 about those just yet.

14 MS. MESIROW: Is it 17?

15 THE WITNESS: 17.

16 BY MR. BERTONI:

17 Q. Program terms. Do you see  
18 that?

19 Google, Inc. Advertising  
20 Program Terms?

21 A. Yeah. yeah.

22 Q. Okay.

23 A. I think that's -- that's  
24 it.

1           So, Google, for example,  
2 the way Google advertising works is,  
3 they profile you based on what sites  
4 you visit, what items you look at on  
5 Crutchfield and other sites.

6           And then use that to,  
7 essentially, build a profile about  
8 you to then target kind of -- so they  
9 would be building the white shirt,  
10 purple tie profile.

11         Q.   And correct me if I'm  
12 wrong, but Google collects that  
13 information from its own users, those  
14 who register for its various  
15 services, right?

16         A.   No.   In this context, if  
17 you've never registered for Google at  
18 all and you simply visit  
19 Crutchfield's site and they have that  
20 third-party element, Google would  
21 collect that information.

22         Q.   And when Google collects  
23 that information, it doesn't collect  
24 the person's personal identifying

1 information, just the fact that they  
2 visited?

3 A. Right. So this is to your  
4 question of they use this kind of --  
5 they are aggregate analytics to build  
6 insights about people, and then use  
7 that to do targeted -- targeted  
8 marketing to those individuals,  
9 right. So --

10 Q. And during this targeted --  
11 during this tax period, again, you  
12 are not aware -- it may have  
13 happened, but you're not aware of any  
14 Google ads targeting residents of  
15 Ohio exclusively?

16 A. Residents of Ohio  
17 exclusively? No.

18 Q. Okay. So we talked -- you  
19 talked briefly about some other  
20 tracking technologies, the flash  
21 cookies.

22 You're not aware of  
23 Crutchfield ever using a flash  
24 cookie, correct?

1 A. I did not test for that,  
2 but it would be very difficult during  
3 that time period to test for it.

4 Q. What about fingerprinting;  
5 any awareness of --

6 A. No.

7 Q. No.

8 So no awareness of  
9 Crutchfield doing that?

10 A. No.

11 Q. CSS history sniffing?

12 A. No. No.

13 Q. It sounds salacious.

14 None of that went on with  
15 Crutchfield?

16 A. That's right.

17 Q. Third-party tags? Any  
18 awareness of Crutchfield involved in  
19 third-party tags?

20 A. I believe there was mention  
21 of them. I didn't get into them into  
22 my report, but I believe they relied  
23 on third-party tags.

24 I'm going to -- I can't

1 remember the exact example. I didn't  
2 include it in my report, so it's not  
3 in there. But I believe they -- I  
4 want to reserve the right to say they  
5 did.

6 Q. And let's talk about who  
7 the third parties would have been.

8 A. They would have been like  
9 Google or Criteo or kind of the  
10 advertising partners.

11 Q. Are you aware of  
12 Crutchfield during the tax period  
13 ever giving Google or other of the --  
14 others the names and addresses and  
15 e-mail addresses of its customers?

16 A. The only place where I'm  
17 aware of that was to the cooperative  
18 marketing databases, not the online  
19 advertisers.

20 Q. Just for non-online  
21 advertising, correct?

22 A. For -- sorry?

23 Q. For non-online advertisers.

24 A. For offline advertisers.

1 For offline advertising, yes.

2 Q. In connection with the work  
3 you do, do you have a working  
4 knowledge of cooperative databases so  
5 you feel competent to talk about  
6 them?

7 A. Do I feel competent?  
8 That's not my focus. The offline  
9 stuff is not my focus.

10 Q. Okay.

11 A. The axiom -- the  
12 offline/online stuff I'm good at. So  
13 like the data logics and how you link  
14 offline behavior to online. But I'm  
15 not -- the strictly old-school ones,  
16 I'm not.

17 Q. Okay.

18 A. That would be for Joe.

19 Q. Well, Joe will have his  
20 turn.

21 During the tax period, did  
22 Crutchfield use GPS data in  
23 connection with its marketing  
24 activity?

1 A. GPS data, I'm not aware of.

2 Q. Okay. Now, mobile app, we  
3 talked about that.

4 A mobile app is the same no  
5 matter where you live, correct?

6 There's no geographically --  
7 geographical variance on a mobile  
8 app?

9 A. For the purposes of this --  
10 there are, right.

11 Q. But not Crutchfield?

12 A. Not Crutchfield.

13 Q. Okay. And Crutchfield's  
14 mobile app was an interface that  
15 allowed the downloading of a catalog;  
16 is that correct?

17 A. I believe so.

18 Q. An image of a catalog,  
19 correct?

20 A. I believe so.

21 Q. And the only way that that  
22 catalog would be delivered to the end  
23 user would be if they asked for that,  
24 correct?

1 A. I believe so. I don't know  
2 if any came with the app by default.

3 I don't --

4 Q. And to be able to get that  
5 image through the app, the consumer  
6 would, A, have to obtain the app,  
7 correct?

8 A. And, B, download the app.

9 Q. So both initiated by the  
10 end user? Communication one, send me  
11 the app, correct?

12 Communication --

13 You have to say yes or  
14 no --

15 A. Yes.

16 Q. -- for the transcript.

17 A. Yes.

18 Q. Communication two, provide  
19 me content that is available through  
20 the app?

21 A. That's right.

22 Q. Correct?

23 A. That is right.

24 Q. The app did not allow the

1 processing of sales transactions, or  
2 anything like that, that you're aware  
3 of?

4 A. Not that I -- I didn't -- I  
5 wasn't able to test the app at the  
6 time period.

7 Q. Okay.

8 A. But I have the description  
9 of the app from the scope of work  
10 document that was in the -- in the  
11 depos.

12 Q. Understood. Understood.

13 And so let's focus for a  
14 second on the question of that app.

15 You don't know who holds  
16 the copyright to the app?

17 A. I think it bears the same  
18 notice at the bottom of the app as  
19 does the --

20 Q. As does the web page?

21 A. -- as the web page.

22 Q. Okay.

23 A. But I'm not an IP expert to  
24 know the -- or what the relationship

1 to Crutchfield, Inc. is.

2 Q. And would the ownership of  
3 that intellectual property for the  
4 app play a role in determining  
5 whether and who has a virtual  
6 presence in the State of Ohio?

7 A. Presumably.

8 Q. Okay. I want to talk to  
9 you about Akamai.

10 A. Uh-huh. Again.

11 Q. I just want to make sure  
12 we're clear for the record. That  
13 during the tax period you are unaware  
14 of any information obtained by  
15 visitors to Crutchfield's website  
16 that originated from a server in  
17 Ohio?

18 A. Say that one more time.

19 Q. During the tax period, you  
20 are unaware of any information  
21 provided to users visiting -- let me  
22 try to be as plainspoken as I can.

23 A. Right. Right.

24 Q. During the tax period,

1 somebody went to the Crutchfield  
2 website and Akamai provided some  
3 information that filled out the web  
4 page. It may have been an image, for  
5 example.

6 Is that correct?

7 A. That's right.

8 Q. You do not know whether the  
9 information provided by Akamai, in  
10 that sense, during the tax period,  
11 came from an Ohio server, correct?

12 A. Was the image served from  
13 an Ohio server --

14 Q. Yes.

15 A. -- during that period?

16 Q. You have no knowledge of  
17 whether that happened during the tax  
18 period?

19 A. During the tax period, I  
20 don't have direct knowledge. I have  
21 circumstantial belief that that  
22 happened, but I don't have direct  
23 knowledge that that happened.

24 Q. Okay. You have a belief.

1 A. Based on how --

2 Q. But I thought your  
3 testimony was that during the tax  
4 period, you were unaware as to  
5 whether Akamai even had a server in  
6 the State of Ohio?

7 A. Well, so we had the  
8 documents that I linked to with  
9 regards to the academic presence of  
10 the servers, right. That would  
11 constitute --

12 Q. Now, we also talked about  
13 the fact that certain academic  
14 institutions contract with Akamai to  
15 obtain servers to integrate into  
16 their own networks to speed the  
17 transmission of data to students.

18 The University of  
19 Pennsylvania has such a contract.  
20 We'll talk about that at length.

21 A. Right.

22 Q. But that is not a server  
23 that is used by Crutchfield under a  
24 contract with Akamai, is it?

1           A.    I don't know how those  
2 two-way contracts work, to tell you  
3 the truth.

4           Q.    All right.  But you don't  
5 know one way or another whether  
6 Crutchfield can, in fact --

7           A.    Sell to both markets?

8           Q.    Yes.

9           A.    I mean, I believe -- so  
10 this is a hard one, right.  So, in  
11 that scenario, Akamai servers at the  
12 University of Pennsylvania are being  
13 used on behalf of the students of the  
14 University of Pennsylvania under  
15 contract, and simultaneously that  
16 same -- those same servers can be  
17 used on behalf of Crutchfield.

18                   And I don't know --

19           Q.    Do you know that for a  
20 fact, or are these dedicated servers  
21 that are designed to serve the  
22 university community by effectively  
23 being gatekeepers to the Internet at  
24 large?

1 A. Right. But that's what a  
2 caching server is.

3 Q. It is.

4 But are these institutions  
5 effectively holding it for their own  
6 purposes and paying for that service,  
7 or is it also that server used to  
8 serve third-party commercial content  
9 on behalf of the commercial company?

10 A. Right. I don't know the  
11 specifics on how those servers are  
12 partitioned between the commercial  
13 uses of Akamai --

14 Q. Or if they are?

15 A. If they are. Or if they  
16 are.

17 So it's quite possible that  
18 they are or they are not used by --  
19 on behalf of Crutchfield during the  
20 tax period.

21 Q. So even if there were  
22 servers in Ohio, you don't know  
23 whether they were used by Crutchfield  
24 under a contract with Akamai?

1 A. Right.

2 Q. And we talked about  
3 geographic proximity of servers to  
4 end users.

5 There may have been a time  
6 when that was very important, maybe  
7 with the dial-up modems, but hasn't  
8 -- in the advent of high-speed  
9 Internet, the geographic proximity is  
10 not as important?

11 A. It still is. Like, I know  
12 where you want to go with this. It's  
13 important as ever.

14 Q. So, let's say -- let's go  
15 back to the question of an individual  
16 accessing the Crutchfield website,  
17 getting some content from Akamai.

18 The path and the sources of  
19 the data that go into that web page  
20 Akamai can change from moment to  
21 moment?

22 A. That's correct.

23 Q. Correct?

24 A. That's correct.

1 Q. And so that if, let's say  
2 -- let's say that the CDC screwed up  
3 in Ohio and all the servers went  
4 down -- they're a good target -- you  
5 would not -- Akamai would find a way  
6 to get information without touching  
7 anything in the State of Ohio, right?

8 A. That's right.

9 Q. And, generally, Akamai  
10 contracts with companies that are  
11 interested in providing fast content.

12 The focus of those  
13 contracts is a performance  
14 specification about how quickly they  
15 want the data to be achieved and with  
16 fewest outages, not where the data is  
17 served from, correct?

18 A. I don't believe the company  
19 specifies where the data is served  
20 from.

21 Q. In fact, if you went to  
22 Akamai and said, I want the servers  
23 to be used in these states, they  
24 would not do that, correct?

1           A.    Again, if it were a year  
2 ago, I would agree with you.  I think  
3 that's changing.

4           Q.    It may be changing now and  
5 there may be leasing agreements that  
6 they have with individual companies.  
7 But let's talk about the tax period.

8           A.    Right.  I'm not aware of  
9 geographic restrictions that the  
10 contractee could specify.

11          Q.    Okay.  And I've read  
12 somewhere some financial people say  
13 that Akamai is the Internet.

14                    There's a certain amount  
15 of -- do you know how much traffic  
16 Akamai handles in -- let's say, in  
17 the U.S. Internet market?

18          A.    I know they used to be the  
19 leading CDN.  There's now been other  
20 -- other approaches that kind of make  
21 them less of a leader.  The  
22 distributed cloud flare kind of  
23 stuff.

24          Q.    Is it fair to say there are

1 two developing models of content  
2 delivery, one of which is the Akamai  
3 model that I think currently has  
4 150,000 servers worldwide, as opposed  
5 to other models that have a cluster  
6 of larger servers in major  
7 metropolitan areas; is that right?

8 A. And there's a third model.

9 MR. FAUSEY: Hold on. I'm  
10 going to object.

11 You just asked him a lot of  
12 questions in that question. So you  
13 asked him to confirm 150,000 servers  
14 and a cluster over here. And so I'm  
15 not sure what you're -- there was a  
16 bunch of questions there.

17 BY MR. BERTONI:

18 Q. Okay. The one model of  
19 content distribution is to have  
20 150,000 servers worldwide and that's,  
21 to the best of your knowledge, the  
22 approach that Akamai takes?

23 A. The distributed server --  
24 geographically distributed server

1 model on the edges is what the  
2 approach Akamai makes -- takes in  
3 contrast to the more traditional  
4 hosting model, which is co-located at  
5 data centers, large infrastructure  
6 data centers, yes.

7 Q. And there are certain  
8 potentially pros and cons with  
9 geographic distributions that  
10 companies have, right?

11 A. Absolutely.

12 Q. And I've seen reference in  
13 Akamai's material to it promoting  
14 this as cloud based. Is that  
15 accurate?

16 A. No. I mean...

17 MR. FAUSEY: Just, again,  
18 I'm going to object for the record.  
19 That question is so ambiguous.

20 You're saying is that --

21 MR. BERTONI: Let me ask it  
22 a different way.

23 MS. MESIROW: What's the  
24 cloud?

1 BY MR. BERTONI:

2 Q. When we see reference to  
3 content providers, data networks,  
4 like Akamai, how does that relate to  
5 what is commonly called the cloud?

6 A. The cloud. I mean, so the  
7 cloud, essentially, means -- the  
8 cloud is -- a web server -- storing  
9 my files on one web server that's  
10 located in Iowa, for practical  
11 purposes, could be storing my data in  
12 the cloud.

13 As could be storing my  
14 data, distributed across a globally  
15 redundant infrastructure like Akamai  
16 could also be storing in the cloud.

17 I think the general notion  
18 is it's stored on a virtual place,  
19 you know, that users are not aware of  
20 the location.

21 Q. Users are not aware of, nor  
22 do they care, right?

23 A. Right. They do now.

24 Q. They may if Ohio wants to

1 tax them.

2 But besides that, they're  
3 interested in having storage space  
4 and effectively leaving it up to the  
5 content provider to decide where it's  
6 kept?

7 A. I mean, I don't completely  
8 agree with that, but, okay.

9 Q. Isn't that what Akamai  
10 offered, that basically we'll host  
11 your data, we'll host it where we  
12 wish to, and what we will do in  
13 making these judgments is achieve a  
14 certain performance in your website?

15 A. Akamai, yeah. Akamai  
16 provided -- to my best knowledge,  
17 Akamai provides essentially content  
18 -- the definition of kind of  
19 distributed content delivery network,  
20 or distribution network, which is  
21 that they will get your data to your  
22 users faster by architecting it such  
23 that, typically, they're either  
24 closest to the edge or closest to the

1 user.

2 Q. And that's their -- that's  
3 within their bailiwick? No one can  
4 tell them what to do?

5 A. Again, my understanding --  
6 like, I'm not -- I'm aware of cloud  
7 providers allowing you to do  
8 geographic restrictions, typically,  
9 on the country scale, not on a state  
10 scale --

11 Q. Okay.

12 A. -- for reasons of kind of  
13 data protection laws. But --

14 Q. Because some -- like Europe  
15 has a set of -- a regime that really  
16 restricts exportation of data?

17 A. That's right.

18 Q. You're not aware of  
19 Crutchfield ever doing that, though,  
20 indicating where data --

21 A. I didn't see that in any of  
22 the contracts.

23 Q. Now, is this the first time  
24 you've ever been asked to determine

1 whether a company has a virtual  
2 presence in some particular state?

3 A. No.

4 Q. Tell me the other matters  
5 that you've worked on.

6 MR. FAUSEY: I'm going  
7 to -- I'll object to relevance.

8 MR. BERTONI: Well, I'm  
9 trying to probe the expert's level of  
10 experience in dealing with this  
11 issue. It's central to this case.

12 MR. FAUSEY: When I asked  
13 Professor Goldman similar questions  
14 during our last deposition round,  
15 your co-counsel instructed him not to  
16 answer.

17 So I'll give you a rope,  
18 but I'm only giving you so much.

19 MR. BERTONI: I do not  
20 speak for Marty.

21 BY MR. BERTONI:

22 Q. And so outside the context  
23 of the Ohio commercial activity tax,  
24 and I know you've had engagements

1 with a number of cases, have you ever  
2 been asked to opine as to whether a  
3 company has a virtual presence in a  
4 given state?

5 A. I don't recall.

6 Q. Okay. You don't recall.

7 So, to the best of your  
8 knowledge, you haven't?

9 A. I don't recall. Yeah.

10 Q. And in the context of your  
11 providing expert advice, you have not  
12 been asked to determine whether  
13 Crutchfield has a physical presence  
14 in Ohio, correct?

15 A. No. I don't believe I've  
16 been asked that.

17 Q. And is it within your scope  
18 of expertise and experience to  
19 determine whether an individual or  
20 company has a physical presence in a  
21 given location?

22 A. Yes.

23 Q. And what are the principles  
24 that you apply to determine whether a

1 company has a physical presence in a  
2 given state?

3 A. Sorry. Sorry. Reask the  
4 last question. Did you say  
5 "physical"?

6 Q. Yes.

7 MR. BERTONI: Can you read  
8 the question back, please.

9 (The court reporter read  
10 back the following:

11 "Q. And is it within  
12 your scope of expertise and  
13 experience to determine whether an  
14 individual or company has a physical  
15 presence in a given location?")

16 THE WITNESS: Physical  
17 presence? Again, I don't purport to  
18 anything with regards to specific  
19 physicality.

20 I purport to be a digital  
21 commerce expert and can specify  
22 whether -- I think the question was  
23 around nexus, not physical nexus.

24 BY MR. BERTONI:

1 Q. Okay. And what is nexus?

2 A. Nexus was --

3 MR. FAUSEY: I'm going to  
4 object.

5 He's not a legal expert.  
6 This is way beyond, again, the scope  
7 of cross.

8 MR. BERTONI: He just said  
9 the question put to him was nexus.

10 MR. FAUSEY: It's beyond  
11 the scope of cross -- or of direct.  
12 And you're asking him for legal  
13 terms.

14 MR. BERTONI: Let me ask  
15 him a question.

16 BY MR. BERTONI:

17 Q. Were you asked to give an  
18 opinion about whether Crutchfield has  
19 nexus in Ohio?

20 A. Yes.

21 Q. Okay. And what was your  
22 understanding of nexus in Ohio?

23 What was the benchmark  
24 against which you were going to make

1 your determination?

2 A. I think I had said earlier  
3 in my testimony, which was -- or in  
4 our -- in our deposition, which was  
5 do they collect data or digital  
6 assets from and do they store data or  
7 provide digital assets to people in  
8 this geography in Ohio.

9 Q. Okay. And -- so thank you  
10 for that.

11 If Crutchfield's only  
12 activity was the placement of cookies  
13 on users' computers in the State of  
14 Ohio, that was its only activity,  
15 would that create a virtual presence  
16 for the company?

17 MR. FAUSEY: Objection.

18 THE WITNESS: I'm not sure  
19 I can -- I'm not sure I can like --

20 MR. FAUSEY: Do you want to  
21 ask him hypotheticals about nexus?  
22 Come on.

23 MR. BERTONI: Well, no,  
24 we're not asking. He determined that

1 there was a virtual presence. I've  
2 examined this report and I can't find  
3 any overarching principles as to  
4 determine when that presence arises.  
5 I'm entitled to figure it out.

6 MR. FAUSEY: Yeah. This is  
7 -- David, he's not a legal expert. I  
8 didn't offer him --

9 MR. BERTONI: I'm not  
10 asking him for that.

11 MR. FAUSEY: I didn't  
12 direct him on this. I never once  
13 said the word "nexus." So you've  
14 gone --

15 MR. BERTONI: I'm not even  
16 asking about nexus. I'm asking about  
17 virtual presence, which is something  
18 he opined on.

19 MR. FAUSEY: You said nexus  
20 ten times.

21 MR. BERTONI: In this  
22 question I asked --

23 MR. FAUSEY: I'm going to  
24 object.

1           Look, I didn't ask him  
2 anything about nexus. I haven't  
3 offered him for that. It doesn't say  
4 nexus anywhere in his report.

5           We've gone down the  
6 road for ten minutes now.

7           MR. BERTONI: I will  
8 withdraw the question. My questions  
9 have now to do with virtual presence.

10 BY MR. BERTONI:

11         Q. Do you recall using that  
12 terminology in your report?

13         A. That's right.

14         Q. Set aside nexus. Pretend  
15 you live in a better world where it  
16 doesn't exist. I wish I could.

17           And for virtual presence,  
18 at some point a company goes from not  
19 having a virtual presence in Ohio to  
20 having a virtual presence. Is that  
21 fair to say?

22         A. Sure.

23         Q. Not every company has a  
24 virtual presence in Ohio, correct?

1 A. Correct.

2 Q. And what I'm trying to  
3 understand is how you get a virtual  
4 presence.

5 If I sent cookies and  
6 they're placed on a hard drive in  
7 Ohio, does that alone give me a  
8 virtual presence in the state?

9 A. I think the report says it  
10 all. Like, it's the combination of  
11 factors of, again, collecting data  
12 from and using data from residents of  
13 the state, and setting assets or  
14 storing assets in that state.

15 That combination of  
16 interactions is what I would -- what  
17 I would essentially hinge -- and  
18 so -- and it's -- so I can't give you  
19 a bright-line rule. It's more of  
20 a -- that's my opinion.

21 MR. FAUSEY: For the  
22 record, that's the third time he's  
23 answered that question in the same  
24 way.

1 MR. BERTONI: And I'm

2 sorry, but I'm --

3 MR. FAUSEY: It's the third

4 time he's answered it in the same

5 way.

6 MR. BERTONI: And he has

7 not answered my question.

8 MR. FAUSEY: He's answered

9 it three times in the same way.

10 MR. BERTONI: He has not.

11 He's answered another question.

12 MR. FAUSEY: You've asked

13 him --

14 MR. BERTONI: But I've

15 asked the question specifically.

16 We've got a number of factors here.

17 This case has been about lining up

18 certain business activities.

19 MR. FAUSEY: Right. I

20 agree.

21 MR. BERTONI: And am I --

22 is this like sausage making, that we

23 sort of squeeze them all out and

24 together it forms a virtual presence?

1 I mean, we're entitled to  
2 segregate those and figure out what  
3 interactive role they play here.

4 MR. FAUSEY: Right. So  
5 you've asked him three times. It's  
6 now nine after 5:00 and he's given  
7 you the same answer each time.

8 MR. BERTONI: He has not.  
9 He has not answered my question.

10 MS. MESIROW: It's the  
11 storing of the assets.

12 MR. BERTONI: Let me ask  
13 the questions, and he can answer  
14 them.

15 BY MR. BERTONI:

16 Q. Is it correct your  
17 testimony is that simply placing  
18 cookies on a computer does not create  
19 a virtual presence?

20 A. I didn't say that.

21 Q. So your testimony was that  
22 all this stuff together?

23 A. Yes.

24 Q. So what piece of it is

1 essential? How is a person supposed  
2 to know what part -- what activities  
3 they can engage in and which they  
4 can't in order to know whether  
5 they're giving rise to a virtual  
6 presence?

7 A. I think that's for -- for  
8 you and the state to decide, right.

9 Q. So all you can say is that  
10 I'm looking at these facts and --

11 A. It's my expert opinion that  
12 those --

13 Q. -- that this gives rise to  
14 a virtual presence. I can't tell you  
15 what part of it.

16 A. I've laid out in my report  
17 what parts of it I think are  
18 contributing and I think the  
19 culmination of those facts. I don't  
20 have much more to add.

21 Q. Well, but I feel like this  
22 is a taxonomical exercise. We're  
23 identifying a rare bird here and so  
24 you've pointed to the feathers and

1 the tail and the claws and the beak.

2 But, at some point, if you  
3 remove the feathers, if it doesn't  
4 have a beak, if it has teeth, it's no  
5 longer bird.

6 And so, my question is, how  
7 am I to look at your report and  
8 understand some governing principles  
9 to know whether a virtual presence  
10 has arisen? What principles apply  
11 here?

12 A. I think the two that I laid  
13 out. I think we can go back and  
14 repeat them.

15 Q. So --

16 A. Collection data from --

17 Q. Collecting data from  
18 consumers?

19 A. Like, basically, resources  
20 from the states, right, which is in  
21 the form of data, which is in the  
22 form of using kind of valuable  
23 information from your interactions  
24 with those consumers.

1 Q. Okay. That's piece one.

2 A. Piece one.

3 And the storage and usage  
4 of assets in that state. So, like,  
5 storing stuff in the cache, storing  
6 stuff on the user's computer, storing  
7 -- using the user's processing power,  
8 et cetera.

9 I think those two pieces  
10 are -- and I've highlighted examples  
11 of those.

12 Q. Thank you. That's the  
13 question that I was trying to get an  
14 answer to.

15 And when you have these two  
16 pieces, the one is collecting of  
17 information, is there any specific  
18 way of collecting information that  
19 matters or is it simply getting  
20 information about the end user?

21 Let me clarify. Does the  
22 collecting of information have to  
23 come from the end user or can it come  
24 from third parties?

1           A.    I guess it would have to  
2 come from -- the factors are it would  
3 have to come from the user directly  
4 or indirectly.

5           Q.    Okay.

6           A.    And it would have to have  
7 some value.

8           Q.    And the keeping of virtual  
9 assets would need to be on the user's  
10 computer?

11          A.    In state.

12          Q.    In state.

13          A.    Yes.

14          Q.    And the only evidence that  
15 you have in this case of any in-state  
16 data, virtual data, during the tax  
17 period, is on the user's computer,  
18 correct? No other servers?

19          A.    Right. To the degree that  
20 I don't have during the tax period  
21 evidence of Akamai storing -- or the  
22 contracts with Akamai and whether  
23 Akamai was, in fact, storing --

24          Q.    You have no knowledge of

1 whether that happened?

2 A. Yeah. Again, it is my  
3 strong belief that it occurred, but I  
4 don't have any documents to point to.  
5 And I guess if you guys wanted to  
6 query those records from Akamai, you  
7 could.

8 Q. Well, here's the question.  
9 Even if Akamai had servers in Ohio --

10 A. They would have logs.

11 Q. Right. They have logs  
12 potentially. We don't know that.

13 We don't know how long they  
14 keep those logs, correct?

15 A. 2012? Yeah.

16 Q. Well, I don't know. Do you  
17 know what Akamai's document retention  
18 policy is?

19 A. No. But their invoicing  
20 policy would probably show, you know,  
21 their -- they have to pay people for  
22 their storage and stuff in state.

23 Q. Maybe so. I can't imagine  
24 that it would take up a lot of space.

1 Right? Maybe the NSA has it.

2 MS. MESIROW: There's an  
3 idea.

4 MR. BERTONI: You'll find  
5 out.

6 BY MR. BERTONI:

7 Q. So for the tax period --

8 A. Again, like, what I just  
9 said.

10 Q. Yeah.

11 A. So I believe on the device,  
12 you know, on the user's computers.

13 And then it is my belief that it was  
14 in state, but we can confirm that or  
15 not. I don't have direct knowledge  
16 of that.

17 Q. Now, are you aware of  
18 whether mail order companies who do  
19 not market online engage in  
20 profiling?

21 MR. BERTONI: Just if he  
22 knows, yes or no.

23 MR. FAUSEY: I'm going to  
24 object.

1 I didn't talk about mail  
2 order. He wasn't offered for mail  
3 order. You have an expert in mail  
4 order, ask him.

5 BY MR. BERTONI:

6 Q. Do you have any  
7 knowledge --

8 MR. FAUSEY: Objection.

9 THE WITNESS: I'm going to  
10 pass.

11 BY MR. BERTONI:

12 Q. You're going to pass? You  
13 don't have any knowledge of  
14 whether --

15 MR. BERTONI: If you want  
16 to instruct him not to answer...

17 MR. FAUSEY: Yeah. We need  
18 to cut this off.

19 MR. BERTONI: Can we mark  
20 the transcript on this page so that I  
21 can bring it to the judge's  
22 attention.

23 BY MR. BERTONI:

24 Q. Do you know what the term

1 "intangible property" means? Is that  
2 something of relevance to you and  
3 what you do?

4 MR. FAUSEY: Objection.

5 In what context?

6 MR. BERTONI: In the  
7 context of the expertise he's  
8 bringing to bear in giving a report  
9 in this case.

10 MR. FAUSEY: That's a term  
11 of art. It's defined --

12 MR. BERTONI: I'm asking  
13 whether it has any meaning to him;  
14 and if so, what it means.

15 MR. FAUSEY: Well, in what  
16 context?

17 MR. BERTONI: In the  
18 context of this case and his report.

19 MR. FAUSEY: In tax? In  
20 U.S. Supreme Court precedent? In --  
21 I mean --

22 BY MR. BERTONI:

23 Q. Let me ask you a more  
24 specific question.

1           In the context of this  
2 case, in the context of the analysis  
3 you were asked to provide, does the  
4 concept of intangible property mean  
5 anything to you?

6           MR. FAUSEY: I didn't ask  
7 him anything about that.

8           Go ahead.

9           THE WITNESS: I'm not sure.

10 BY MR. BERTONI:

11         Q.    Okay. I'm going to wrap up  
12 soon.

13           Did Crutchfield have  
14 virtual assets in any state other  
15 than Ohio?

16         A.    I would presume so.

17         Q.    Do the virtual assets in  
18 possession of an Ohio resident differ  
19 from the virtual assets in possession  
20 of a resident of any other state?

21         A.    I mean, their cookies would  
22 obviously differ in the items. The  
23 configuration of items in the cache  
24 would differ, but the downloaded

1 catalog would presumably be the same.

2 Q. But if you look at the  
3 cache, would you be able to look at  
4 someone's cache and determine where  
5 they were residing when they  
6 downloaded it just by the content of  
7 that cache?

8 A. I'm -- I'm going to  
9 reserve --

10 Q. At this point, you're not  
11 sure?

12 A. I mean, there's a --  
13 there's a lot of specifics there.

14 Q. Let me break it out a  
15 little bit.

16 A. Okay. Yeah.

17 Q. An image in the cache of an  
18 Ohio consumer would be the same image  
19 in a cache of someone else who had  
20 visited the same page, you know, at  
21 or about the same time?

22 A. Again, no. Because, for  
23 example, there's going to be  
24 geographic advertising. There's

1 going to be other assets in the  
2 user's cache, right.

3 Are you talking about  
4 specific to --

5 Q. Crutchfield.

6 A. Just Crutchfield?

7 Q. Just Crutchfield.

8 A. Just Crutchfield. So you  
9 didn't say that.

10 Q. Sorry. Thank you for that  
11 clarification.

12 A. Yeah. Yeah. I would  
13 imagine the assets in a user's cache  
14 in Ohio to be the same roughly, with  
15 the exception of the shipping stuff  
16 that we talked about earlier.

17 Q. To the extent that there's  
18 some -- and the shipping might not be  
19 Ohio specific. It could be regional,  
20 correct?

21 A. Right.

22 Q. I think you had some  
23 testimony about profiling. I just  
24 want to make sure I understand what

1 that means.

2 What does that mean?

3 A. The tie example is a good  
4 example.

5 Q. Okay. And do you agree  
6 with Professor Goldman's testimony  
7 regarding how the technology that  
8 mediates between a server and an end  
9 user is, effectively, in a sense, a  
10 black box, that it sort of allocates  
11 as it will and is sort of controlled  
12 by third parties?

13 A. You're asking a very  
14 technical question.

15 Q. Yeah.

16 A. Yeah. Not really. But,  
17 like, I'll give you an example,  
18 right. So, certain -- this middle  
19 layer, right, so like when I'm on  
20 certain networks, block secured  
21 e-mail, right.

22 And so it's not -- it's  
23 not a black box to me, because I  
24 notice that it's -- the middle layer

1 is doing something that I don't  
2 particularly -- and I'm able to  
3 verify it or be able to observe it  
4 because my mail doesn't get  
5 delivered.

6 Q. All right.

7 A. Right. And so it's not  
8 completely. But Internet routing,  
9 in general, so not at the layer of  
10 Akamai, but at the layer of, say,  
11 your ISP is, for the most part,  
12 somewhat transparent to the degree  
13 that there's not any censorship or  
14 filtering.

15 Q. As a user, are you able to  
16 map out where you would like your  
17 communication to go to get to its end  
18 point?

19 A. I am, yeah.

20 Q. Is it something the average  
21 person can do, because I would really  
22 like to retain your services?

23 A. I mean, yeah, to the degree  
24 that there's a -- there's a plug-in

1 called Fire, right. Fire is a way to  
2 look at -- I believe the name is  
3 Fire. Like, it allows you to look at  
4 Hulu and geographically restricted  
5 content just for an average user.

6 If you want to watch a  
7 soccer game.

8 Q. Got it.

9 A. You just -- you just get to  
10 specify. You want your data to come  
11 through the UK so you can watch World  
12 Cup, right.

13 Q. Can you do that on a  
14 state-by-state basis?

15 A. Again, there are -- so for  
16 Tor, you can. That's how I --

17 Q. Tor, isn't that a special  
18 browser? Right?

19 A. It's a browser plug-in,  
20 yeah. Or it's basically a protocol  
21 that there is a browser for and a  
22 browser plug-in for.

23 Q. And Tor, doesn't that allow  
24 access to -- it effectively -- you

1 can --

2 A. So the way you're thinking  
3 of it, it distributes your traffic,  
4 kind of like -- almost like Akamai,  
5 in the sense, where you get to come  
6 out anywhere.

7 You can also do -- you can  
8 say I only want to come out of the  
9 UK. I only want to come out of Ohio.

10 Q. You can decide that you  
11 want the content that is only  
12 delivered in Germany, say?

13 A. That's right. I can --  
14 essentially, what I'm --

15 Q. A Germany cooking  
16 channel --

17 A. That's right.

18 Q. -- or whatever?

19 A. Yeah. Essentially, I'm --

20 MS. MESIROW: Is this free?

21 THE WITNESS: Yeah.

22 MR. BERTONI: Well, it's  
23 illegal, but it's free.

24 MS. MESIROW: Oh, is it?

1 THE WITNESS: It's not  
2 illegal.

3 MS. MESIROW: No?

4 THE WITNESS: It's not  
5 illegal.

6 BY MR. BERTONI:

7 Q. So intentionally  
8 circumventing?

9 A. I've written on this.  
10 Yeah, it's not. Yeah. So you can,  
11 essentially --

12 Q. I'll have to use this with  
13 the FTC the next time.

14 A. Yeah. You can --

15 Q. Technically.

16 A. You can use a VPN. You can  
17 use a browser plug-in. You can use a  
18 lot of tools to specify the exact  
19 location of your traffic, including  
20 state by state.

21 Q. Let me ask you this  
22 question, then. Is it giving the  
23 server the false belief that you are  
24 located in a country as opposed to

1 another country?

2 A. That's right. Yeah.

3 Q. Okay. And that's because

4 your browser is presenting data

5 consistent with whatever country you

6 designated?

7 A. Yeah, your -- sure. It's

8 not your browser. Your computer,

9 your IP, yeah.

10 Q. Yeah.

11 And so what you're doing

12 is, you are controlling at least

13 where it appears you are?

14 A. You're spoofing your

15 location.

16 Q. You're spoofing a location.

17 Now, when it comes from the

18 data getting from that spoofed

19 location, which is actually, say, in

20 this room, but it looks to the world

21 like you're in Germany, how that data

22 then goes -- courses through the

23 Internet --

24 A. Right.

1 Q. -- that's something you  
2 can't control, right?

3 A. Not currently, no. The  
4 term you're looking for is source  
5 routing, but...

6 Q. I'd like to -- you can't  
7 drill through servers and say I want  
8 to connect A to B to C to D? Just  
9 sort of --

10 A. Most users cannot. There's  
11 a whole thing called user defined  
12 routing. It's this -- it's this  
13 whole program that lets users kind of  
14 try to define their routes. But for  
15 the purposes of this discussion,  
16 let's say no.

17 Q. No. For purposes of the  
18 tax period in Crutchfield, the answer  
19 is no?

20 A. Sure.

21 Q. Okay. Now, you're not in a  
22 position to tell us one way or  
23 another how this is or isn't like  
24 telephone soliciting or peddling, or

1 anything like that?

2 A. (Indicating.)

3 Q. That's his -- he's going to  
4 tell us all about that. Okay.

5 A. If you've got a technical  
6 question, I'd be happy to answer it.

7 Q. Let's turn to your report.

8 A. Uh-huh. 38?

9 Q. Yeah. Let's turn to Page  
10 24. And if you look at numbered  
11 paragraph two -- well, let's start at  
12 the first opening paragraph.

13 It says, in your opinion  
14 the evidence suggests that  
15 Crutchfield employed the use of  
16 technologies to expand its business  
17 and increase its sales in the State  
18 of Ohio.

19 Now, you're not suggesting  
20 by that that Crutchfield specifically  
21 targeted Ohio residents, are you, as  
22 opposed to residents of other states,  
23 with a sort of singular focus?

24 A. I'm not suggesting it was

1 solely Ohio, no.

2 Q. Their marketing was, in  
3 fact, to increase sales everywhere,  
4 right?

5 A. Correct.

6 Q. And if you look at  
7 paragraph one, it says, "Crutchfield  
8 operated a consumer facing e-commerce  
9 website." One such website, correct?

10 A. I believe so.

11 Q. Not differing based upon  
12 where you're coming from to visit,  
13 where you're knocking, where you're  
14 calling, right?

15 A. There is some  
16 personalization that we talked about  
17 with, like, promotions and --

18 Q. But not based upon the  
19 state of residence of the visitor?

20 A. I don't believe the state  
21 of residence was customized.

22 Q. Typically requires caching  
23 on the end user's computer. We  
24 talked about that. And during the

1 time period. Okay. That's one.

2 Two, "Crutchfield  
3 contracted with Akamai, a content  
4 distribution network, to host content  
5 closer to the end user. In some  
6 cases the content was physically  
7 hosted in Ohio."

8 Now, we talked about  
9 this --

10 A. That's right.

11 Q. -- you don't know one way  
12 or another whether it was hosted in  
13 Ohio?

14 A. I know after the tax  
15 period.

16 Q. After the tax period. But  
17 not during the tax period?

18 MR. FAUSEY: I'm going to  
19 object. He's asked and answered  
20 this.

21 MR. BERTONI: Well, I'm  
22 walking him through just sort of --

23 THE WITNESS: That's fine.

24 BY MR. BERTONI:

1 Q. Okay. So that, three,  
2 you --

3 A. Add the word "likely" in  
4 front of physically and we'll call it  
5 a day.

6 Q. Likely? You don't know one  
7 way or another?

8 A. Again, I know that they  
9 contracted with Akamai and Akamai had  
10 servers shortly after the tax period,  
11 so it's likely.

12 Q. Let's say that there are  
13 two questions.

14 One is, do you know? And  
15 the answer to that is no, correct?

16 A. Do I know --

17 Q. Do you know?

18 A. -- without a shadow of a  
19 doubt?

20 Q. Do you know?

21 A. If there were servers in  
22 Ohio that Akamai operated during that  
23 time period, and if Crutchfield  
24 contracted with them, and nowhere in

1 the contracts did I see  
2 specifications to not geographically  
3 cache information in Ohio, then it's  
4 almost kind of -- it's almost  
5 guaranteed that, at some point, there  
6 would have been information --  
7 Crutchfield data cached on servers in  
8 Ohio.

9           So the question comes down  
10 to, at that point in time, were there  
11 Crutchfield servers in Ohio? And I  
12 think these guys can --

13           MS. MESIROW: Or Akamai,  
14 you mean?

15           THE WITNESS: Sorry.  
16 Akamai servers in Ohio. And these  
17 guys can answer that.

18 BY MR. BERTONI:

19       Q. And you have no knowledge  
20 of that? You don't know whether  
21 there were?

22       A. I just told you what I  
23 know.

24       Q. Right. But, see -- I mean,

1 this is -- this is what I'm trying to  
2 understand. We are talking about  
3 facts.

4 A. Again --

5 Q. Not speculation or not best  
6 guessing.

7 MR. FAUSEY: Hold on. Hold  
8 on. You're just beating on him now.

9 MR. BERTONI: No, I'm not.

10 MR. FAUSEY: He's answered  
11 it several time. He told you he has  
12 no personal knowledge, but that the  
13 facts strongly suggest. That's what  
14 he said. He said it several times  
15 now.

16 BY MR. BERTONI:

17 Q. And everything in your  
18 report which may tend to show the use  
19 of a server in Ohio postdates the tax  
20 period, correct?

21 A. Right. The one example  
22 where I say an Akamai server, right,  
23 and this reference to it, is post the  
24 tax period.

1 Q. Okay. And from what  
2 location in Ohio did you access  
3 Crutchfield's website to get that  
4 data?

5 A. I tested it a few times  
6 from --

7 Q. Where?

8 A. -- from proxy servers that  
9 were located -- basically, bouncing  
10 through, as I said, Tor nodes in  
11 Ohio.

12 Q. So you weren't in Ohio?

13 A. I wasn't physically located  
14 in Ohio.

15 Q. So you accessed this  
16 website from another state?

17 A. Routing through Ohio.

18 Q. So your evidence, as to  
19 2014, does not involve a person in  
20 Ohio accessing the Crutchfield  
21 website from Ohio?

22 A. It has -- so it goes back  
23 to what we just discussed about the  
24 soccer games.

1 Q. Yes. I understand all  
2 that.

3 And my question is, your  
4 evidence here does not involve  
5 accessing the Crutchfield website  
6 from a location in Ohio?

7 A. I was not physically myself  
8 located in Ohio. My traffic appeared  
9 for the purposes of the web server as  
10 we talked about.

11 Q. And so for the purposes of  
12 the web server, the web server  
13 thought you were in Ohio?

14 A. That's right.

15 Q. All the data about IP  
16 addresses, all of that turned out to  
17 be false, correct?

18 A. No. It turned out to be --  
19 I mean, my source address was Ohio.

20 Q. So that didn't tell  
21 Crutchfield anything about where you  
22 were physically located?

23 A. For that test, it told me  
24 that it was in Ohio.

1 Q. It told Crutchfield that  
2 you were someplace that you weren't?

3 A. That's right.

4 Q. It told Crutchfield that  
5 you were in Ohio, but you happened to  
6 be where?

7 A. In D.C., at my office.

8 Q. In D.C.

9 A. Yeah.

10 Q. At your office in D.C.?

11 A. Yeah.

12 Q. And so, in this instance,  
13 the experiment you undertook did two  
14 things.

15 One, it demonstrated that  
16 Crutchfield might not know where its  
17 users are located based upon all the  
18 information that the browser sends to  
19 them. It demonstrated that, didn't  
20 it?

21 A. For -- yeah, for an  
22 advanced user sure.

23 Q. Yes.

24 And what it also

1 demonstrated is that, in this  
2 instance, you have nothing to show  
3 that a person sitting in Ohio --

4 A. Well, that's not true.

5 Q. Well, stop me. Let me  
6 finish my question.

7 There's nothing in this  
8 test that you ran that involves a  
9 person sitting in Ohio, using an Ohio  
10 physically-situated computer  
11 accessing the Crutchfield website?

12 A. I invite any other  
13 technical expert --

14 MR. FAUSEY: I'm going to  
15 object to relevance.

16 Go ahead and answer.

17 THE WITNESS: If you want  
18 to bring any other technical network  
19 expert that knows Internet  
20 architecture to validate the  
21 methodology of my test, I'd be happy  
22 to invite that.

23 BY MR. BERTONI:

24 Q. Let's turn to part of your

1 report that talks about what you did.

2 And can you help me find that.

3 A. Yeah. Page 8.

4 Q. Page 8.

5 MR. FAUSEY: David, I don't  
6 understand the relevance of whether  
7 he was in Ohio or not.

8 MR. BERTONI: The relevance  
9 -- well, let's see what the report  
10 says.

11 THE WITNESS: "For many  
12 Crutchfield users these images can  
13 come directly from a server located  
14 in Ohio. For example, in some tests,  
15 connecting to that Akamai address,  
16 a248.e.Akamai.net, may route a user  
17 to a server physically located in  
18 Columbus, Ohio."

19 BY MR. BERTONI:

20 Q. Okay. Let's stop right  
21 there.

22 It doesn't say where the  
23 user is located. It just says that  
24 in some tests --

1 A. Connecting to that IP  
2 address.

3 Q. -- connecting to that IP  
4 may route the user.

5 So it doesn't say the user  
6 is in Ohio, right?

7 A. Right. But --

8 Q. So someone in California --

9 A. Could get routed to Ohio.

10 Q. -- could get routed to  
11 Ohio?

12 A. It's possible, yeah.

13 Q. Okay.

14 A. But that still means that  
15 Crutchfield maintains assets in Ohio.

16 Q. Well, in 2014?

17 A. Sure.

18 Q. Correct?

19 A. I think that case is even  
20 stronger.

21 Q. I just want to understand  
22 because I read this report --

23 A. Sure. Sure.

24 Q. We'll leave that for

1 argument.

2           Just so that I'm clear on  
3 this, the information on 8 and 9 was  
4 generated based upon your configuring  
5 your computer to pretend to be  
6 someplace you weren't?

7           A. That's right.

8           Q. Okay. Now, let's turn back  
9 to --

10          A. That would be the  
11 definition of a test.

12          Q. That is a good definition  
13 of a test.

14                   But it also, as we  
15 indicated, demonstrates, and I think  
16 you agreed, that for Crutchfield's  
17 point of view, if it had to make a  
18 judgment about where you were  
19 physically located when you were  
20 visiting its website, if it had  
21 access to the kind of information  
22 that you're talking about and sought  
23 it out, it would have been -- it  
24 would have reached an erroneous

1 conclusion about where you were?

2 A. Right. I think -- I think  
3 I said that at the very beginning of  
4 my testimony, when I said IP  
5 addresses, with the exception of when  
6 you use VPNs or services like Tor,  
7 can be used for geographic, but  
8 they're wrong. I think -- I think  
9 that's what I said, if you go back.

10 Q. We'll go back and we'll  
11 look at it.

12 A. And I think the test simply  
13 just proves that at the time -- I  
14 think all I was testing for was were  
15 there Akamai servers caching  
16 Crutchfield assets in Ohio.

17 And in the 2014 period,  
18 this test conclusively shows that  
19 they were, regardless of where the  
20 user's source address is.

21 Q. Now, when you pretended to  
22 be in Ohio, what IP address did you  
23 use?

24 A. It was -- actually, you

1 know what, it was -- I think I have  
2 the logs. I think I recorded it.

3 Q. Let me ask you. How do you  
4 pick an IP address?

5 I mean, am I wrong -- I  
6 mean, my layman's understanding of  
7 what you're telling me is that you  
8 sat in Washington. You said, I'm  
9 going to make my computer look for  
10 all the world like it's sitting in  
11 Columbus, Ohio.

12 A. That's right.

13 Q. And so --

14 A. It actually wasn't Tor. I  
15 remember the service now. It was a  
16 third-party browser extension that I  
17 used similar to the one that I  
18 described.

19 Q. Okay.

20 A. And it was the same one  
21 that I used for The Wall Street  
22 Journal series that we won a Pulitzer  
23 for.

24 Q. Okay. Well --

1       A.    And it was essentially --  
2 essentially, it was contracted with  
3 third parties that provided point of  
4 presence in each place that you can  
5 actually route to.

6       Q.    Understood.

7       A.    And so I can -- I can  
8 actually pull up those logs.

9       Q.    I'm just trying to  
10 understand how you can convince a web  
11 server that you're someplace you're  
12 not.

13       A.    Yeah.    So I can show you  
14 how to do it on your computer.

15       Q.    You picked an IP address --

16       A.    Of a proxy.  I actually  
17 purchased a proxy service, right,  
18 which you can buy.  And there's --  
19 the proxy service will give you a  
20 pull-down, which will be the  
21 geographic location of the server  
22 that you're connecting via, right.

23       Q.    It's clear to you that  
24 irrespective of where you told

1 Crutchfield you were browsing from,  
2 that there would have been no  
3 difference in the delivery of the  
4 website in terms of its content,  
5 correct?

6 A. The content would be the  
7 same. It would just be coming from  
8 different places.

9 Q. Okay. So, conclusion  
10 number four, "Companies with pieces  
11 of code on previous versions of this  
12 site include OwnerIQ."

13 Pieces of code meaning  
14 lines in the HTML, is that --

15 A. That's right. Third  
16 parties embedded into the -- into the  
17 -- I think I was pulling that from  
18 Internet Archive.

19 Q. So let me get this right.  
20 I go to Crutchfield. I type in the  
21 address. And that's an affirmative  
22 act on my part to access Crutchfield,  
23 correct?

24 A. Correct.

1 Q. And then Crutchfield has in  
2 response it's sending you information  
3 that forwards that request to others,  
4 correct?

5 A. (No response.)

6 Q. When you come to  
7 Crutchfield, you're looking for the  
8 whole website, right?

9 A. I'm looking -- yeah.

10 Q. You're not looking for just  
11 the text?

12 When you type in  
13 Crutchfield, it's the user's  
14 intention to get the fully functional  
15 multi-media experience? I mean, you  
16 talked about that dynamic, media-rich  
17 interface.

18 A. You mean the interface.

19 Right, the images.

20 Q. Yes.

21 You're looking for the  
22 dynamic media-rich interface, right?

23 A. Sure.

24 Q. So you're either asking

1 Crutchfield for it or you're saying,  
2 Crutchfield, get it for me, correct?

3 A. Crutchfield, tell me where  
4 to get the pieces to assemble your  
5 website.

6 Q. Right. It's your request.

7 Crutchfield may not be able  
8 to give you all of it if it's got it  
9 located in other places. But  
10 whatever comes to you, you've asked  
11 for it, correct?

12 A. This comes to the question  
13 of whether -- I would agree with you  
14 with the purpose of the text of  
15 the -- the text of the website and  
16 the images.

17 And potentially even  
18 advertising, if I've agreed that it's  
19 an advertising site. But I don't  
20 know if I would agree with you for  
21 the inclusion of third-party tracking  
22 assets.

23 Q. Let's put that aside.

24 A. Okay.

1 Q. But, at least in terms of  
2 the rich, multi-media interface --

3 A. Sure.

4 Q. -- that's something that  
5 you asked for?

6 A. Sure.

7 Q. And some of it Crutchfield  
8 can give you directly; parts of it  
9 come from other places?

10 A. Like Akamai, sure.

11 Q. Sure. Okay.

12 We've got number five. So  
13 we've talked about the analytics. We  
14 talked about these various contracts.

15 And none of them, as I  
16 understand your testimony, involved,  
17 at least to your knowledge, a  
18 promotion or analysis or testing  
19 focused on any particular state?

20 A. Not exclusively, no.

21 Q. Right.

22 And that includes Ohio; no  
23 knowledge of a specific Ohio use,  
24 right?

1 A. Correct.

2 Q. And then we turn to six,

3 "Behavioral targeting technology

4 using Epsilon's Abacus data."

5 Is that for Internet or

6 catalogs, the Abacus data?

7 A. I think it could be used

8 for anything, right.

9 Q. Do you know whether it was

10 used for the Internet?

11 A. I don't know how it was

12 used, but Abacus provides essentially

13 segmenting and marketing data.

14 Q. Do you know whether it was

15 done for Crutchfield for the Internet

16 or for catalog, or both?

17 A. I don't know if it was

18 e-mail, catalog, or -- or web. I --

19 if I'm -- yeah. Let's --

20 Q. The next page. Now, you

21 say, "Based on this research, I'm of

22 the opinion that Crutchfield utilized

23 some of the discussed analytics

24 advertising and web serving

1 technologies in order to target and  
2 provide services to residents of the  
3 State of Ohio."

4           Again, you're talking about  
5 national advertising, not specific to  
6 Ohio residents, right?

7           A.    Correct.

8           Q.    And so, the next,  
9 "Additionally, they employed Akamai's  
10 content distribution network in order  
11 to be more geographically proximate  
12 to visitors in Ohio."

13           Isn't it true, however,  
14 that what Akamai provides is  
15 performance and speed, not any  
16 specific location of a server?

17           A.    Sure.  But it is the  
18 product, but, typically, that means  
19 not exclusively.

20           Q.    Right.

21           Crutchfield didn't say we  
22 want servers proximate to our users  
23 in Ohio?

24           A.    No.

1 Q. And then, "Given their use  
2 of Akamai, some of Crutchfield's  
3 virtual assets were physically  
4 located in Ohio."

5 That's -- you don't know  
6 that?

7 A. We've talked about this.

8 Q. We've been through that.  
9 You don't know that.

10 And then you talk about  
11 nature of website cookies, cached,  
12 and other web elements.

13 What other web elements  
14 besides cached images and cookies?

15 A. JavaScript, HTML.

16 Q. HTML, is that saved on a --

17 A. Sometimes.

18 Q. Sometimes.

19 But are you aware of  
20 Crutchfield's HTML ever being saved?

21 A. I'd have to look.

22 (Witness reviews  
23 documents.)

24 I don't have it in this

1 screenshot. JavaScript, for sure. I  
2 don't have any -- yeah, I don't have  
3 any HTML. Just JavaScript and  
4 images.

5 Q. And JavaScript, that gets  
6 saved in cache?

7 A. Uh-huh. Yeah.

8 Q. So that would be -- you're  
9 only talking about information that  
10 exists on users' computers in Ohio,  
11 right?

12 A. Yes.

13 Q. And that information only  
14 gets to users' computers in Ohio if  
15 they reach out to Crutchfield and  
16 initiate the communication, correct?

17 A. That is correct.

18 Q. And in response to the  
19 communication, Crutchfield delivers  
20 information to them, correct?

21 A. In the form of HTML images  
22 and source code, JavaScript code,  
23 yes.

24 Q. So request, request then

1 fulfilled by the server, correct?

2 A. That's right.

3 Q. And then it says,

4 "Subsequently information about users  
5 such as their clickstream or browsing  
6 activity was collected directly from  
7 computers in Ohio."

8 As well as everywhere else,  
9 right?

10 A. I think you can pretty much  
11 assume for all of this, with the  
12 exception of the server -- no,  
13 actually, even for the server, the  
14 Akamai server, they're going to be in  
15 Ohio and elsewhere.

16 Q. Okay. "This information  
17 can be used to better target and  
18 present advertisements and products  
19 to residents of Ohio in order to  
20 improve Crutchfield's business in the  
21 state."

22 Again, not just Ohio. This  
23 is part of a national marketing  
24 effort, right? Yes or no?

1 A. Yes.

2 Q. Yes. Okay.

3 A. I think I've said yes to  
4 it.

5 Q. "It is my opinion that this  
6 technology indicates that Crutchfield  
7 maintains a virtual presence in the  
8 state through the use of consistent  
9 local interactions with its citizens  
10 and extraction analysis and use of  
11 data about them."

12 Do you see that?

13 So, first of all, the  
14 virtual presence is everywhere,  
15 right? Everywhere that Crutchfield  
16 has customers, Ohio, Minnesota,  
17 anyplace, right?

18 A. Presumably, yes.

19 Q. So what they do isn't --

20 A. Exclusive to Ohio.

21 Q. Right. It's not exclusive  
22 to Ohio.

23 And then you talk about  
24 consistent local interactions. And

1 maybe I can cut to the chase on this.

2           Is it really true that the  
3 local interaction is a person typing  
4 on their keyboard? Is that the local  
5 interaction?

6           A. I would argue that's where  
7 the data is generated. That's where  
8 the user is operating with the  
9 software. That's where the software  
10 is running in the CPU of your  
11 computer. So that's what I mean.

12           Q. And so the user -- on a  
13 computer, the user owns or controls,  
14 purchases, rents, whatever it is,  
15 typing, running software licensed to  
16 the user, that is an interaction in  
17 the State of Ohio between Crutchfield  
18 and the user?

19           A. Right. I mean -- let me  
20 unpack that. The user interacting  
21 with their computer that they own or  
22 are using, running their operating  
23 system that they've licensed, are  
24 then interacting with software that

1 Crutchfield has pushed to those  
2 computers upon request, right.

3 Q. Right.

4 A. Right. So the software --  
5 so the user has requested software  
6 from Crutchfield, which they've  
7 delivered to the user. And that  
8 software then runs, you know --

9 Q. So does it matter that the  
10 information that's delivered to the  
11 user is in digital form? Does that  
12 matter one way or the other?

13 A. Explain.

14 Q. Well, is it important for  
15 this local interaction for the  
16 information that is sent by  
17 Crutchfield and resides in the  
18 consumer's dwelling place, is it  
19 important that it be digital or can  
20 it be non-digital?

21 MR. FAUSEY: I'm going to  
22 object.

23 I'm not sure what you're  
24 asking him.

1 MR. BERTONI: Well, I can  
2 ask it in a more direct way.

3 MR. FAUSEY: He didn't  
4 write a report on anything other than  
5 digital information. So I don't  
6 know.

7 BY MR. BERTONI:

8 Q. Is it the nature of the  
9 information, its digital nature, did  
10 that play a role in your conclusion?

11 A. I believe it did.

12 Q. So that non-digital  
13 information wouldn't result in local  
14 interaction?

15 MR. FAUSEY: Again, I'm  
16 going to object.

17 We didn't ask him to look  
18 at that. He didn't form an opinion  
19 on that.

20 BY MR. BERTONI:

21 Q. If a website hires a web  
22 host located in Ohio to host their  
23 website, does the website have a  
24 virtual presence in Ohio?

1           A.    If the website hires a web  
2 host?

3           Q.    Located in Ohio to host its  
4 website, does the website have a  
5 virtual presence in Ohio?

6           A.    I think it would depend on  
7 some of the other factors that I've  
8 listed, but presumably, right.  So,  
9 if they're also collecting data about  
10 people in Ohio and they're storing  
11 assets on their --

12          Q.    Computers in Ohio?

13          A.    -- in Ohio, and they're  
14 storing it on the website.

15          Q.    Got it.

16                If an Ohio-based Internet  
17 access provider puts some files of  
18 third-party websites to the access  
19 provider's server cache, does the  
20 third-party website have a virtual  
21 presence in Ohio?

22          A.    I'm not understanding the  
23 question.

24          Q.    So the Internet access

1 provider puts some files of  
2 third-party websites to the -- now,  
3 what is AP? Access provider?

4 A. Uh-huh.

5 Q. -- to the access provider's  
6 server cache -- do you know what that  
7 is?

8 Do you know what an access  
9 provider service cache is?

10 A. I'm not sure what you're  
11 talking about.

12 Q. Let me ask you. Let's  
13 unbundle this. This is a good word,  
14 a good concept.

15 Your service provider  
16 caches information; is that right?

17 A. Like, by service provider,  
18 who do you mean?

19 Q. I use Time-Warner Cable.

20 A. So Time Warner, so a cable  
21 provider. Okay.

22 Q. And Time-Warner has  
23 servers?

24 A. Okay. Sure.

1 Q. Is that true? A cable  
2 modem, if I'm accessing, does the  
3 service provider have its own server  
4 -- does the Internet service provider  
5 have its own servers?

6 A. For hosting, like, the  
7 Time-Warner website?

8 Q. Right.

9 A. Yeah.

10 Q. But also for caching  
11 information from other sites?

12 A. I don't know if Time-Warner  
13 operates caches.

14 Q. Do you know whether  
15 Internet service providers are  
16 generally in the business of caching  
17 digital information that is requested  
18 by their customers?

19 A. I don't know about caches.  
20 I know like -- yeah, I'd have to talk  
21 about a specific. I don't know. I  
22 don't know.

23 Q. Well, let's say your  
24 Internet -- who is your Internet

1 service provider?

2 A. Who do I use? RCN.

3 Q. Does RCN cache?

4 A. They don't offer -- they  
5 don't -- they don't tamper with the  
6 connection at all.

7 Q. So that there's no server  
8 that hosts information on behalf of  
9 the service provider --

10 A. No.

11 Q. -- to speed the connection  
12 to you?

13 A. Not for RCN.

14 Q. But there are others that  
15 do?

16 A. Maybe, yeah.

17 Q. You're not aware of them?

18 A. I'm not aware of any. But  
19 they should, right. They could.

20 Q. And if they do, does the  
21 third-party website whose information  
22 is cached by the service provider  
23 have a virtual presence in the state  
24 where it's cached?

1           A.    I don't know like the -- it  
2 would depend on contractual  
3 agreements.

4           Q.    Okay.

5           A.    And whether the third-party  
6 service provider was doing it on  
7 behalf of -- who they were doing it  
8 on behalf of, right.

9           Q.    Yeah.

10          A.    Is the cache a service  
11 provider?  Are they doing it on  
12 behalf of the third party?

13                   MR. BERTONI:  Off the  
14 record.

15                   (Discussion off the  
16 record.)

17 BY MR. BERTONI:

18          Q.    I'm going to ask you some  
19 random questions and finish.

20                   Now, on Page 4 of your  
21 report you include as Figure 3 a map  
22 entitled Monetate EQ3.

23          A.    Monetate, yes.  Uh-huh.

24          Q.    It talks about the five top

1 and five bottom states in terms of  
2 e-commerce traffic.

3 Does it demonstrate  
4 e-commerce traffic for Crutchfield or  
5 generally?

6 A. I believe this is a  
7 functionality that Monetate provides.

8 Q. And do you think that this  
9 data is specific to Crutchfield or is  
10 it general?

11 A. No. I think an example  
12 graphic.

13 Q. Okay. So that's the kind  
14 of data they provide, that doesn't  
15 reflect Crutchfield's experience that  
16 you know of?

17 A. That's right. It's  
18 actually the kind of software. I  
19 think Crutchfield would provide the  
20 data, and then they would crunch it  
21 for you and break it down in this  
22 way.

23 Q. In fact, doesn't the  
24 Monetate publication say that that

1 data is the result of analyzing over  
2 100 million online shopping  
3 transactions?

4 A. So, again, I think that's  
5 the capability of, as I said, the  
6 software, right. So Crutchfield  
7 could -- you could presumably plug in  
8 Crutchfield's data and get...

9 Q. And you don't know whether  
10 Crutchfield ever did that, right?

11 A. I don't, no. I'm just  
12 using it as an example.

13 Q. When you talk about the  
14 conversation between a user's  
15 computer and the website, again, it's  
16 a conversation initiated by the user,  
17 right?

18 A. Yes. I think I've answered  
19 this a few times now.

20 Q. And you indicate that  
21 "Browsing the web is more like having  
22 an in-person conversation than it is  
23 like watching a television set." And  
24 "The Internet is a two-way

1 interaction between users and the  
2 company's web server."

3           And that's what you mean by  
4 conversation; it's two parties  
5 exchanging information?

6           A. That's right.

7           Q. There's reference here if  
8 you look at page -- there's a little  
9 block that shows -- that has  
10 reference to the user's agent.

11           I want you to -- I want to  
12 just -- if you look at 15, that  
13 little -- it looks like Figure 14.

14           A. Yep.

15           Q. Now, user agent, and then  
16 it lists a browser, and then  
17 information about a computer?

18           A. Operating system.

19           Q. Yes.

20           And what's Gecko?

21           A. Gecko is the library  
22 Firefox relies on for rendering.

23           Q. And it's Firefox browser?

24           A. Version 27.

1 Q. And Firefox Mozilla is  
2 effectively -- they have -- is  
3 Firefox their only browser? Isn't  
4 there another one also?

5 A. For Mozilla, yeah. They  
6 have the Tor browser, too.

7 Q. Okay. User agent, user  
8 meaning the person who is using the  
9 computer and browser?

10 The web browser is the  
11 agent of the consumer, not the web  
12 server?

13 A. I think we've talked about  
14 this a bit.

15 Q. We have. Here it refers to  
16 the browser as the consumer's agent,  
17 right?

18 A. So the "user agent" term --  
19 yeah. So it reflects the -- it  
20 mediates the interaction between the  
21 user and the website.

22 And this is the request  
23 letter. So it's saying, hey, I'm the  
24 user's agent. I'm a Mozilla browser

1 and then --

2 Q. Announcing it's arrival

3 saying, here I am, I need

4 information. Can you provide it?

5 That's the consumer's initiating --

6 A. That's right. And then the

7 response header would be, here,

8 Mozilla, we know you can handle this

9 type of font or whatever. And the

10 response header to the user agent

11 from the web server would instruct it

12 to do certain things.

13 Q. Now, Figure 11, is this

14 actual types of data that Crutchfield

15 received from Omniture or just the

16 kind of data they could receive?

17 A. Where are you?

18 Q. Figure 11.

19 A. Again, examples of data

20 received -- oh, it's a typo. Yeah.

21 This is examples of what

22 Omniture provides. And I believe

23 that's their own kind of

24 documentation of what -- how you

1 can -- what data you can get from  
2 Omniture.

3 Q. Right.

4 But this isn't -- this  
5 doesn't tell us what data -- kinds of  
6 data Crutchfield actually got from  
7 Omniture, right?

8 A. No. But it would be my  
9 opinion that at least a number of  
10 these fields were provided to  
11 Crutchfield.

12 Q. So you don't know whether  
13 they were?

14 MS. MESIROW: Do you see  
15 the Bates number on it?

16 MR. BERTONI: Yeah, I know.  
17 Right.

18 BY MR. BERTONI:

19 Q. It's a listing of the kinds  
20 of data Crutchfield could get. But  
21 it's not a listing of the data  
22 Crutchfield actually got during the  
23 tax period?

24 A. Right. Right. And this

1 goes back to the comment I made  
2 earlier, which is that I recall -- I  
3 think it's important to point out  
4 that, again, most analytics, most  
5 clickstream, most kind of -- most of  
6 the analytics that falls outside of  
7 the individualized -- so most of the  
8 aggregate analytics relies on some  
9 subset of this data, right. It's  
10 very difficult to do any aggregated  
11 analytics without --

12 Q. Something from this list,  
13 but not necessarily all of it, right?

14 A. Typically. I mean, so, you  
15 know, the ones at the bottom are just  
16 custom variables that you can define,  
17 right.

18 This is -- this is more  
19 like an API, an application protocol  
20 interface, documentation to describe  
21 what you can get.

22 Q. Now, the only evidence that  
23 you have of Crutchfield engaging in  
24 A/B testing is in connection with

1 PayPal; is that correct?

2 A. There was one slide that  
3 mentioned A/B testing.

4 Q. You're not aware of any A/B  
5 testing of different slogans or  
6 product mixes, et cetera?

7 A. I'm not.

8 Q. Okay.

9 MR. BERTONI: I have no  
10 further questions on cross.

11 MR. FAUSEY: Could we go  
12 off the record for just a second.

13 (Discussion off the  
14 record.)

15 REDIRECT EXAMINATION

16 BY MR. FAUSEY:

17 Q. So you were asked some  
18 questions about whether Crutchfield  
19 used third-party action tags.

20 Do you recall that  
21 question?

22 A. I do recall that question.

23 Q. And did you review the  
24 deposition testimony of Jason

1 McCartney?

2 A. I believe I did.

3 Q. Do you recall his testimony  
4 regarding third-party action tags?

5 A. I vaguely recall it. I'd  
6 have to review it if you have it  
7 handy.

8 Q. Would a review of his  
9 deposition transcript refresh your  
10 memory on that point?

11 A. Yeah, that would be great.

12 MR. FAUSEY: I'm handing  
13 him Volume 1 of Jason McCartney's  
14 deposition transcript.

15 BY MR. FAUSEY:

16 Q. I direct your attention to  
17 Pages 38 and 39.

18 A. (Witness reviews document.)

19 MR. FAUSEY: I have extra  
20 copies. Do you guys want a copy of  
21 that?

22 MR. BERTONI: Yeah. That  
23 would be great, actually.

24 Actually, no. I have a

1 copy. If you could just give me a  
2 moment.

3           McCartney. Okay. So  
4 page...?

5           MR. FAUSEY: 38 to 39 of  
6 Volume 1.

7           THE WITNESS: Okay.

8 BY MR. FAUSEY:

9           Q. Have you read those pages?

10          A. Uh-huh.

11          Q. Has it refreshed your  
12 memory?

13          A. Yes.

14          MR. BERTONI: About  
15 specifically what?

16          MR. FAUSEY: Whether  
17 Crutchfield used third-party action  
18 tags during the time period at issue.

19          MR. BERTONI: Okay.

20 BY MR. FAUSEY:

21          Q. And so I'll ask you again.

22                 Did Crutchfield use third-  
23 party action tags during this time  
24 period?

1 A. Mr. Kim seems to say so.

2 Q. I'm sorry. This is the  
3 deposition transcript of Jason  
4 McCartney. Kim is our guy.

5 A. Oh, right. Danny. I'm  
6 sorry. Q. Answer. Okay. Yes.  
7 Sorry.

8 Yes. So he says -- he  
9 lists aCerno, OwnerIQ, and DeTomey.

10 Q. Just to be clear, your  
11 review of the transcript has  
12 refreshed your memory that  
13 Crutchfield did use third-party  
14 action tags during that time period?

15 A. That is correct.

16 Q. Okay. You were also asked  
17 about whether Crutchfield had a  
18 mobile app during that time period.

19 And I believe you responded  
20 that they had a catalog app during  
21 that time period.

22 A. It was a mobile app that  
23 lets you view the catalog. And the  
24 -- I remember that the scope of work

1 is in the productions.

2 Q. Do you remember  
3 Mr. McCartney testifying that they  
4 had another app that would allow --  
5 another mobile app that would allow  
6 customers to find technology  
7 compatible with their car?

8 A. I did. I wasn't -- I think  
9 we might have been using the term  
10 "mobile app" differently, but yes.

11 Q. Okay. So you do recall --

12 A. I do.

13 Q. -- him testifying that they  
14 had such an app?

15 A. I do.

16 Q. Okay. And do you recall  
17 whether or not he testified --  
18 whether or not Mr. McCartney  
19 testified that a customer could  
20 access the Newegg (sic) website  
21 purchased from that app?

22 A. Yes.

23 Q. So, yes, you remember that?

24 A. I remember that.

1 Q. And did he say that?

2 A. He did say that.

3 Q. Okay. Thank you.

4 There is some question  
5 about storage on the cloud and  
6 whether consumers care that their  
7 data is stored on the cloud.

8 And I think your response  
9 was that they care now. Why is that?

10 A. More recently, that --  
11 understanding that governments,  
12 various governments, can access their  
13 data in the cloud, and there's been a  
14 number of breaches of data in the  
15 cloud.

16 Q. And so, for instance,  
17 people's private photos have been  
18 accessed?

19 A. That's correct.

20 Q. And things like that are  
21 drawing attention to the storage in  
22 the cloud?

23 A. There was a movie about the  
24 cloud recently about it.

1 Q. Okay. And I'm sorry, I'm  
2 going to bounce gears a lot. That's  
3 redirect.

4 A. Sure.

5 Q. So you were asked about  
6 your testimony as an expert witness  
7 and whether you had ever been asked  
8 about a virtual presence before.

9 And so what I want to know  
10 for the record -- and maybe I should  
11 have asked you this in qualifying  
12 you, but we skipped that -- is, how  
13 many times have you provided  
14 testimony in front of a court  
15 reporter, a court administrative  
16 agency?

17 MR. BERTONI: As an expert?

18 MR. FAUSEY: As an expert,  
19 yes.

20 THE WITNESS: As an expert,  
21 three.

22 BY MR. FAUSEY:

23 Q. Does that include the three  
24 times in Ohio?

1 A. Yes.

2 Q. Okay. So, outside of that,  
3 outside of the Ohio context, how many  
4 times have you provided expert  
5 testimony in front of a court  
6 reporter or hearing examiner?

7 A. I've testified to the  
8 Senate, but I don't know if that  
9 counts. Yeah.

10 Q. All right. There was some  
11 questioning about spoofing locations  
12 or your ability to --

13 A. Spoof IP addresses.

14 Q. -- replicate an Ohio IP  
15 address.

16 Do most users do that?

17 A. Most users do not do that.

18 Q. Is that something you would  
19 describe as sophisticated?

20 A. It requires the additional  
21 software to let users do that.

22 Q. And do you know whether  
23 that type of software was readily  
24 available during the time period of

1 this audit?

2 A. I don't know if -- I mean,  
3 surely VPN solutions were available  
4 during the time period, but I don't  
5 know how widely used they would be.

6 Q. You were also asked whether  
7 once you've manipulated your IP  
8 address to show Crutchfield that  
9 you're from Ohio, whether that's the  
10 only thing -- the only way they would  
11 know where you are.

12 Is that the only way they'd  
13 find out where you were?

14 A. So without additional --  
15 yes. So, from my understanding of  
16 their website, the only way they  
17 determine location that's not -- that  
18 doesn't constitute you disclosing it  
19 to them, say, in a shipping form or  
20 pre-selecting it, would be based on  
21 your IP address.

22 Q. And if you did disclose  
23 your shipping address to them, then  
24 they would be able to associate that

1 address with whatever other data

2 they've got about you?

3 A. That's right.

4 Q. There was some discussion  
5 about users request information from  
6 a server and servers respond with the  
7 information.

8 Do users ever get anything  
9 they didn't ask for?

10 MR. BERTONI: Objection.  
11 Ever?

12 BY MR. FAUSEY:

13 Q. Do users often get things  
14 that they didn't ask for?

15 MR. BERTONI: I'm not even  
16 sure what that means.

17 MR. FAUSEY: Okay.

18 BY MR. FAUSEY:

19 Q. So a user asks for  
20 Crutchfield's website, and they may  
21 receive the instructions to compose  
22 that website.

23 Do they ever receive  
24 anything along with those

1 instructions that maybe isn't,  
2 strictly speaking, necessary to  
3 compose the website?

4 A. Yes. They receive  
5 third-party JavaScript and other  
6 tags, pixels, other tracking elements  
7 that they may not have knowingly  
8 requested from the website.

9 Q. You were asked about the  
10 Figure -- I think it's 11 in your  
11 report.

12 A. Sure. This one  
13 (indicating)?

14 Q. Yeah.

15 And you testified on direct  
16 that that figure is derived from  
17 Exhibit 6 in the Tax Commissioner's  
18 documents?

19 A. Sure. Yes.

20 Q. And do you remember reading  
21 Mr. McCartney's deposition in this  
22 matter?

23 A. I do.

24 MR. BERTONI: Do you want

1 to first ask him a question and then  
2 see if he needs to have his  
3 recollection refreshed? I mean, I'm  
4 not sure.

5 MR. FAUSEY: Sure.

6 BY MR. FAUSEY:

7 Q. So you were asked whether  
8 this was just sample data or whether  
9 it's actual data provided to  
10 Crutchfield by Omniture.

11 MR. BERTONI: During the  
12 tax period.

13 BY MR. FAUSEY:

14 Q. During the tax period.  
15 Do you remember that  
16 question?

17 A. I do.

18 Q. Okay. And I guess I missed  
19 that portion of the question.

20 So the question was whether  
21 this was from the tax period at  
22 issue, not whether or not this is  
23 actual data.

24 MR. FAUSEY: Right?

1 MR. BERTONI: Correct.

2 BY MR. FAUSEY:

3 Q. So did you understand that  
4 when the question was asked?

5 A. One more time.

6 Q. So the question was not  
7 whether or not this was data actually  
8 provided by Omniture, but whether it  
9 was actually provided during the time  
10 period at issue.

11 Did you understand the  
12 question that way?

13 A. I didn't precisely, but I  
14 don't think it matters.

15 Q. Okay.

16 A. Right. So, my  
17 understanding is, this is the data  
18 that Omniture provides as part of  
19 their API. I would -- I didn't look  
20 at the dates of that file --

21 Q. Okay.

22 A. -- but it was part of  
23 the -- part of what they've offered  
24 to us. But I use it as a simple

1 example of how -- or the data  
2 available to -- to Crutchfield from  
3 Omniture.

4 Q. That makes sense.

5 A. And this screenshot is from  
6 10-3-2011, so it would be during the  
7 tax period.

8 Q. You were asked whether you  
9 had any information about behavioral  
10 data being used in marketing.

11 Do you recall that  
12 question?

13 A. Yes.

14 Q. Is remarketing a form of  
15 behavioral advertising?

16 A. Retargeting?

17 Q. Retargeting.

18 A. Some people would say so,  
19 yes.

20 Q. Would you say so?

21 A. I think so.

22 Q. Was there evidence that  
23 Crutchfield engaged in retargeting?

24 A. Yes, there was. Yeah.

1 Q. Okay. There was also a  
2 question about whether Crutchfield  
3 would customize a website with a  
4 person's name.

5 Do you know whether they  
6 customized anything else, perhaps,  
7 other than a person's name?

8 A. I don't recall anything  
9 specific. I thought there was, as  
10 I said, things related to the  
11 automobile that you own -- or that  
12 you disclosed and, perhaps, your  
13 location, if you disclosed it.

14 Q. You can touch a computer's  
15 hard drive, right?

16 A. I wouldn't advise it.

17 Q. But you could if you wanted  
18 to?

19 A. Yes, I could.

20 Q. And you can physically  
21 record on a computer's hard drive; is  
22 that correct?

23 MR. BERTONI: Objection.

24 What does physically record

1 mean?

2 BY MR. FAUSEY:

3 Q. So we've discussed the  
4 possibility that HTML code is  
5 potentially stored in cache. Is that  
6 correct?

7 A. That's right.

8 Q. And that JavaScript is most  
9 definitely recorded in cache?

10 A. That is correct.

11 Q. Does that code, when  
12 combined with software, enable  
13 something to happen that can engage  
14 the senses? Can you see and hear the  
15 result?

16 MR. BERTONI: Objection.

17 Now we're going well beyond  
18 the scope of my examination and into  
19 an area that you've explicitly said  
20 he doesn't have competence to testify  
21 to, the physical nature of reality.

22 If we want to go there,  
23 engagement of the senses, that's  
24 where I tried to go and you shut me

1 down.

2 MR. FAUSEY: No, no, no,  
3 no. The difference is people can see  
4 and hear things. You don't have to  
5 be an expert to see and hear, right?

6 MR. BERTONI: But then what  
7 is his testimony --

8 MR. FAUSEY: Hold on. But  
9 you do to talk about the weight of  
10 electrons. That's a whole different  
11 -- I'm talking about is there  
12 something recorded on the hard disc  
13 that results in something that you  
14 can see or hear. I think he's  
15 competent to see and hear.

16 MR. BERTONI: But that's  
17 precisely what I was asking him for.  
18 He's competent to tell --

19 MR. FAUSEY: It's not at  
20 all what you were asking for.

21 MR. BERTONI: He's  
22 competent to tell me whether  
23 something is physical or not.

24 MR. FAUSEY: Not at all.

1           MR. BERTONI: You shut him  
2 down on whether something's physical.  
3 I mean, I dare say that he's as  
4 competent to know whether this cup  
5 exists.

6           MR. FAUSEY: Are you  
7 serious about that? Look, we're  
8 talking about the weight of electrons  
9 and you're saying that's different  
10 than see and hear? I mean, come on.

11           MR. BERTONI: That's well  
12 beyond what he was -- what he's  
13 testified to. It's well beyond  
14 anything I asked about visual  
15 perception. This is re -- this is  
16 re --

17           MR. FAUSEY: That's fine.  
18 I'll ask when we have a fact witness  
19 whether they can see or hear the  
20 things that result from the --

21           MR. BERTONI: And that's  
22 fair.

23 BY MR. FAUSEY:

24 Q. Can you see and hear?

1           A.    This is engaging the  
2 senses.

3           Q.    All right.

4           A.    Right here, right here,  
5 this moment.

6                   MR. BERTONI:  This is  
7 reality.

8 BY MR. FAUSEY:

9           Q.    When you go to a website,  
10 can you see the website?

11                   MR. BERTONI:  Objection.

12                   MR. FAUSEY:  Okay.  No more  
13 questions.

14                   MR. BERTONI:  All right.  I  
15 have no questions.

16                           (Witness excused.)

17                           (The deposition concluded  
18 at 6:16 p.m.)

19

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1 WITNESS CERTIFICATION

2

3 I hereby certify that I  
4 have read the foregoing transcript of  
5 my deposition testimony, and that my  
6 answers to the questions propounded,  
7 with the attached corrections or  
8 changes, if any, are true and  
9 correct.

10

11

12

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13 DATE

ASHKAN SOLTANI

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17 PRINTED NAME

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19 File # 11270

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21 Crutchfield, Inc.

vs.

22 Joseph W. Testa

23

24

**CERTIFICATE OF SERVICE**

This is to certify that a true copy of the foregoing Joint Motion to Supplement the Record – Exhibit B was sent via the Court’s electronic filing system and by U.S. mail to counsel of record for Appellee Tax Commissioner, Daniel W. Fausey and Christine T. Mesirow, Assistant Attorneys General, State of Ohio, 30 East Broad Street, 25th Floor, Columbus, Ohio 43215–3428, on this 21st day of May, 2015.

s/ Edward J. Bernert  
Edward J. Bernert (0025808)  
One of the Attorneys for Appellant  
Crutchfield, Inc.