

In the Matter of:

LabMD, Inc.

May 23, 2014

Trial - Public &

Volume 4

Condensed Transcript with Word Index



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1 FEDERAL TRADE COMMISSION
 2 I N D E X
 3 IN RE LABMD, INC.
 4 TRIAL VOLUME 4
 5 PUBLIC AND [REDACTED]
 6 MAY 23, 2014

8 WITNESS:	DIRECT	CROSS	REDIRECT	RECROSS	VOIR
9 VAN DYKE		664	708		
10 JOHNSON	749	793	801		
11 SHIELDS	809	889	922	924	

12
 13
 14 EXHIBITS FOR ID IN EVID IN CAMERA STRICKEN/REJECTED
 15 CX
 16 (none)
 17
 18 RX
 19 Number529 708
 20
 21 JX
 22 (none)
 23
 24
 25

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1 UNITED STATES OF AMERICA
 2 FEDERAL TRADE COMMISSION

3 In the Matter of)
 4 LabMD, Inc., a corporation,) Docket No. 9357
 5 Respondent.)
 6 -----)

7 May 23, 2014
 8 9:31 a.m.
 9 TRIAL VOLUME 4
 10 PUBLIC AND [REDACTED]
 11
 12 BEFORE THE HONORABLE D. MICHAEL CHAPPELL
 13 Chief Administrative Law Judge
 14 Federal Trade Commission
 15 600 Pennsylvania Avenue, N.W.
 16 Washington, D.C.
 17
 18
 19 Reported by: Josett F. Whalen, Court Reporter
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1 PROCEEDINGS
 2 - - - - -
 3 JUDGE CHAPPELL: Let's go back on the record
 4 Docket 9357 as we start the very long day.
 5 I think we were in the middle of cross?
 6 MR. SHERMAN: That's correct, Your Honor.
 7 JUDGE CHAPPELL: Go ahead.
 8 MR. SHERMAN: Thank you, sir.
 9 - - - - -
 10 Whereupon --
 11 JIM VAN DYKE
 12 a witness, called for examination, having been
 13 previously duly sworn, was examined and testified
 14 further as follows:
 15 CROSS-EXAMINATION
 16 BY MR. SHERMAN:
 17 **Q. Good morning, Mr. Van Dyke.**
 18 A. Mr. Sherman.
 19 (Pause in the proceedings.)
 20 JUDGE CHAPPELL: All right.
 21 MR. SHERMAN: Thank you, Your Honor.
 22 BY MR. SHERMAN:
 23 **Q. Mr. Van Dyke, if you could turn to page 8 of**
 24 **your report, which is I believe where we were yesterday**
 25 **when we left off.**

1 **figure, how is that used with reference to either the**
 2 **1718 File or the day sheets? And let's start with the**
 3 **1718 File.**
 4 **Does the 30.5 percent figure have any relevance**
 5 **or relation to the 1718 File?**
 6 A. To set the lay of the land, it absolutely does.
 7 Now, we go on later in my expert report to take
 8 a more precise estimate of the amount of the degree of
 9 risk in quantitative terms represented by exposure of
 10 the 1718 Files.
 11 So the number is slightly different,
 12 deliberately, yet in figure 1 here, we're -- the primary
 13 purpose of this particular document was to show the
 14 rising correlation between notification of a data breach
 15 and individual incidents of identity fraud.
 16 **Q. Was there anything that you reviewed in the**
 17 **record that indicated to you that the individuals whose**
 18 **names appeared on the 1718 File were notified of a data**
 19 **breach?**
 20 A. No.
 21 **Q. And so the question then is, if the individuals**
 22 **whose names appeared on the 1718 File were not notified**
 23 **of a data breach, then how does the 30.5 percent figure**
 24 **apply or have any relevance to the 1718 File?**
 25 A. It has relevance to the 1718 File, that is, the

1 **Are you there, sir?**
 2 A. I am.
 3 **Q. So, Mr. Van Dyke, we were talking about**
 4 **figure 1, and we were looking at the 30.5 percent figure**
 5 **represented in the red bars in figure 1, and we were**
 6 **talking about -- I think the phrase you used was**
 7 **"cross-tabulation"?**
 8 A. That's correct.
 9 **Q. Okay. And what factors or facts were you**
 10 **cross-tabulating to arrive at the 30.5 percent figure?**
 11 A. So that 30.5 percent figure is the result of a
 12 cross-tabulation or the intersection of two questions.
 13 And in summary, those -- the first of the two questions
 14 asks individuals if they have been notified of a data
 15 breach, in this case in the previous twelve-month
 16 period.
 17 Secondly, in summary, or there's a question that
 18 asks individuals if they have been the victim of
 19 identity theft or what we've been calling identity fraud
 20 committed in their name in the past twelve months.
 21 **Q. And so those were the two factors**
 22 **cross-tabulated and therefore represented in the**
 23 **30.5 percent figure?**
 24 A. That's correct.
 25 **Q. So is the -- when we talk about the 30.5 percent**

1 30.5 percent figure, because in the case of the field
 2 of study on identity fraud, I use notification of a
 3 data breach as the marker for exposure to a data
 4 breach. And there's a very deliberate reason for that.
 5 We are dealing with a crime in which the
 6 perpetrator will deliberately conceal as much as they
 7 can in order to be successful in making individuals
 8 victims of fraud.
 9 JUDGE CHAPPELL: Hold on a second.
 10 (Pause in the proceedings.)
 11 Go ahead.
 12 MR. SHERMAN: Thank you, Your Honor.
 13 BY MR. SHERMAN:
 14 **Q. I still don't understand how the 30.5 percent**
 15 **figure relates to those individuals whose names appear**
 16 **on the 1718 File when those individuals were never**
 17 **notified of a data breach.**
 18 A. Perhaps I could have explained that more
 19 clearly.
 20 For identity fraud to be successfully
 21 perpetrated by a criminal, there are two things that
 22 have to happen, and we are measuring those two things
 23 through every reliable method possible.
 24 The first thing or act is unauthorized exposure
 25 of PII. We have to get a reliable way of indicating

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1 that that has happened.
 2 Secondly, that fraud has happened in that same
 3 individual's name, unauthorized transactions, that is.
 4 So in calculating that 30.5 percent, we, in my
 5 research, relied on a reliable method available to us,
 6 which is asking individuals if they've been notified of
 7 a data breach, so we knew that the data had been
 8 exposed in that case, thing number one as I was
 9 referring to it.
 10 And the item -- the second category of the act
 11 or thing, as I'm referring to it, was the unauthorized
 12 transaction that that same individual experienced.
 13 So in my research, we asked these same
 14 individuals if they had experienced both things, the
 15 data breach and the fraud. And what we found in our
 16 calculation -- and I'll loop this back to the 1718 File
 17 you asked about in just a moment -- but in the case of
 18 my research, by asking people both of those questions,
 19 the same individuals both questions, we were able to
 20 divide the result of one question by the result of
 21 another question to conclude that 30.5 percent of people
 22 who had been notified of a data breach had identity
 23 theft committed in their name.
 24 That relates to the 1718 File because we know
 25 that the 1718 File, from the testimony of Mr. Boback,

1 **Q. Please do. Well, show me where it is in your**
 2 **report, the slightly different figure using those two**
 3 **factors and applying them to the individuals and the**
 4 **information found on the 1718 File.**
 5 A. That is found on the bottom of page 11 in the
 6 three bullets at the very bottom of the page where we,
 7 rather than list that as an aggregate figure, the
 8 30.5 percent, since that 30.5 is made up of three
 9 individual types of identity fraud -- we could have
 10 broken it out by type, just didn't want to make that
 11 chart that has so much information too complicated --
 12 on the bottom of page 11, in answer to your question,
 13 we show the individual components that make up, if
 14 added together, the comparable figure for just those
 15 individuals who had their Social Security number, SSN,
 16 exposed. And that would be 7.1 percent plus
 17 7.1 percent plus 13.1 percent, in other words,
 18 27.3 percent.
 19 **Q. So if you add all of those percentages**
 20 **together, you get 27.3 percent, which you're saying is**
 21 **very close to your 30.5 percent figure; correct?**
 22 A. That's correct.
 23 **Q. And you come up with that figure based on your**
 24 **calculations in figure 1; is that right?**
 25 A. I wouldn't quite word it that way.

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1 that it was found in four places where it didn't
 2 belong, so that's the indicator of the first thing,
 3 exposure of the data. And I use that to make an
 4 estimate, a projection -- pardon me -- of the amount of
 5 harm that those people who have had their data exposed
 6 in an unauthorized way are likely to encounter.
 7 **Q. So is it your conclusion that 30.5 percent of**
 8 **the individuals whose names appear on the 1718 File will**
 9 **or should experience identity fraud?**
 10 A. It is close to that, so generally speaking,
 11 yes, however, with an important qualification.
 12 I use every opportunity I can to be as precise
 13 as I can, so when I have more facts, such as in this
 14 case I know exactly what information was exposed by
 15 looking at the 1718 File that you're asking about, I
 16 can see that there were Social Security numbers, a
 17 particularly important record, exposed there.
 18 By using my data to calculate the rate of fraud
 19 experienced by people who have had their
 20 Social Security number exposed, I come up with a very
 21 similar but slightly different figure than the
 22 30.5 percent.
 23 **Q. What is that figure?**
 24 A. That figure is -- and if you like, I can show
 25 you where it's contained.

1 **Q. Yeah, help me out. I went into law because I**
 2 **don't like math.**
 3 A. I'm sorry. Could you repeat what you just said.
 4 I was flipping pages.
 5 **Q. Just help me out as to how you came to the**
 6 **27.3 as a -- I think what you're saying, as a variable**
 7 **or a variation on the 30.5 percent.**
 8 JUDGE CHAPPELL: Although, in defense of people
 9 who like numbers, a number of legal fields require
 10 math.
 11 MR. SHERMAN: That's why I'm standing before
 12 you today, Judge.
 13 THE WITNESS: So in answer to your question,
 14 it's the exact same process. The process is identical.
 15 It's just in the case of the figure shown on -- let me
 16 restate that, please.
 17 On page 8, the primary purpose of that image,
 18 which shows a lot of different things, but it -- it is
 19 intended to show the rising correlation over time of
 20 data breach to identity fraud, that one is likely and
 21 increasingly likely over the four years shown, one is
 22 more likely to be correlated to the other.
 23 The -- on page -- the figures shown on the
 24 bottom of page 11 are used in identical way, but we are
 25 able to take a more -- to apply a more precise use of

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1 those figures because I can examine the facts in
 2 specific to the exposure of the 1718 File as well as the
 3 day sheets, which is the exposure of SSNs.
 4 **Q. Well, I'm still a little confused, but maybe you**
 5 **can help me.**
 6 **In figure 1, the question Q2 below it says, "In**
 7 **the last 12 months, have you been notified by a**
 8 **business," and I'll just stop there.**
 9 **Is the fact that they were notified part of the**
 10 **calculation?**
 11 A. The notification is a part of the calculation,
 12 yes.
 13 **Q. Okay. And then you go to page 11. Number 4**
 14 **says, "Calculations of the expected fraud impact of the**
 15 **unauthorized exposure of the 'Insurance Aging Report'**
 16 **and 'Day Sheets' by LabMD were made using the following**
 17 **data."**
 18 **But isn't it true that those whose names appear**
 19 **on the 1718 File never received any notification?**
 20 A. To my knowledge, that is true, correct.
 21 **Q. So is that some type of cross-tabulation again**
 22 **where you can put those who didn't receive notification**
 23 **with those who did receive notification and come up with**
 24 **basically the same number?**
 25 A. Well -- no, it's not. Cross-tabulation is just

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1 a universally accepted method among researchers for
 2 comparing two populations, people who have experienced
 3 two things. However, it is the same thing. We are
 4 measuring people -- the relationship between people who
 5 experience two things, who did or didn't.
 6 Those two things, as shown on the bottom of
 7 page 11, you know, the rates shown on the bottom of
 8 page 11 and the figures shown on page 8, are the same
 9 thing. It's those two acts which are necessary for an
 10 individual to be victimized by identity fraud. Number
 11 one, their information must be exposed in an
 12 unauthorized way, their PII must be exposed. And number
 13 two, an unauthorized transaction must occur.
 14 We're measuring it differently -- I'm sorry.
 15 We're not measuring it differently at all. We are
 16 looking at notification as a marker of it in one case.
 17 In another case, in the 1718 File, we know that that
 18 information was exposed.
 19 JUDGE CHAPPELL: What's the difference in
 20 cross-tabulation and extrapolation?
 21 THE WITNESS: Yeah, those are different things.
 22 So extrapolation is a process of reaching a
 23 conclusion, and so it might include just logic or just a
 24 wide variety of methods. But cross-tabulation is a
 25 statistician's method of precisely comparing, taking a

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1 subset of another, essentially doing division.
 2 JUDGE CHAPPELL: Which is more accurate?
 3 THE WITNESS: A cross-tabulation would be more
 4 accurate, Your Honor.
 5 BY MR. SHERMAN:
 6 **Q. But you're not a statistician; correct?**
 7 A. I'm not personally a statistician, no.
 8 **Q. You have statisticians that work at Javelin who**
 9 **do this kind of cross-tabulation that you're talking**
 10 **about; correct?**
 11 A. That is correct, yes.
 12 **Q. But you would agree that there was some**
 13 **extrapolation that was also done here by extrapolating**
 14 **the results of the survey and comparing them to the**
 15 **number of individuals who appear in the 1718 File and**
 16 **the day sheets; correct?**
 17 A. I actually am not comfortable making that
 18 agreement because the word "extrapolation" is used in
 19 such a broad sense, and yet we can clearly know that
 20 these individuals that we are measuring in the case of
 21 figure 1 were notified of a breach, and we're making a
 22 comparison to a population, in the case of the
 23 1718 Files, to individuals who were known to have their
 24 information exposed. I'd say that is the same thing.
 25 **Q. But the cross-tabulation actually occurred**

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1 **within the information that you gathered as a result of**
 2 **the survey; correct?**
 3 A. I'm sorry. Could you repeat that question,
 4 please.
 5 **Q. The cross-tabulation occurred using the**
 6 **information that you gathered as a result of the survey,**
 7 **so there was cross-tabulation of the information**
 8 **gathered in the survey; correct?**
 9 A. Yeah. For figure 1?
 10 **Q. Yes.**
 11 A. Yes, that is correct.
 12 **Q. But there was not cross-tabulation of the**
 13 **information gathered in the survey and cross-tabulation**
 14 **of the information that appears on the 1718 File and the**
 15 **day sheets; correct?**
 16 A. Could I ask you to restate that, please.
 17 **Q. Did you cross-tabulate the information from the**
 18 **survey with the information gleaned from the 1718 and**
 19 **the day sheets?**
 20 A. Yes. In the sense that we used the same
 21 cross-tabulation process.
 22 **Q. I'm not talking about the process.**
 23 **Did you cross-tabulate the information you**
 24 **received from results of the survey with the information**
 25 **contained in the 1718 File and the day sheets?**

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1 A. Yes, we did.
 2 **Q. How?**
 3 A. So I took -- so essentially built a model.
 4 **Q. I'm sorry. I didn't understand.**
 5 A. Sorry.
 6 So I essentially -- I might have backed up
 7 there.
 8 I essentially took a model, a statistical model,
 9 based on our nationally representative survey, the
 10 5600 people, where I can know that, you know, the
 11 rate -- and this is where the cross-tabulation comes
 12 in -- I can know the rate of individuals whose
 13 Social Security number has been exposed, the rate of
 14 fraud within that group. That's the model, if you will,
 15 the cross-tabulation process comes from.
 16 So I'm essentially overlaying that model on
 17 those individuals within the 1718 File to say that there
 18 will be a 27.3 percent incidence of fraud, and yes,
 19 that's a cross-tabulation process.
 20 **Q. Okay. So to me, that sounds like**
 21 **extrapolation.**
 22 **You cross-tabulated the information in the**
 23 **survey, you took those results and you overlaid them on**
 24 **the information from the 1718 File and the day sheets;**
 25 **correct?**

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1 A. That's correct.
 2 **Q. Okay. Thank you.**
 3 JUDGE CHAPPELL: Along those lines, I thought I
 4 heard you say yesterday that cross-tabulation was
 5 people who live in Washington I guess and work and
 6 people who live and Washington and like I believe you
 7 said apple pie. Those would have been people, both
 8 people, groups of people who were actually surveyed.
 9 I thought that's how you defined it. But in
 10 this case I thought I heard you say nobody was actually
 11 surveyed regarding the 1718 File. Is that correct?
 12 THE WITNESS: Yes, that is correct, Your Honor.
 13 JUDGE CHAPPELL: So in the purest sense, you're
 14 saying that was still cross-tabulation, even though no
 15 one was surveyed from the 1718 File.
 16 THE WITNESS: Yes, Your Honor, no one was
 17 surveyed from the 1718 File.
 18 So the -- and I'm attempting to fit the -- help
 19 Mr. Sherman with -- in response to his questions about
 20 how the cross-tabulation process applies to the
 21 1718 File, so it is correct that we did not survey
 22 anybody --
 23 JUDGE CHAPPELL: Well, the 1718 File is what
 24 we're concerned with.
 25 THE WITNESS: I'm sorry. Could you repeat

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1 that.
 2 JUDGE CHAPPELL: I said, the 1718 File is what
 3 we're concerned with in here.
 4 THE WITNESS: That's correct, Your Honor.
 5 BY MR. SHERMAN:
 6 **Q. Let's turn to page 6 of your report.**
 7 **If you read under D at the top of the page, the**
 8 **second sentence says, "Data breaches represent a serious**
 9 **threat to the integrity of a consumer's identity, as**
 10 **consumers whose PII was compromised in a data breach are**
 11 **significantly more likely to suffer identity fraud than**
 12 **those consumers who did not have their PII compromised**
 13 **in a data breach."**
 14 **Did I read that correctly?**
 15 A. Yes, you did.
 16 **Q. Did you assume that the 1718 File and the day**
 17 **sheets were found outside of LabMD as a result of a data**
 18 **breach?**
 19 MS. VANDRUFF: Objection, Your Honor. This has
 20 been asked and answered. He was asked precisely this
 21 question yesterday, Your Honor.
 22 JUDGE CHAPPELL: Did you say yesterday?
 23 MS. VANDRUFF: Yes, Your Honor.
 24 JUDGE CHAPPELL: I'm not going to be concerned
 25 about yesterday. That's overruled.

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1 MS. VANDRUFF: It was asked in Mr. Sherman's
 2 cross-examination, but I understand your ruling,
 3 Your Honor. Thank you.
 4 JUDGE CHAPPELL: But you said yesterday.
 5 MS. VANDRUFF: Yes, Your Honor. Yesterday in
 6 Mr. Sherman's cross-examination.
 7 JUDGE CHAPPELL: I'm not concerned about hearing
 8 the answer again so I can follow the witness.
 9 MS. VANDRUFF: I understand, Your Honor.
 10 Thank you.
 11 BY MR. SHERMAN:
 12 **Q. I'll go back for you.**
 13 A. Thank you.
 14 MR. SHERMAN: Could you read that last question
 15 for me, please. Thank you.
 16 (The record was read as follows:)
 17 "QUESTION: Did you assume that the 1718 File
 18 and the day sheets were found outside of LabMD as a
 19 result of a data breach?"
 20 THE WITNESS: Yes, I did.
 21 BY MR. SHERMAN:
 22 **Q. So if we go back then to page 11, we had talked**
 23 **about this before, but let's go into it a little more**
 24 **specifically.**
 25 **You indicate that the first bullet point is**

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1 those who suffered NAF, which is new account fraud,
 2 within the last twelve months, 7.1 percent; is that
 3 correct? Did I read that correctly?
 4 A. Yes, you did.
 5 Q. Is that the rate of new account fraud that was
 6 experienced by the individuals who answered your
 7 survey?
 8 A. I'll need to --
 9 Q. And let me withdraw that question.
 10 A. Okay.
 11 Q. I think I know where you're having the problem
 12 since we've had this conversation before.
 13 Does that 7.1 percent represent the rate at
 14 which individuals who answered yes to
 15 question 2 experienced new account fraud?
 16 A. Yes. That's the cross-tabulation part.
 17 Q. And so the 7.1 percent in the second bullet
 18 point represents the rate at which individuals who
 19 answered yes to number 2 on your survey experienced
 20 existing non-card fraud; correct?
 21 A. That is correct.
 22 And if I may, I'd just like to point out, that
 23 is an additional 7.1 percent. It just happens to be the
 24 same number.
 25 Q. So are you telling me that of the people who

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1 answered yes to question 2 on your survey, that none of
 2 them experienced more than one type of identity fraud?
 3 A. No, I'm not saying that.
 4 Q. So it's not really an additional 7.1 percent;
 5 it is just that there's a 7.1 percent rate at which
 6 those individuals experienced existing non-credit card
 7 fraud.
 8 A. Right. I didn't mean to confuse you with my
 9 attempt for add clarity. I just -- one might often look
 10 at two identical numbers, which is unusual, and think
 11 we're talking about the same thing. It's a separate
 12 population.
 13 Q. And so based on that answer, it's possible that
 14 an individual who answered yes to question 2 on your
 15 survey could have experienced new account fraud,
 16 existing credit card fraud or any combination of the
 17 frauds listed on page 4 of your report; correct?
 18 I'm sorry. Page 11. Forgive me.
 19 A. Oh. Yes.
 20 Q. So if we turn to page 12 of your report then, we
 21 see at the top small (b) says "The number of records
 22 compromised in the 'Insurance Aging Report'
 23 (9300 Social Security numbers) and 'Day Sheets'
 24 (600 Social Security numbers)" and then below that
 25 there's figure 2 and figure 3; is that correct?

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1 A. That is correct.
 2 Q. And so figure 2 focuses in on the impact from
 3 the day sheets and figure 3 focuses in on the impact of
 4 the insurance aging report; correct?
 5 A. Yes.
 6 Q. And I think you testified yesterday that you
 7 simply applied the percentages that appear on page 11 of
 8 your report, the 7.1 percent, the 7.1 percent and the
 9 13.1 percent, to the number of individuals who appear
 10 on the day sheets -- whose Social Security numbers --
 11 I'm sorry -- appear on the day sheets and the number of
 12 individuals whose Social Security numbers appear on the
 13 1718 File; is that correct?
 14 A. Yes. That was my process.
 15 Q. And so with relation to the day sheets, you
 16 indicate that there should be a rate of 79 cases of
 17 existing card fraud; correct?
 18 A. I project the total to be 79 based on the rate
 19 of 13.1 percent of those 600 people. That is my
 20 projected rate of fraud incidence, which if you do the
 21 math, it comes out to 79, yes.
 22 Q. And you go down to existing non-card fraud and
 23 you come up with the number of cases as 43 using the
 24 7.1 percent; correct?
 25 A. Yes. 700 times 7.1 percent will equal 43, that

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1 is correct.
 2 Q. And so if we go down to the insurance aging
 3 report, the numbers are bigger because there are more
 4 people on the insurance aging report; correct?
 5 A. That's correct. The 9300 total population of
 6 SSNs exposed.
 7 Q. Is there any indication as to when this is
 8 supposed to occur?
 9 A. I'm -- could you clarify your question, please.
 10 Q. Well, you testified yesterday that the persons
 11 who answered yes to question 2 on your survey that they
 12 had been identified -- I'm sorry -- they had been
 13 notified by a business or other institution that their
 14 personal or financial information has been lost, stolen,
 15 or compromised in a data breach also experienced some
 16 type of identity fraud within twelve months of answering
 17 yes to that question; correct?
 18 A. That is correct.
 19 MS. VANDRUFF: Your Honor, I think that
 20 mischaracterizes Mr. --
 21 JUDGE CHAPPELL: Hold on a second. The witness
 22 was asked if he said that, the witness said yes, so I
 23 don't want you to stand up and say what he said. He
 24 answered the question yes.
 25 Overruled.

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1 MS. VANDRUFF: Thank you, Your Honor.
 2 JUDGE CHAPPELL: That's why we have redirect.
 3 MS. VANDRUFF: Thank you, Your Honor.
 4 JUDGE CHAPPELL: Because I consider that to be a
 5 form of coaching. I'm not saying you're doing that, but
 6 I will not allow that in this courtroom.
 7 MS. VANDRUFF: I understand, Your Honor.
 8 Thank you.
 9 BY MR. SHERMAN:
 10 **Q. I think your answer was yes to that question,**
 11 **so obviously there is a temporal, time-based**
 12 **component --**
 13 JUDGE CHAPPELL: And let me be clear. If this
 14 was a lay witness, I wouldn't be as strict. But that's
 15 an expert who's paid by the hour by the taxpayers of the
 16 United States. I think he can handle this.
 17 MS. VANDRUFF: I understand, Your Honor.
 18 Thank you.
 19 BY MR. SHERMAN:
 20 **Q. There's a temporal component to question 2 and**
 21 **a temporal result, based on your testimony. And what I**
 22 **mean to say is that within twelve months of answering**
 23 **yes to the question, they also had experienced some type**
 24 **of identity fraud within that same twelve-month period;**
 25 **correct?**

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1 A. I'll need to answer with a bit of precision to
 2 qualify your question if I may.
 3 **Q. Please do.**
 4 A. There is a temporal measurement in that these
 5 figures on figure 2 and 3 that you're asking about show
 6 an impact within a twelve-month period because, if I'm
 7 following your question most accurately, as you said,
 8 this is the result of two questions, one about asking
 9 individuals if their information has been exposed in the
 10 past twelve months, another asking individuals if they
 11 have experienced fraud in the past twelve months, so we
 12 then cross-tabulate the results of those two questions
 13 to state this will be the expected fraud loss within a
 14 twelve-month period.
 15 And I'd like to further qualify that because
 16 we're using a lot of -- I just want to make sure I add
 17 the greatest degree of precision in my responses since
 18 that is the result of how we field and analyze our -- my
 19 research, that I'm -- so I'm referring to -- I believe I
 20 said the word "fraud loss." And when I said "fraud
 21 loss," I was referring to the fraud amount, consumer
 22 cost and resolution hours.
 23 **Q. Within twelve months of what?**
 24 A. It's actually -- and I'm referring to a --
 25 within a twelve-month period, is the most accurate way

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1 for me to state that.
 2 **Q. So wouldn't it be within twelve months of**
 3 **answering yes to question 2?**
 4 A. No. The most precise answer to that is no.
 5 It's within a twelve-month period, but -- but yes in
 6 the sense of -- and we're extending the results of a
 7 survey question to real-life examples here. That's why
 8 I'm working so hard to be precise in my response.
 9 So yes, past history, twelve months of the time
 10 the person had answered our or had taken our survey.
 11 **Q. So how does that apply to those individuals**
 12 **whose names appear on the day sheets and the 1718 File**
 13 **with respect to their Social Security numbers being I**
 14 **guess subject to some unauthorized disclosure? Should**
 15 **this rate occur within twelve months of what?**
 16 A. It would be most accurate for me to say that
 17 if -- as we're taking the results of my study on the --
 18 that correlates identity fraud and data breach
 19 exposure -- to data breach exposure -- pardon me --
 20 that we want to here find the quantity of people who
 21 have had their SSN exposed and do a projection of the
 22 rate of fraud on a twelve-month basis.
 23 I don't know if I'm helping you with that, but
 24 I'm trying to explain how we extend the results of my
 25 research.

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1 We essentially have a twelve-month period in
 2 which I had the opportunity to ask 5,634 people have
 3 you been notified of a breach, have you experienced
 4 fraud, take the proportion of people who's actually had
 5 that data breach involve an SSN, compare the results of
 6 the two. That's a cross-tabulation.
 7 I'm counting those individuals who had
 8 experienced both and calculating the rate of actual
 9 fraud.
 10 And then in answer to your question, I am --
 11 and I believe you qualified your answer -- your
 12 question, Mr. Sherman, to refer to the 1718 File just
 13 now I think?
 14 So in that case, I'm saying yes, within a
 15 twelve-month period that most closely anchors around
 16 when that 1718 File was known to be exposed, those
 17 individuals, as shown in figure 2 and 3, will experience
 18 the amount of fraud, the consumer cost and the
 19 resolution hours shown.
 20 JUDGE CHAPPELL: In an attempt to move this
 21 along, did I understand you to say a twelve-month period
 22 but not necessarily the next twelve months?
 23 THE WITNESS: Yes, sir, that is the case.
 24 BY MR. SHERMAN:
 25 **Q. So the people who appear -- whose names appear**

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1 on the 1718 File, they should experience some type of
2 identity fraud during a twelve-month period at the rate
3 of 7.1 percent; right?

4 A. That's not actually quite accurate. What we
5 discussed earlier was that -- I believe you just said
6 7.1 percent. That would apply specifically to both
7 there under figure 3, the existing -- existing non-card
8 fraud, 7.1 percent of the 9300 people will, in my
9 projection, experience that type of fraud, existing
10 non-card fraud. Another 7.1 percent will experience, in
11 my projection model here, new account fraud. And
12 another 13.1 percent of that 9300 will experience
13 existing card fraud.

14 Q. In a twelve-month period beginning when or
15 ending when or just it's just some random twelve-month
16 period?

17 A. It's certainly not random, no.

18 Q. So when?

19 A. Well, within a twelve-month period.

20 Q. A twelve-month period of what? Answering the
21 survey?

22 A. Well, the people in the 90 -- I'm sorry -- the
23 1718 File file, those 9300 people --

24 Q. They didn't answer --

25 A. -- they did not have the opportunity nor did we

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1 have the opportunity to give them the survey question.

2 Q. So when -- let me give you a fact. Okay? And
3 if this is not your understanding based on the review of
4 the record, let me know.

5 The 1718 File was allegedly found on a
6 peer-to-peer network in February of 2008.

7 Would you consider that an unauthorized
8 disclosure?

9 A. Yes.

10 Q. So based on your definition of a data breach,
11 that unauthorized disclosure is a data breach; correct?

12 A. Yes.

13 Q. And so if the data breach occurred in February
14 of 2008, when, based on your projections and your
15 cross-tabulation and what I term to be your
16 extrapolation, when would these individuals whose names
17 appear on the 1718 File experience identity fraud at the
18 rate listed in your report?

19 A. Are you asking me to project a specific date
20 that fraud will occur? I'm not clear on what's being
21 asked.

22 Q. You said within a twelve-month period. Is it
23 within a twelve-month period of when the unauthorized
24 disclosure occurred? Is it within a twelve-month period
25 of taking the survey? I mean, it's within a

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1 twelve-month period of what?

2 A. Well, what we know is that the 9300 people in
3 the insurance aging report did not take our survey, so
4 I'm a bit confused by your question. Could I ask you to
5 restate it, please.

6 Q. When?

7 JUDGE CHAPPELL: I think he's asking you to
8 cross-tabulate.

9 BY MR. SHERMAN:

10 Q. When are they going to experience identity fraud
11 at 7.1 percent rate for existing credit card fraud? I
12 think that's one of the rates that apply to that. Let
13 me make sure.

14 JUDGE CHAPPELL: I think you could ask him, sir,
15 isn't it true that he can't tell you when the time
16 period would start, and I think that would move it
17 along. I'm not telling you what to do, but we seem to
18 be going in circles here. I don't know if he doesn't
19 want to concede that or --

20 MR. SHERMAN: I am trying to get to a point, and
21 I'm not trying to badger the witness at all, but I'll
22 try to rephrase the judge's question.

23 BY MR. SHERMAN:

24 Q. Can you tell me when, when, the people whose
25 Social Security numbers appear on the 1718 File would

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1 experience existing credit card fraud?

2 A. Yeah. My reason for hesitation or struggle to
3 answer your question is, I can't pick out a date. But
4 what I can say is, they will experience it within a
5 twelve-month period from --

6 Q. That's true of anything.

7 JUDGE CHAPPELL: Hold on a second.
8 From what?

9 THE WITNESS: May I ask you, please, to -- I
10 lost my train of thought there. Could I ask you to --
11 would it be possible to just read back what I was
12 saying?

13 (The record was read as follows:)

14 "ANSWER: Yeah. My reason for hesitation or
15 struggle to answer your question is, I can't pick out a
16 date. But what I can say is, they will experience it
17 within a twelve-month period from -- "

18 THE WITNESS: So from the time, continuing that
19 response, if I may, that we know that the individuals
20 have had their information exposed within a breach, we
21 can calculate that sometime within that twelve-month
22 period they can -- we can project they will have -- they
23 will experience fraud at the rate shown and in the
24 amount of consumer cost and resolution hours shown at
25 the twelve-month rate.

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1 I can't give you a specific date, so that's why
 2 I'm working so hard to be precise. But I can tell you
 3 sometime within that twelve-month I can project those --
 4 that would be the rate of fraud.
 5 BY MR. SHERMAN:
 6 **Q. So if the information contained on the 1718 File**
 7 **was exposed in February of 2008, then sometime between**
 8 **February of 2008 and February of 2009, 7.1 percent of**
 9 **those individuals should have experienced existing**
 10 **non-card fraud.**
 11 A. That would be my projection, yes.
 12 **Q. Okay. And if the evidence is that none of those**
 13 **individuals experienced existing non-card fraud during**
 14 **that period of time, is there -- I mean, how would you**
 15 **explain that or could you explain it?**
 16 A. I actually couldn't give you a response to that
 17 because what I'm solely relying on is, you know, the
 18 ten years of surveying these populations. Now we're
 19 over 5,000 people.
 20 You know, we know fraud is roughly a
 21 \$20 billion problem each year in the U.S. and we know
 22 there's a significant correlation and a rising
 23 correlation between individuals who have reported their
 24 information has been exposed in a breach and
 25 individuals who have been exposed to identity theft or

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1 identity fraud.
 2 So I'm not really in a position to say -- to
 3 somehow apply that in reverse. The research, I'm sorry,
 4 just wasn't designed to be used in that way and I -- I
 5 couldn't in good conscience respond to that.
 6 **Q. Let's turn to, well, the bottom of page 12 of**
 7 **your report.**
 8 **You state that "It is my opinion that all of**
 9 **this information is of value in the commission of fraud.**
 10 **While LabMD is known to have disclosed without**
 11 **authorization the information in the 'Insurance Aging**
 12 **Report' and 'Day Sheets', LabMD's failure to provide**
 13 **reasonable and appropriate security for the PII it**
 14 **maintains on its computer networks risked exposing**
 15 **750,000 consumers to a likelihood of a wide variety of**
 16 **identity frauds, including NAF, ENCF, ECF, and medical**
 17 **identity fraud."**
 18 **Did I read that correctly?**
 19 A. Yes, you did.
 20 **Q. How did you arrive at that conclusion?**
 21 A. Which -- so since I had a rather long sentence
 22 there, would you like me to go through point by point
 23 and tell you how -- because I'm stating a number of
 24 positions inside of that or -- or is there a specific
 25 part of that question that you'd like me to -- to

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1 address?
 2 JUDGE CHAPPELL: Hang on a second.
 3 The question said, "How did you arrive at that
 4 conclusion?"
 5 Are you saying that you have more than one
 6 conclusion there?
 7 THE WITNESS: No. Your Honor, I'm stating a --
 8 I'm building on a number of points that are -- that I've
 9 found to be the case or in one instance assumed to be
 10 the case, and I'm just trying to make certain I'm
 11 understanding which part you'd like me to respond to
 12 because I had a number of elements in that rather
 13 lengthy sentence I listed there.
 14 BY MR. SHERMAN:
 15 **Q. I just want to know how -- well, let me break it**
 16 **down then. Okay?**
 17 **How do the numbers in your report -- I'm sorry.**
 18 **How do the results of your survey lead you to**
 19 **this conclusion?**
 20 A. So this -- so, Mr. Sherman, your -- my
 21 conclusion that LabMD's failure to provide reasonable
 22 and appropriate security, et cetera, et cetera, risked
 23 exposing 750,000 consumers -- I think that's what you're
 24 asking about -- to a likelihood of a wide variety of
 25 identity frauds, including the types listed?

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1 **Q. Let me ask you this.**
 2 **I think it's already been established that you**
 3 **assumed that LabMD failed to provide reasonable and**
 4 **appropriate security for the PII it maintains on its**
 5 **networks.**
 6 **You were told to assume that; is that correct?**
 7 A. That is correct, yes.
 8 **Q. Okay. And apparently you were also told that or**
 9 **through your review of the record that LabMD maintained**
 10 **PII of 750,000 consumers on its computer network;**
 11 **correct?**
 12 A. Yes.
 13 **Q. And so you reasoned, I suspect, that based on**
 14 **the assumption that LabMD failed to provide reasonable**
 15 **and appropriate security for that PII for**
 16 **750,000 persons, that that failure exposed those**
 17 **persons to NAF, ENCF, ECF and medical identity fraud;**
 18 **correct?**
 19 A. Yes, that is correct.
 20 **Q. And that was just -- that was the basis of your**
 21 **conclusion that, hey, I'm told to assume that they**
 22 **failed to provide adequate security, and based on that**
 23 **failure, all individuals whose information is maintained**
 24 **on that network are exposed to these types of identity**
 25 **fraud or have the risk of experiencing this type of**

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1 **identity fraud.**
 2 A. Yes, that is correct.
 3 **Q. Okay. And you just then extrapolated the**
 4 **results of your survey, and you predict that -- do you**
 5 **predict that the 750,000 people whose information is**
 6 **contained on LabMD's network will experience these**
 7 **types of frauds at the same rate as those people**
 8 **experienced it answering yes to question number 2 in**
 9 **your survey?**
 10 A. No. I actually don't use any rate whatsoever
 11 with regard to the 750,000. It's just I purely state
 12 what is in the question you're asking about, that the
 13 750,000 consumers are at risk of exposure to a likely --
 14 to a likelihood of a wide variety of frauds. I don't
 15 project it with a specific number.
 16 And the same goes for medical identity fraud as
 17 well.
 18 **Q. So you just said, Hey, they failed to provide**
 19 **adequate security, so anybody whose information is on**
 20 **that network has a risk of exposure.**
 21 A. Yes. I believe that's a very safe position.
 22 **Q. Okay. And you did no independent analysis of**
 23 **LabMD's network security; you assumed, based on what you**
 24 **were told to assume.**
 25 A. That is correct.

1 Your Honor.
 2 What's up on the screen is not subject to
 3 in camera treatment. Briefly a document that is was
 4 shown, but very briefly, and when I made a request,
 5 respondent's counsel pulled it down immediately.
 6 JUDGE CHAPPELL: So this document is fine.
 7 MS. VANDRUFF: Yes, Your Honor, the document on
 8 the screen is fine.
 9 JUDGE CHAPPELL: This chart has been up for
 10 eight hours or more.
 11 MS. VANDRUFF: Exactly.
 12 JUDGE CHAPPELL: So you're talking about what
 13 flashed on the screen.
 14 MR. SHERMAN: Yes, sir.
 15 JUDGE CHAPPELL: All right. So --
 16 MR. SHERMAN: We need to -- I'm requesting that
 17 we go to in camera session so --
 18 JUDGE CHAPPELL: For that document?
 19 MR. SHERMAN: -- we can quickly talk about it.
 20 JUDGE CHAPPELL: All right. At this time we'll
 21 go into in camera session. I need to ask those who are
 22 not subject to the protective order in this case to
 23 leave the courtroom.
 24 MS. VANDRUFF: And Your Honor, just for the
 25 benefit of the record, while other in camera materials

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1 **Q. There's only one more area I want to go to now.**
 2 **Let's go back to page 8.**
 3 **The results in figure 1 for 2013 are based on**
 4 **the answers to the survey from 2013; correct?**
 5 A. Yes.
 6 **Q. And is it your testimony that**
 7 **question 2 underneath figure 1 was asked in the**
 8 **2013 survey?**
 9 A. Yes. By design, a question that is generally
 10 represented by what's shown on Q2 in the lower left
 11 there, yes.
 12 **Q. Can we pull up the 2013 survey?**
 13 MS. VANDRUFF: I'm sorry. Excuse me, Counsel.
 14 That, you know, it -- can we pull that down, please.
 15 Thank you.
 16 William -- may I confer with counsel for a
 17 moment, please?
 18 JUDGE CHAPPELL: Yes. Go ahead.
 19 MR. SHERMAN: I'm reminded, Your Honor, that we
 20 previously agreed that this is proprietary for Javelin,
 21 and so I'm requesting --
 22 JUDGE CHAPPELL: First of all, if you've made a
 23 determination, you need to immediately remove it from
 24 every screen in the courtroom.
 25 MS. VANDRUFF: I'm sorry, Counsel. Excuse me,

1 in this case are in camera because of their -- because
 2 they contain sensitive personal information, this is a
 3 document that contains proprietary information.
 4 Notwithstanding that, we still have no
 5 objection to Mr. Daugherty remaining because it does
 6 not reflect any competitive issue with Mr. Daugherty's
 7 company.
 8 JUDGE CHAPPELL: Because the public has a right
 9 to take part or view these proceedings, I'm not allowed
 10 to just say counsel can agree that this is proprietary.
 11 I am allowed to grant conditional in camera status,
 12 which I am willing to do, but that will require a
 13 follow-up motion for in camera treatment.
 14 MS. VANDRUFF: I'm sorry, Your Honor. You have
 15 granted in camera status to the document that
 16 Mr. Sherman is about to use, and I just wanted to
 17 clarify that while other documents --
 18 JUDGE CHAPPELL: I thought I just heard you say
 19 otherwise.
 20 MS. VANDRUFF: I apologize, Your Honor, if I
 21 wasn't clear.
 22 MR. SHERMAN: We filed it jointly, Your Honor.
 23 JUDGE CHAPPELL: So let me make sure I've got
 24 this.
 25 The document you're going to display has been

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1 JUDGE CHAPPELL: And I believe a member of the
2 press has been sitting in here during the in camera
3 session.
4 UNIDENTIFIED SPEAKER: The sign outside did not
5 say it was "in camera." I'm sorry. I have not taken
6 any notes. The sign outside didn't say "in camera." I
7 didn't realize it was in camera until right now.
8 MS. VANDRUFF: I apologize, Your Honor. She
9 wasn't here when we went in camera. I'm sorry. I
10 didn't notice her presence.
11 MR. SHERMAN: I didn't see her either.
12 JUDGE CHAPPELL: Whose document is it?
13 MS. VANDRUFF: It's Mr. Van Dyke's document,
14 Your Honor, and it's sponsored by respondent.
15 JUDGE CHAPPELL: When we take a break, someone
16 can speak to the young lady and see if you're satisfied
17 that we don't have an issue.
18 MS. VANDRUFF: We will do that, Your Honor.
19 May we do that jointly, Your Honor? May the
20 parties --
21 JUDGE CHAPPELL: Yes. And including the man
22 whose document it is.
23 MS. VANDRUFF: Thank you, Your Honor.
24 MR. SHERMAN: Thank you, Your Honor.
25 JUDGE CHAPPELL: I have a few questions.

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1 Mr. Van Dyke, you're familiar with something
2 called statistical sampling; correct?
3 THE WITNESS: Yes, sir.
4 JUDGE CHAPPELL: In fact, that's what you did on
5 this survey we've been talking about or someone did;
6 correct?
7 THE WITNESS: Yes, sir.
8 JUDGE CHAPPELL: And that basically -- well,
9 I'll just let you define it. You're the expert.
10 Statistical sampling, how would you define it?
11 THE WITNESS: So statistical sampling is where
12 we take a sample of an overall population -- in this
13 case, it's a sample of the U.S. adult population -- and
14 we make sure that that sample is representative of the
15 overall U.S. population on critical categories, such as
16 age, gender, ethnicity, income, and so forth.
17 JUDGE CHAPPELL: So you take a representative
18 sample of a larger number and survey those people, and
19 then you extrapolate data from that sample?
20 THE WITNESS: Yes, sir.
21 JUDGE CHAPPELL: And come to the conclusions
22 that you use on a survey -- or I guess in a report from
23 that survey.
24 THE WITNESS: That is correct, yes.
25 JUDGE CHAPPELL: And that's basically what

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1 happened here with the survey we've been talking about.
2 THE WITNESS: Yes, sir, that is correct.
3 JUDGE CHAPPELL: And this survey we've been
4 talking about -- and again, I don't see your expert
5 report. I don't know what it says. But did you
6 personally conduct this survey?
7 THE WITNESS: I personally oversaw all aspects
8 of it. I did not work in -- I did not personally work
9 on a hundred percent of the individual efforts. It's
10 a -- it's a massive project, Your Honor.
11 JUDGE CHAPPELL: Did someone involved have a
12 background in statistics who had something to do with
13 this survey?
14 THE WITNESS: Oh, absolutely. Multiple people
15 did, Your Honor.
16 JUDGE CHAPPELL: And you, if I take it -- if I'm
17 correct, do not have a statistical background; is that
18 correct?
19 THE WITNESS: I think it's most accurate to say
20 I do have a statistical background. I do not have a
21 dedicated educational degree in statistics, no, but I've
22 worked in that field and taken dedicated courses in that
23 subject.
24 JUDGE CHAPPELL: Would you call yourself a
25 statistician?

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1 THE WITNESS: No, I would not, Your Honor.
2 JUDGE CHAPPELL: This survey -- and again, I'm
3 coming from a point where I don't know anything about
4 the survey -- was this conducted by e-mail, by
5 telephone? Was it sent in the mail? How was it done?
6 THE WITNESS: These questions were fielded
7 by -- by an e-mail link sent to individual respondents.
8 JUDGE CHAPPELL: And how did you verify the
9 respondents to the survey, that they were who they said
10 they were?
11 THE WITNESS: Yeah, I appreciate that question.
12 We -- there are a number of methods in place.
13 This particular survey is highly unusual, if I
14 may give you a slight bit of elaboration I think is
15 appropriate here, Your Honor, that we go through a
16 sampling company called Knowledge Networks that is
17 unusual in that they conduct what is truly a nationally
18 representative survey.
19 And because of the extreme sensitivity and
20 important subject matter about identity fraud, we're
21 trying to include individuals -- and I'm leading to a
22 point, so please bear with me in the detail -- that
23 are -- that would be, for example, lower in income,
24 elderly, perhaps not have access to traditional
25 financial instruments, because such groups as I just

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1 mentioned have unique patterns of identity fraud and
 2 they're very hard to reach by traditional research
 3 methods.
 4 So therefore, we actually -- in giving these
 5 people this e-mail link, these -- these are -- these
 6 individuals in some extreme cases might be living,
 7 for example, in the Appalachians and not have
 8 traditional Internet access. They might be given a
 9 laptop with bright-colored buttons because they have
 10 difficulty with basic language comprehension. And when
 11 they're looking at the words, which we work to keep very
 12 simple, "press here for yes," and it would be a certain
 13 color. And this is the only time that those individuals
 14 in these extreme categories would actually go on the
 15 Internet.
 16 That's a very long answer to the question. Yes,
 17 they get an e-mail link, and they represent everyone in
 18 the U.S.
 19 JUDGE CHAPPELL: All right. And I'm not
 20 talking about the extreme case you talked about in
 21 Appalachia.
 22 What about the average person? Is someone just
 23 sent an e-mail and they're given a link?
 24 THE WITNESS: Yes. And we -- and I believe you
 25 asked about a part of the question that I don't think I

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1 fully responded to, which is the -- what we would call
 2 the authentication, confirming their identity.
 3 So we want to make sure that individuals are
 4 within the income or ethnicity or gender categories
 5 that they represent, so we -- we look for -- you know,
 6 people on my team are looking for patterns of
 7 inconsistency across multiple surveys where they might
 8 not have responded as they would be expected to for a
 9 person within their income category or their gender
 10 group. And they'll be prohibited from taking future
 11 surveys or even completing the one they were attempting
 12 to complete if they don't do that, if they don't answer
 13 with consistency or reliability.
 14 We also look to see how they responded to other
 15 information, other requests online, multiple methods of
 16 confirming that they are who they say they are.
 17 JUDGE CHAPPELL: So if you sent an e-mail to my
 18 house, how do you know that anyone with access to my
 19 e-mail on my computer didn't complete the survey?
 20 THE WITNESS: We would -- there's a couple of
 21 methods in place.
 22 So we would be looking at public record
 23 information such as that found on public databases,
 24 LexisNexis, places like that, to confirm the pattern of
 25 who you claim to be, that that -- that that is

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1 reliable.
 2 JUDGE CHAPPELL: Are you describing what's
 3 called profiling?
 4 THE WITNESS: We are describing a profile. And
 5 then we're also looking for patterns of reliability
 6 within the survey itself.
 7 And to get at the part about what you just asked
 8 me about, Your Honor, which is, if -- we can spot
 9 patterns of inconsistency when -- in the way --
 10 you know, if I look at the result of your survey and
 11 you're saying you have multiple credit card accounts
 12 and two mortgages and yet you say that you're a
 13 lower-income person that doesn't have a college degree,
 14 well, that would be highly unlikely, and we would likely
 15 reject you from that.
 16 So I've described two patterns of many that we
 17 would use to get the highest degree of assurance that
 18 you are who you claim to be and that you fit the profile
 19 that you claim you have.
 20 JUDGE CHAPPELL: Would you agree that there are
 21 some people responding to this who are not the actual
 22 person you targeted?
 23 THE WITNESS: Yes. You could -- I could --
 24 there's no way I could eliminate the possibility of that
 25 happening. Yes.

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1 JUDGE CHAPPELL: And if I understood you
 2 correctly, this profiling, to use that word, is to such
 3 an extent that if you don't see the pattern you expect
 4 in my responses, you would probably throw out my
 5 response; is that correct, my entire survey response?
 6 THE WITNESS: Absolutely, that is correct.
 7 JUDGE CHAPPELL: Does that not correct what's
 8 called survey bias in the statistical world?
 9 THE WITNESS: I would state actually that it
 10 creates the opposite. We are looking for patterns of
 11 reliability and when -- I can know with a high degree of
 12 certainty that you are not who you claim to be.
 13 I would do the same thing as if I asked you for
 14 directions, say, on the street and you -- and you began
 15 to give me information that wasn't -- that defied
 16 reason. I would choose not to follow your advice.
 17 So in that we're retaining the people that have
 18 the highest reliability that represent the target
 19 audience.
 20 JUDGE CHAPPELL: And how do you verify when
 21 someone says they were a victim of ID theft or any other
 22 response they could have, how do you verify they're
 23 telling you the truth?
 24 THE WITNESS: One of the ways I've found to be
 25 most helpful is by -- because I do this, I've been

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1 doing this for ten years with this largest sample, I'm
 2 looking for patterns that make sense. And if they
 3 don't make sense and they just defy reason, I'm
 4 throwing those out.
 5 JUDGE CHAPPELL: Would you throw out the ones
 6 that say they weren't victims and keep the ones that
 7 said they were victims?
 8 THE WITNESS: No. I could not do that,
 9 Your Honor.
 10 JUDGE CHAPPELL: How do you decide?
 11 THE WITNESS: Well, it's -- there are a number
 12 of people in each -- in any given year -- for example,
 13 in 2013, there were 94.6 percent of all people among the
 14 U.S. adult population who were not victims of fraud.
 15 And I can start --
 16 JUDGE CHAPPELL: And that number is based on
 17 what?
 18 THE WITNESS: I'm sorry, Your Honor?
 19 JUDGE CHAPPELL: That number you just threw out,
 20 94.6, where is that from?
 21 THE WITNESS: That came from figure 1 in my
 22 expert report.
 23 So I'm polling a large number of people each
 24 year. And while I field the largest study on identity
 25 theft and data breaches that's done on an annual basis,

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1 the largest sample, I also have the benefit of being
 2 able to compare that to what I also collect in my
 3 qualitative work, so individual conversations with
 4 people. And those would go from focus groups to taxi
 5 drivers to my own experience. I've been a victim of
 6 identity theft five times.
 7 I go to great length to collect this
 8 information personally. I'm actually unusual that way
 9 in the way that the lengths I go to verify information
 10 myself.
 11 I also compare the results of my studies to
 12 other respectable sources, such as information put out
 13 by the Department of Justice and other sources like
 14 that, just in general, to make sure the pattern of what
 15 I'm seeing from other studies as well as my individual
 16 conversations with people and qualitative research like
 17 focus groups, that it just makes sense and it's
 18 consistent.
 19 JUDGE CHAPPELL: But you have no way of actually
 20 verifying, when someone says they were a victim, whether
 21 they were or not.
 22 THE WITNESS: No, I don't believe so in that
 23 manner of exactitude that you're asking about,
 24 Your Honor.
 25 JUDGE CHAPPELL: And would you agree with me,

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1 the best way to determine if someone was a victim would
 2 be to conduct a survey of that actual group of people?
 3 THE WITNESS: May I --
 4 JUDGE CHAPPELL: Let me make it really clear.
 5 THE WITNESS: Sure.
 6 JUDGE CHAPPELL: Wouldn't it be a good idea to
 7 take the names of the people on the 1718 File, do
 8 sampling and survey those actual people? Wouldn't that
 9 give us a better result than what you've done?
 10 THE WITNESS: If that could be done, that would
 11 always be of the highest benefit. Yes.
 12 JUDGE CHAPPELL: Did you not consider that?
 13 THE WITNESS: I'm sorry. There's just a bit of
 14 an echo, so I'm having --
 15 JUDGE CHAPPELL: Did you not consider surveying
 16 the actual names of people who are actually on the
 17 1718 File?
 18 THE WITNESS: No, I did not consider that,
 19 Your Honor.
 20 JUDGE CHAPPELL: Why not?
 21 THE WITNESS: That was not a method that was
 22 available to me.
 23 JUDGE CHAPPELL: You don't think you could
 24 contact the people whose information were listed on that
 25 1718 File?

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1 THE WITNESS: I could. It would be a quite
 2 extensive piece of work. And given the aging of people
 3 on that, they might run into some -- some -- that would
 4 introduce some new accuracy problems because of the age
 5 of -- the length of time some of those records, as I
 6 understand it, have been made available.
 7 But that would have some advantages. It might
 8 also introduce a few disadvantages as well.
 9 JUDGE CHAPPELL: So surveying the actual names
 10 listed on the 1718 report would create disadvantages in
 11 trying to come to some determination of what the
 12 vulnerability is of the people.
 13 THE WITNESS: I -- you know, and I'm answering
 14 off-the-cuff, but I could see among the advantages some
 15 disadvantages as well. Yes.
 16 JUDGE CHAPPELL: What are the disadvantages?
 17 THE WITNESS: The disadvantages would be, first
 18 and foremost -- there's a couple that are immediately
 19 coming to mind as I'm thinking about this just
 20 off-the-cuff.
 21 One is that we're using a -- incomparable
 22 research method. And when I say "comparable," I've
 23 fielded our identity fraud survey report for ten years
 24 now, so I've got the benefit of that, and I wouldn't
 25 have anything else to compare that to, that -- the

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1 results of polling those individuals.
 2 And also that, secondly, if I were to go out to
 3 those individuals on the 1718 File and make an attempt
 4 to contact them, I would imagine that some of them could
 5 be contacted. Some of them might not be able to be
 6 contacted. I just don't know what I would encounter in
 7 that effort.
 8 JUDGE CHAPPELL: Let's be honest about the
 9 scope. You're not talking about contacting all of
 10 them.
 11 For example, you took the entire population of
 12 the United States and surveyed, what, 9,000 people for
 13 your survey?
 14 THE WITNESS: 5,634, Your Honor.
 15 JUDGE CHAPPELL: Okay. So it would be a mere
 16 percentage, a small percentage, of the total number of
 17 people on the 1718 File would need to be surveyed;
 18 correct?
 19 THE WITNESS: Unfortunately, I wish I could say
 20 yes, but -- but the honest answer is no, and here's why,
 21 is the difficulty -- there's a particular difficulty in
 22 identity theft research that we've encountered for all
 23 of our ten years. And it's best explained this way,
 24 that because, thankfully, of the U.S. adult population,
 25 in a typical year, only about one out of twenty

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1 experience identity theft.
 2 So when we have that one out of twenty, we have
 3 to poll a lot of people to get a healthy sample.
 4 You know, we can't just go out to, say, a hundred people
 5 or -- and we found that we can't even stop at a
 6 thousand, which is why we go to 5,000 minimum each year
 7 now. And the only reason we do that is because of that
 8 low incidence rate, the 5.4 percent.
 9 We need to get to several hundred people who
 10 have been a victim of fraud so we have statistical
 11 accuracy, so we start to get an evened-out pattern, if
 12 you will.
 13 And then we further compound that by the fact
 14 that we need to get a lot of people who would also say
 15 they've had their information exposed, but -- again,
 16 bear with me for just thinking that through
 17 off-the-cuff -- by definition, the people in the
 18 1718 File have had their information exposed, so let me
 19 back up on my answer and say we would need to go with --
 20 we would need to successfully contact a lot of people in
 21 the 1718 File -- my off-the-cuff answer would probably
 22 be well over a thousand -- to have good assurance that
 23 we were dealing -- we had a quality sample that would
 24 not have rough patterns to the result.
 25 JUDGE CHAPPELL: So if I understand you right,

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1 though, you and your company, you're all about this
 2 Javelin survey. You're not so much in the business of
 3 me bringing a stack of names to you and telling you to
 4 conduct and create a survey; is that correct?
 5 THE WITNESS: Yeah. We generally do not do
 6 that.
 7 JUDGE CHAPPELL: But if I wanted to hire someone
 8 and say, Here's a stack with names on it, they could
 9 create a survey and conduct it for me.
 10 THE WITNESS: We do that for people. And we
 11 have done that and we will continue to do that. That's
 12 not -- that's not the majority of what we do. But yes,
 13 we do that occasionally.
 14 JUDGE CHAPPELL: Not that difficult, is it?
 15 THE WITNESS: It's always difficult in that I
 16 have to have statistical experts, but it brings in
 17 unique challenges in that contacting people and
 18 getting -- and solving for having the -- and not have --
 19 I believe you mentioned the term "response bias" I
 20 believe earlier -- ensuring that the pattern of those
 21 who responded was not biased by the fact that the way in
 22 which they responded didn't bias the pattern of
 23 responses that I end up with.
 24 And we have a very structured process in place
 25 for my annual surveys. It's not simple, but I know

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1 exactly what the issues are that I'll have to deal with
 2 after having done this for ten years now with
 3 5,000 people.
 4 I would have to construct that by hand and
 5 assemble a team do that. It actually would be quite a
 6 challenge. It could be done, but it would be a
 7 challenge.
 8 JUDGE CHAPPELL: All right. Thank you.
 9 THE WITNESS: Thank you.
 10 JUDGE CHAPPELL: If the attorneys have any
 11 questions regarding my questions, you may conduct them
 12 on your redirect and, Mr. Sherman, on your recross.
 13 MR. SHERMAN: Thank you, Your Honor.
 14 MS. VANDRUFF: Thank you, Your Honor.
 15 JUDGE CHAPPELL: Continue with your redirect.
 16 MS. VANDRUFF: Thank you, Your Honor.
 17 - - - - -
 18 REDIRECT EXAMINATION (continued)
 19 BY MS. VANDRUFF:
 20 **Q. Mr. Van Dyke, you described for His Honor**
 21 **Knowledge Networks and how you conduct the survey, the**
 22 **identity fraud survey, but can you describe for**
 23 **His Honor how the panels are selected.**
 24 **That is, is it likely that His Honor is going to**
 25 **receive an e-mail requesting that he complete the**

1 **identity fraud survey?**
 2 A. His Honor as an individual, it's not likely that
 3 he specifically would, because we are polling a small
 4 section, in this case 5600 people out of 330 -- let's
 5 just call it 300 perhaps U.S. adults, 300 million.

6 **Q. Mr. Van Dyke, are those 5600 people preselected**
 7 **by Knowledge Networks?**

8 A. Yes, they are.

9 **Q. So it's not an e-mail blast that goes out on**
 10 **behalf of Javelin to field the 2013 or any prior**
 11 **identity fraud survey; is that correct?**

12 A. That -- that is correct. It is not a general
 13 scattering. This is the opposite of that kind of a
 14 loose polling method.

15 **Q. His Honor asked you questions about your**
 16 **background in statistics.**

17 **Can you describe for the court, please, your**
 18 **experience with respect to statistically and**
 19 **methodologically valid surveys.**

20 A. Certainly.

21 So of my 30 years in the working world, the
 22 last 15 have been spent in the field of research. And
 23 in doing that, I have worked around structured
 24 research, always gravitated toward that, especially
 25 quantitative research more than qualitative by far.

1 **this case who receives personally identifying**
 2 **information from an unauthorized disclosure.**

3 **Please explain briefly to the court why it's**
 4 **your opinion that it does not matter who receives**
 5 **personally identifying information from an unauthorized**
 6 **disclosure for the purposes of calculating fraud**
 7 **impacts.**

8 A. My position, Your Honor, is that it does not
 9 matter what the identity is of the recipient of
 10 unauthorized information because there is a single
 11 overriding factor that matters so much that, quite
 12 literally in this case, in my opinion, nothing else
 13 matters. And that is was the individual who had access
 14 to the information authorized or unauthorized to have
 15 access to that information.

16 Because, in my opinion, if that individual who
 17 had access to that information was not authorized to
 18 have access, I therefore have a high degree of
 19 confidence about what's likely to happen next on a
 20 statistically significant basis.

21 **Q. Is that confidence driven from the survey data**
 22 **that you've fielded for ten years?**

23 A. It absolutely is. That's where I'm going with
 24 that. Thank you.

25 **Q. I'd like to direct your attention to your expert**

1 And in doing that, I've -- I've personally designed
 2 research surveys, which meant I've written out the
 3 research questions.

4 I've gone back and forth with what are called
 5 field houses. In this case, Knowledge Networks is known
 6 to be about the highest-quality quantitative field house
 7 there is.

8 That -- I've analyzed results of that
 9 information. I'm known in my business to be a person
 10 who will take data banners, you know, the spreadsheets
 11 and tables and pull an all-nighter and literally not get
 12 any sleep poring over the data fields.

13 I don't have a Ph.D. in statistics, and neither
 14 do I claim to be a statistician. I'm not.

15 But I am drawn to this field of study because I
 16 understand it, I love it, and I love the process of
 17 discovery, and I communicate quite effectively I'm told
 18 by people that do nothing but work in the field of
 19 statistics.

20 **Q. And for how long have you been working in this**
 21 **field?**

22 A. In the field of applied research, you know,
 23 market research, for 15 years.

24 **Q. Yesterday, Mr. Van Dyke, His Honor asked you**
 25 **whether it matters for the purposes of your analysis in**

1 **report, Mr. Van Dyke, which has been marked as CX 0741,**
 2 **and specifically to page 6 of your report.**

3 **Now, Mr. Sherman asked you a number of**
 4 **questions about notification to the individuals who are**
 5 **identified in the 1718 File. Do you remember those**
 6 **questions?**

7 A. Yes, I do.

8 **Q. Okay. And does your expert report describe why**
 9 **you nonetheless applied the data from the 2013 identity**
 10 **fraud survey to the facts of the 1718 File disclosure?**

11 A. Yes, it does.

12 **Q. And why did you apply the 2013 data?**

13 A. Are you asking about the choice of the 2013 data
 14 or why did I apply my survey process overall to the
 15 1718 File?

16 **Q. Well, let's start with your survey process**
 17 **overall.**

18 A. Okay. So the reason I applied my survey
 19 process overall is because I have the benefit of having
 20 the largest annual study really in the world that -- and
 21 going out to now 5,000-plus people, where I can choose
 22 these questions and change them from year to year based
 23 on trends I'm seeing from a wide variety of places that
 24 fraud technology are changing, use the highest-quality
 25 deployment method, and I just can't get anything more

1 rigorous than that.
 2 **Q. So then with respect to application of the**
 3 **2013 data, why did you apply the 2013 data to the facts**
 4 **of the 1718 File disclosure when no breach notification**
 5 **had been provided?**
 6 A. The reason I chose my 2013 survey results from
 7 among the other years options I had available to me were
 8 that -- and I'll paraphrase what I stated in the expert
 9 report. Oh, I'm sorry. It's actually on page 7. Here
 10 it is -- that consumers -- the point there under
 11 item (c) in my expert report, consumers were notified of
 12 the unauthorized disclosure of the day sheets in March
 13 of 2013, which was within that same twelve-month period
 14 my survey questions that we went over earlier were
 15 asking about, and because in November 2013, Mr. Boback
 16 testified that the insurance aging report, the
 17 1718 File, could be found in multiple locations.
 18 Those two incidents that I just referred to fall
 19 within the period that I'd asked survey respondents
 20 about within my most recent identity fraud survey
 21 report.
 22 **Q. And in your expert report, do you describe**
 23 **whether or not data breach notification is a**
 24 **prerequisite for a victim experiencing an increased risk**
 25 **of harm?**

1 A. It is.
 2 **Q. And that's attached to your report as**
 3 **attachment 1; is that correct?**
 4 A. I believe that's what that attachment is
 5 called.
 6 **Q. Okay. Let me ask you to direct your attention,**
 7 **please, to page 79 of the document that's been marked as**
 8 **CX 741.**
 9 MR. SHERMAN: Objection, Your Honor. I believe
 10 this is beyond the scope of cross.
 11 MS. VANDRUFF: May I respond, Your Honor?
 12 JUDGE CHAPPELL: The best way to respond is with
 13 the witness.
 14 MS. VANDRUFF: Certainly.
 15 JUDGE CHAPPELL: The witness needs to bring it
 16 within the scope of the cross. That's how you respond
 17 to that objection, not argument but witness testimony.
 18 MS. VANDRUFF: I understand, Your Honor.
 19 BY MS. VANDRUFF:
 20 **Q. And Mr. Van Dyke, my apologies. I directed you**
 21 **to page 79, but please to page 80 of the identity fraud**
 22 **survey report, which is included within CX 741.**
 23 **Do you describe in the third paragraph what you**
 24 **do when an individual consumer reports multiple**
 25 **categories of fraud occurring in his or her name?**

1 A. I do describe that.
 2 **Q. Does that appear on page 6 of your report, sir?**
 3 A. Yes, it does. It's at the bottom of page 6. My
 4 words are: It is important to note that the notice is
 5 not a prerequisite for a victim to experience an
 6 increased risk of harm.
 7 **Q. And so therefore, even though no data breach**
 8 **notification was provided with respect to the**
 9 **1718 File, your data is nonetheless applicable; is that**
 10 **correct?**
 11 A. Absolutely. We're really measuring whether or
 12 not the data was known to have been exposed.
 13 **Q. Mr. Sherman asked you about new account fraud,**
 14 **existing card fraud and existing non-card fraud and**
 15 **specifically referred you to the language in your**
 16 **report at page 11 about consumers experiencing multiple**
 17 **types of fraud. Do you recall that line of**
 18 **questioning?**
 19 A. I do.
 20 **Q. Okay. And then -- well, just as a preliminary**
 21 **matter, Mr. Van Dyke, is the methodology of the**
 22 **identity fraud survey described in the survey document**
 23 **itself?**
 24 A. Yes.
 25 **Q. Okay.**

1 **(Pause in the proceedings.)**
 2 A. I'm sorry. You're asking about the third
 3 paragraph on page 7- --
 4 **Q. The paragraph that begins "Many victims."**
 5 A. I might be on -- is it page 79 in the lower
 6 right that you're referring to of our methodology
 7 statement?
 8 **Q. Thank you, Mr. Van Dyke. No. I misspoke and I**
 9 **asked you to turn your attention to page 80.**
 10 A. 80. Okay.
 11 **Q. Uh-huh.**
 12 A. Great. Thank you.
 13 **Q. Thank you.**
 14 A. Oh, okay. Yes, I'm with you.
 15 **Q. Okay. And how -- when Javelin is conducting**
 16 **this study, what do you do when an individual consumer**
 17 **reports multiple kinds of fraud conducted in his or her**
 18 **name?**
 19 A. We focus on the most serious crime. That's the
 20 one that we count.
 21 **Q. Okay. So then turning back to page 11 of your**
 22 **report and the incidence rates that Mr. Sherman was**
 23 **asking you about with respect to new account fraud,**
 24 **existing non-card fraud and existing card fraud, is**
 25 **there overlap in those rates?**

1 A. There can be some overlap in these rates, but
 2 again we're focused on -- you know, we're choosing to
 3 focus on the most serious crime first. And the order in
 4 which they're listed on page 11 actually goes from most
 5 serious to least serious.
 6 JUDGE CHAPPELL: Is your objection withdrawn?
 7 MR. SHERMAN: Yes, I withdraw the objection,
 8 Your Honor.
 9 MS. VANDRUFF: Thank you, Counsel.
 10 BY MS. VANDRUFF:
 11 **Q. Let's return to figure 1, which appears on**
 12 **page 8 of your report.**
 13 **Mr. Sherman and the court asked you earlier**
 14 **about the twelve-month period of time that your survey**
 15 **question participants respond to with respect to**
 16 **experiencing fraud after receiving notice of a data**
 17 **breach. Do you recall that line of examination?**
 18 A. Yes, I do.
 19 **Q. Is it fair to say that this is a snapshot in**
 20 **time that captures what frauds participants experienced**
 21 **in twelve months before answering the survey?**
 22 A. That is correct.
 23 MS. VANDRUFF: The court's indulgence,
 24 Your Honor.
 25 (Pause in the proceedings.)

1 relevance of the report to the facts in this case,
 2 Mr. Van Dyke was certainly -- I won't say that he was
 3 unwilling because I believe Mr. Van Dyke was trying,
 4 but he was unable to actually relate the temporal value
 5 of question 2 to the actual facts in this case as it
 6 relates to the alleged exposure of the information
 7 contained in the 1718 File.
 8 He was -- I don't think he gave a satisfactory
 9 scientific answer as it relates to how the individuals
 10 whose names were listed in the 1718 File could actually
 11 be included in the 30.5 percent number which then
 12 extrapolated to 7.1 and the 7.1 number and I think the
 13 13.5 number when in fact those numbers were based on a
 14 series of survey questions, one of which included
 15 whether or not those individuals had been notified
 16 within the last twelve-month period, and clearly the
 17 evidence in this case and Mr. Van Dyke indicated that he
 18 was aware that the evidence in this case is that the
 19 individuals whose names appear on the 1718 File clearly
 20 had not been notified, so just reminding the court of
 21 what I believe the methodological and scientific
 22 weaknesses are in Mr. Van Dyke's report as well as its
 23 relevance to the facts in this case.
 24 Thank you, Your Honor.
 25 JUDGE CHAPPELL: Thank you. It's in the

1 No further redirect, Your Honor, subject to
 2 Mr. Sherman's recross.
 3 JUDGE CHAPPELL: Recross?
 4 MR. SHERMAN: I have no recross, Your Honor.
 5 JUDGE CHAPPELL: Thank you, sir. You're
 6 excused.
 7 THE WITNESS: Thank you.
 8 MR. SHERMAN: Your Honor, just for the
 9 record --
 10 MS. VANDRUFF: May I ask you, Mr. Sherman, to
 11 just wait until the witness is out of the courtroom?
 12 MR. SHERMAN: Sure.
 13 MS. VANDRUFF: Thank you.
 14 MR. SHERMAN: Absolutely.
 15 I would just like to renew our motion in limine
 16 or Daubert-type motion which we filed with reference to
 17 Mr. Van Dyke's report, questioning its methodology, its
 18 scientific reliability, and mainly its relevance to the
 19 actual facts in this case.
 20 And I understand from the court's previous
 21 rulings that the court is likely to admit the report
 22 and give it the weight that the court deems necessary.
 23 I would just argue that the weight that should
 24 be given to this report is very light given the fact
 25 that given the opportunity to testify about the

1 record.
 2 Your response?
 3 MS. VANDRUFF: Thank you, Your Honor.
 4 As Your Honor has explained in two separate
 5 rulings and also in the ruling on the motion in limine
 6 filed to exclude Mr. Van Dyke, respondent's arguments go
 7 to weight, not the admissibility of Mr. Van Dyke's
 8 testimony or to his expert report.
 9 Mr. Van Dyke is qualified by his experience and
 10 knowledge to give opinions on the issue of the
 11 likelihood of quantifiable consumer harm through
 12 identity theft in this case.
 13 It's his company that has conducted the
 14 longest-running survey on identity theft. And he has
 15 published dozens of articles about data breach and fraud
 16 impact.
 17 As such, he's qualified, pursuant to rule 702,
 18 by his knowledge, skill, experience and training, and he
 19 is an expert that can be helpful to the trier of fact in
 20 this case.
 21 With respect to the specific weaknesses that
 22 Mr. Sherman argues disqualify Mr. Van Dyke, he
 23 explained at length why he used his applied research
 24 data-driven analysis to evaluate the question in this
 25 case of whether consumers were at increased risk of

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1 harm on the basis of the two unauthorized disclosures in
2 quantifying for Your Honor what those fraud impacts
3 might be.
4 And complaint counsel objects to Mr. Sherman's
5 motion.
6 JUDGE CHAPPELL: You mean you oppose his
7 motion.
8 MS. VANDRUFF: Thank you, Your Honor. Exactly.
9 We oppose the motion.
10 JUDGE CHAPPELL: Because I would actually
11 overrule your objection to the motion, but I would allow
12 your opposition to the motion.
13 MS. VANDRUFF: Thank you, Your Honor.
14 JUDGE CHAPPELL: For the reasons I've stated
15 twice above in the record, the testimony and any
16 opinions will be considered if I find they meet the
17 proper legal standards. They will be rejected if I find
18 they do not.
19 And if you need further reasoning for my ruling,
20 I've said it twice already in the record, some moments
21 or some days ago.
22 So with that clarification, the objection is
23 overruled.
24 MR. SHERMAN: Thank you, Your Honor.
25 MS. VANDRUFF: Thank you, Your Honor.

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1 JUDGE CHAPPELL: We're going to take our morning
2 break, and I expect to have a new witness when we
3 return.
4 MS. VANDRUFF: Your Honor, before we break, I
5 just want to clarify for the court's expectations who
6 the next witness may be because it will not be in
7 complaint counsel's case.
8 MR. SHERMAN: It is Eric Johnson. As we
9 previously discussed, we had agreed amongst counsel that
10 in order to accommodate Mr. Johnson's schedule we would
11 call him out of order.
12 The only other housekeeping matter that I would
13 address at this point is, I believe that that was the
14 last witness in counsel's affirmative case.
15 MS. VANDRUFF: No, that's not the case,
16 Your Honor -- pardon me for interrupting but --
17 JUDGE CHAPPELL: She just promoted you. I
18 believe she said "Your Honor."
19 MR. SHERMAN: We respect each other that way
20 sometimes.
21 MS. VANDRUFF: Absolutely.
22 JUDGE CHAPPELL: All right. So she's saying
23 that she'll decide when their case is finished, is
24 pretty much what she's saying.
25 MR. SHERMAN: Well, that's true. But I think

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1 she's indicated that their next witness is
2 Professor Shields, who is a rebuttal expert witness,
3 and I think during the normal course of things he would
4 be a witness that they would put on to rebut.
5 JUDGE CHAPPELL: Well, if you have any
6 concerns, I will request -- I will require the
7 government to rest their chief case in chief before they
8 call a rebuttal witness.
9 MR. SHERMAN: That's exactly what I was --
10 JUDGE CHAPPELL: Are we at that point,
11 Ms. VanDruff?
12 MS. VANDRUFF: Well, Your Honor, thank you.
13 With respect to Professor Shields, while it is
14 the case that we served his expert report as a rebuttal
15 report because of course we couldn't reasonably
16 anticipate what the technical opinions that would be
17 proffered by respondent's counsel's expert might be,
18 that it may be a more efficient presentation of the
19 proofs for Your Honor to hear from Professor Shields,
20 who has expertise specifically in P2P technology, in our
21 case in chief.
22 MR. SHERMAN: Well, that's the problem that I
23 have, is that he is going to then be an expert witness
24 who is offering evidence, testimony and opinions in
25 their case in chief when in fact when --

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1 JUDGE CHAPPELL: Let me just clarify something.
2 Was he designated an expert or merely a rebuttal
3 expert?
4 MS. VANDRUFF: Well, Your Honor, I'm not sure if
5 I understand the distinction, but he -- we served his
6 expert report after receiving the expert report from
7 respondent, so in that respect, he is a rebuttal expert,
8 but we can reasonably anticipate what respondent's --
9 what respondent's expert's opinions will be and thought
10 that it would be useful to the court to hear Mr. Shields
11 in our presentation of proofs in this order.
12 JUDGE CHAPPELL: If he submitted a rebuttal
13 report, I think he should be a rebuttal witness, and
14 that means after the defense or respondent have
15 presented their case.
16 MR. SHERMAN: Well, Your Honor, if I may, I
17 have no problem with him testifying today or later
18 today. I would just like for the government to rest
19 its case.
20 JUDGE CHAPPELL: Well, that's what I'm trying to
21 get to here, but I can't seem to. Maybe I'm not
22 questioning clearly enough.
23 Is this an expert who was designated as a
24 rebuttal expert only? Is he on your witness list for
25 your case in chief or is he on your witness list as a

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1 rebuttal expert?
 2 MS. VANDRUFF: He is a rebuttal expert,
 3 Your Honor.
 4 JUDGE CHAPPELL: Then you're going to have to
 5 rest your case before you call this witness.
 6 MS. VANDRUFF: Thank you, Your Honor.
 7 JUDGE CHAPPELL: Does the government rest?
 8 MS. VANDRUFF: The court's indulgence,
 9 Your Honor?
 10 JUDGE CHAPPELL: All right.
 11 MR. SHERMAN: Thank you, Your Honor.
 12 (Pause in the proceedings.)
 13 MS. VANDRUFF: With Your Honor's indulgence,
 14 would it be permissible for us to take a break prior to
 15 me answering the question, Your Honor?
 16 JUDGE CHAPPELL: Sure.
 17 MS. VANDRUFF: Thank you, Your Honor.
 18 JUDGE CHAPPELL: All right. We're going to
 19 return at 11:55.
 20 We're in recess.
 21 (Recess)
 22 JUDGE CHAPPELL: Let's go back on the record.
 23 And there was a pending issue, and I've thought
 24 about this logically. And we're taking a respondent
 25 witness out of time, out of order, so I'm going to wait

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1 until that witness testifies, and then I'm going to ask
 2 the government if they want to rest, because I will not
 3 allow a rebuttal witness to testify after the
 4 government has finished their case before the government
 5 rests.
 6 With that, let's have the next witness.
 7 (Pause in the proceedings.)
 8 I should have mentioned, in what I just said, I
 9 do not allow that over an objection.
 10 MS. VANDRUFF: Thank you, Your Honor.
 11 JUDGE CHAPPELL: Mr. Johnson, welcome. Glad you
 12 could join us. Step over here and this young lady will
 13 swear you in.
 14 - - - - -
 15 Whereupon --
 16 ERIC JOHNSON
 17 a witness, called for examination, having been first
 18 duly sworn, was examined and testified as follows:
 19 DIRECT EXAMINATION
 20 BY MR. SHERMAN:
 21 **Q. Good afternoon, Professor Johnson.**
 22 **Good afternoon.**
 23 A. Good afternoon.
 24 **Q. For the record, could you state your name and**
 25 **your current position and place of employment.**

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1 A. Eric Johnson. I'm a dean of the business school
 2 at Vanderbilt University and a professor there.
 3 **Q. Mr. Johnson, your deposition was taken in this**
 4 **case a few months ago; correct?**
 5 A. Yes.
 6 **Q. So you're familiar with the issues in the case,**
 7 **and some of the issues that I questioned you about I'm**
 8 **going to question you about again. Is that okay?**
 9 A. Yes.
 10 **Q. And I think this shouldn't take too long.**
 11 A. Thank you.
 12 **Q. Professor Johnson, back in the 2005, '6, '7, '8,**
 13 **'9 years, were you employed at Dartmouth College?**
 14 A. Yes, I was.
 15 **Q. And what was your position at Dartmouth College?**
 16 A. I was a professor at the Tuck School of Business
 17 and director of the Tuck Center for Digital Strategies.
 18 **Q. And in that capacity, did you have the occasion**
 19 **to do research with regard to digital strategies or,**
 20 **more specifically, cyber sharing?**
 21 A. Yes.
 22 **Q. And is it accurate then to say that**
 23 **Dartmouth College had a contract or a series of**
 24 **contractual agreements with the federal government to**
 25 **conduct the research on in the area of cyber sharing?**

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1 JUDGE CHAPPELL: Is this an adverse witness?
 2 Because of the leading, that's why I'm asking.
 3 MR. SHERMAN: Well, he -- I wouldn't qualify --
 4 I wouldn't say that he's an adverse witness, Your Honor.
 5 I think he has some important testimony. But I'm just
 6 trying to move it along, but if you would like for me
 7 to --
 8 JUDGE CHAPPELL: If you're trying to place the
 9 witness, that's fine.
 10 MR. SHERMAN: Yes. And I suspect that the court
 11 would then like for me not to lead this witness, as I
 12 did call him, he's in my case.
 13 JUDGE CHAPPELL: Yes.
 14 MR. SHERMAN: Okay.
 15 Could you go to RX 2.
 16 I'm sorry. RX 404.
 17 BY MR. SHERMAN:
 18 **Q. Professor Johnson, if you would open the**
 19 **notebook that you have in your lap.**
 20 **And Complaint Counsel, I apologize. We didn't**
 21 **make you copies. But I see you've come prepared as**
 22 **usual.**
 23 **Professor Johnson, you're looking at what's been**
 24 **marked as RX 404, and I'd ask that you kind of flip**
 25 **through that document until you are willing to and ready**

1 to testify that you recognize it.
 2 (Pause in the proceedings.)
 3 A. I see a document RX 2 here in front of me.
 4 **Q. Well, that's the exhibit sticker that's really**
 5 **on the face of the document, but for the purposes of**
 6 **these hearings, it's been marked as RX 404.**
 7 A. Okay. Well, it's not marked that way on my
 8 copy, so...
 9 **Q. I understand.**
 10 JUDGE CHAPPELL: Are we sure he has the right
 11 document since there's two RXs here?
 12 MR. SHERMAN: May I approach?
 13 JUDGE CHAPPELL: Yes, please.
 14 (Pause in the proceedings.)
 15 BY MR. SHERMAN:
 16 **Q. Do you recognize that document,**
 17 **Professor Johnson?**
 18 A. No, I really don't in the sense that I
 19 recognize the grant number that I was operating on, but
 20 I didn't work at this level within the project. That
 21 was, you know, one small project in a very large grant,
 22 as you can see, so this isn't a document I prepared or
 23 spent time working with.
 24 **Q. But you do recognize it as being relevant to a**
 25 **grant number for research that you did; correct?**

1 A. Yes. Tiversa.
 2 **Q. And was there an agreement between**
 3 **Dartmouth College and Tiversa with regard to that**
 4 **research?**
 5 A. A nondisclosure agreement in terms of our
 6 participation with Tiversa.
 7 **Q. And in agreeing to do the research along with**
 8 **Tiversa, did you in exchange analyze Tiversa's**
 9 **technology?**
 10 A. To some extent, yes.
 11 **Q. And can you describe what you did to analyze**
 12 **Tiversa's technology.**
 13 A. Prior to conducting the research, we did a
 14 series of tests to understand whether Tiversa could
 15 indeed find files that were shared in the peer-to-peer
 16 file-sharing systems.
 17 **Q. And how did you test that?**
 18 A. We conducted maybe what might be called an
 19 Easter egg hunt. We placed files on machines scattered
 20 throughout the U.S. that were available through
 21 file-sharing systems and then asked Tiversa to find
 22 those files.
 23 **Q. And was Tiversa able to find those files?**
 24 A. They were.
 25 **Q. And what did you do to assist Tiversa in being**

1 A. Yes.
 2 **Q. Okay.**
 3 A. Yes. I recognize the grant
 4 number 2006-CS-001-000001.
 5 **Q. And in terms of that grant, what types of**
 6 **research was involved or approved to be done under that**
 7 **grant number?**
 8 A. As I had mentioned, this was a large project
 9 involving many individuals. It was all related to
 10 cyber security.
 11 **Q. And you participated in that research; correct?**
 12 A. Correct.
 13 **Q. And it's correct that you authored an article**
 14 **called Data Hemorrhages in the Health-Care Sector?**
 15 A. Correct.
 16 **Q. And in authoring that article, there was**
 17 **research done; correct?**
 18 A. Correct.
 19 **Q. And did you have a research partner in doing**
 20 **that research?**
 21 A. There were graduate students that were involved
 22 in my research center. Yes.
 23 **Q. Other than graduate students, were there -- was**
 24 **there an outside third party that assisted you in the**
 25 **research?**

1 able to find those files? Did you provide them with any
 2 type of information?
 3 A. We provided them with the name of the files.
 4 **Q. And so it's your understanding that armed with**
 5 **the name of the files, Tiversa, using its technology,**
 6 **could go out on peer-to-peer networks and find those**
 7 **files.**
 8 A. It could go out and find those files that were
 9 being shared by users in the network.
 10 **Q. Okay. And so once Tiversa demonstrated its**
 11 **ability to do so, is it fair to say that you then**
 12 **proceeded with Tiversa as a research partner in your**
 13 **research?**
 14 A. Yes.
 15 **Q. And as part of that research, again, we**
 16 **mentioned the Data Hemorrhages in the Health-Care Sector**
 17 **article.**
 18 **Did you do that research with the assistance of**
 19 **Tiversa?**
 20 A. Yes.
 21 **Q. Can we pull up CX 382.**
 22 **That would be tab 2 for you.**
 23 A. Yes.
 24 **Q. Can you describe what you're looking at,**
 25 **Professor Johnson.**

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1 A. It's a copy of the forthcoming article that you
2 mentioned, Data Hemorrhages in the Health-Care Sector,
3 that we presented subsequently at the
4 Financial Cryptography Conference.

5 **Q. You said it was forthcoming, but it's been
6 published; correct?**

7 A. It has since been published, yes.

8 **Q. And when was it published?**

9 A. In 2009.

10 **Q. Professor Johnson, there are no page numbers on
11 your report, but if you could turn to section 4,
12 Research and Analysis.**

13 A. Yes.

14 **Q. Professor Johnson, does this section describe
15 the research method or methodology that you used in
16 gathering information for this report?**

17 A. Yes.

18 **Q. And in the second paragraph, it indicates, "To
19 gather relevant files, we developed a digital footprint
20 for each health-care institution. A digital footprint
21 represents key terms that are related to the firm -- for
22 example, names of the affiliated hospitals, clinics, key
23 brands, et cetera."**

24 **Did I read that correctly?**

25 A. Yes.

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1 **Q. Can you describe what that means, the related
2 healthcare institutions? Can you describe the research
3 in terms of -- what were you doing? You identified
4 certain entities; is that correct?**

5 A. That's correct.

6 **Q. Can you describe then what you did?**

7 A. Our research objective was to understand the
8 extent of inadvertent disclosure in the healthcare
9 industry, so as a proxy to begin that study we chose to
10 focus on the top ten publicly traded healthcare
11 companies.

12 And for each of those companies, we developed a
13 digital footprint. Some people call it a digital
14 signature. Really they're just a set of search terms
15 very much like if you were to use Google and search for
16 those companies.

17 In this case, we used those same search terms in
18 peer-to-peer file-sharing networks to uncover documents
19 that might be being shared that were somehow related to
20 those firms.

21 **Q. And as a result of the digital footprint, you
22 found documents that were being shared by the top ten
23 healthcare institutions; is that correct?**

24 A. Yes. We found, as you might imagine, many,
25 many healthcare-related documents.

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1 Whether or not they related to those top tens
2 firms in many ways wasn't really our intent. It was to
3 use those as a way to just get a picture of what is
4 out there, so understanding kind of key medical terms
5 that would uncover files. And beyond those ones that
6 we developed for each of those top ten firms, we
7 included other just generic healthcare-related terms.

8 Our objective was really to get a cross-section
9 of as much information as we could.

10 **Q. And when you developed the digital footprint,
11 did you then deliver that to Tiversa and they actually
12 did the search based on those terms that were contained
13 in your digital footprint?**

14 A. Yes.

15 **Q. And so the information that was gathered as a
16 result of those search terms was gathered using
17 Tiversa's technology; correct?**

18 A. Yes.

19 **Q. You indicate, also in your section 4, the last
20 section, "With the help of Tiversa Inc., we searched
21 P2P networks using our digital signature over a
22 two-week period (in January of 2008)"; is that correct?**

23 A. Yes.

24 **Q. Okay. And so the information that you received
25 or the documents that were gathered for the first part**

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1 **of your research using this methodology was gathered
2 during the first -- well, during a two-week period in
3 January of 2008; correct?**

4 A. Yes.

5 **Q. If you turn to the next page of your report,
6 just above the chart that's located there -- I'm sorry.
7 Page -- it has 0011 on it.**

8 A. Yes.

9 **Q. The last sentence above the chart, it says: By
10 randomly sampling over a 14-day period, we collected
11 approximate 3300 files for further manual analysis; is
12 that correct?**

13 A. Yes.

14 **Q. And what kind of manual analysis was done?**

15 A. Physically viewing the files.

16 **Q. And was that done by Dartmouth or was that done
17 by Tiversa?**

18 A. It was done by Dartmouth.

19 **Q. Okay. Below the chart, it reads: Of the
20 3300 documents in our sample, 50.3 percent could be
21 immediately identified as duplicate copies of the same
22 file; correct?**

23 A. Yes.

24 **Q. And so that took your number down pretty
25 significantly and, well, it obviously took it down by**

25 (Pages 756 to 759)

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1 50 percent.
 2 A. Yes.
 3 Q. You go on to indicate that through a manual
 4 analysis of the remaining 1600 files, you found that
 5 71 percent were not relevant to healthcare or the
 6 organizations under consideration; correct?
 7 A. Yes.
 8 Q. So you have these search terms. You provide
 9 them to Tiversa. Tiversa using its technology goes out
 10 and searches peer-to-peer networks, and they find about
 11 3200 files, half of which was duplicate, and then only a
 12 certain number of those are even relevant to the
 13 searches that -- the search terms that you provided;
 14 correct?
 15 A. Correct.
 16 Q. In fact, you indicate on the next page -- this
 17 is 12 -- in the first full paragraph, you said, "The
 18 most common type of files found were newspaper and
 19 journal articles" --
 20 A. Yes.
 21 Q. -- correct?
 22 "Followed by documents associated with students
 23 studying medicine."
 24 A. Yes.
 25 Q. Okay. And so you found a lot of documents that

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1 were dealing directly with medical issues, such as
 2 billings, letters to hospitals, and insurance claim
 3 forms; correct?
 4 A. Yes.
 5 Q. And you describe that portion of the study as
 6 phase one in terms of the research?
 7 A. Yes.
 8 Q. If you turn to the next page, which is 000013,
 9 you indicate that, in the first full paragraph there,
 10 however, that you did find a hospital-generated
 11 spreadsheet of personally identifying information on
 12 recently hired employees; correct?
 13 A. Yes.
 14 Q. And so that document was actually found using
 15 your search terms that you provided to Tiversa using
 16 Tiversa's technology.
 17 A. Yes.
 18 Q. You then go on to describe in the next paragraph
 19 the second stage of your analysis.
 20 You indicate, "As a second stage of our
 21 analysis, we then moved from sampling with a large net,"
 22 so is it fair to say that you described the first stage
 23 and the first methodology used as a large net?
 24 Correct?
 25 A. Yes.

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1 Q. "To more specific and intentional searches"; is
 2 that correct?
 3 A. Yes.
 4 Q. So what did you do to kind of narrow it down to
 5 more intentional and specific searches?
 6 A. So over the next six months, we continued
 7 searching, particularly looking in places -- and again,
 8 this would be Tiversa looking in places where we had
 9 seen potentially interesting leaks and watching to see
 10 if something might also leak out of that, that
 11 file-sharing user.
 12 And I guess if you were trying to make a
 13 physical analogy -- and the physical analogies to the
 14 digital space are always a little bit challenging --
 15 but it's as if we had come upon a box sitting out in
 16 front of a company with the word "free" on the side, and
 17 in that box were DVDs, CDs, maybe a few Playboy
 18 magazines, and so other miscellaneous correspondence
 19 that looked like it might be related to the business.
 20 And we thought, Oh, that's kind of interesting. Maybe
 21 we'll walk by and see what's in that box in another few
 22 weeks to see what they have out on the sidewalk this
 23 week. And then we would stop by in another few weeks
 24 and look in the box again to see what were they sharing
 25 now.

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1 Q. Did you find those boxes -- extending the
 2 analogy, did you find those boxes during the first phase
 3 of your research?
 4 A. They were identified by Tiversa through that
 5 first stage of the research, yeah, and potentially
 6 through other discovery they had subsequent to that.
 7 Q. And when you say "they," who are you talking
 8 about?
 9 A. Tiversa.
 10 Q. Okay. Because in the second sentence of the
 11 first paragraph, you say, "Using information from the
 12 first sampling, we examined shared files on hosts where
 13 we had found other dangerous data."
 14 Did I read that correctly?
 15 A. Yes.
 16 Q. Okay. And so is that to say that those hosts
 17 were identified using the digital footprint in your
 18 original -- the first phase of your study?
 19 A. Yes. Though I think what we're trying to
 20 convey and the meaning we're trying to convey in that
 21 sentence is that we're learning, and in the process of
 22 doing the research, we're learning terms that are useful
 23 to search on, we're learning about where things are
 24 leaking, so it's a learning process.
 25 Q. But those hosts were identified using the

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1 **digital footprint used in the first phase of your**
 2 **study.**
 3 A. Potentially, but I wouldn't say it was limited
 4 to that.
 5 **Q. So you indicate that "Using this approach," in**
 6 **the very next paragraph, "we uncovered far more**
 7 **disturbing files. For a medical testing lab, we found a**
 8 **1,718-page document containing patient Social Security**
 9 **numbers, insurance information, and treatment codes for**
 10 **thousands of patients. Figure 4 shows a redacted**
 11 **excerpt of just a single page."**
 12 **And if we turn to the next page.**
 13 **Now, is it your understanding that this is a**
 14 **redacted version of what's been now commonly called the**
 15 **1718 File that belonged to LabMD?**
 16 A. Yes.
 17 **Q. And is it your testimony that Tiversa found this**
 18 **file?**
 19 A. Yes.
 20 **Q. And do you know whether or not Tiversa found**
 21 **this file based on your search criteria or based on**
 22 **something else?**
 23 A. It was based on the learning that we were
 24 experiencing through that first phase one.
 25 **Q. What learning was that?**

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1 A. Well, each time we would do searches, we'd
 2 learn how useful those search terms are.
 3 So, for example, a very generic term like
 4 "medical" or "healthcare" in some sense is a very broad
 5 term and may uncover useful things, may uncover lots of
 6 those files that you pointed out earlier that were not
 7 relevant to us.
 8 Sometimes we would stumble upon search terms
 9 that we thought were quite clear but in fact may have
 10 been related to something else.
 11 For example, if a large medical institution had
 12 sponsored a concert of a popular rock band, we might
 13 think, wow, that's a -- HCA, you know, that's a large,
 14 number one, publicly traded firm in the U.S. in
 15 healthcare, but when we search on HCA, we find many,
 16 many songs related to a concert venue that they had
 17 sponsored and many of them not relevant, so we might
 18 learn from that that that's not the best search term to
 19 be using.
 20 **Q. Do you know what search term was used to find**
 21 **the 1718 File?**
 22 A. No.
 23 **Q. So is it fair to say that the first phase of**
 24 **your research took place during a two-week period of**
 25 **January 2008? Correct?**

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1 A. Yes.
 2 **Q. So is it fair to say that the 1718 File was not**
 3 **found during that period?**
 4 A. To my knowledge, that's true.
 5 **Q. If we could turn to 15.**
 6 **I think it's two pages away, Professor.**
 7 **That's good.**
 8 **You indicate that "For a hospital system, we**
 9 **found two spreadsheet databases that contained detailed**
 10 **information on over 20,000 patients including**
 11 **Social Security numbers, contact details, and insurance**
 12 **information."**
 13 **Did I read that correctly?**
 14 A. Yes.
 15 **Q. Is it your understanding that this document also**
 16 **was found in the second phase of your research?**
 17 A. Yes.
 18 **Q. And it was also found by Tiversa using Tiversa's**
 19 **technology?**
 20 A. Yes.
 21 **Q. It's my understanding then from the report that**
 22 **there was a six-month period in which this more narrow**
 23 **intentional search or searches were being conducted. Is**
 24 **that correct?**
 25 A. Yes.

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1 **Q. And those were being conducted by Tiversa.**
 2 A. Yes.
 3 **Q. Using their technology.**
 4 A. Yes.
 5 **Q. Do you know when approximately the second stage**
 6 **or the second phase of your research began?**
 7 A. It was later in the spring of that year.
 8 **Q. So it was later in the spring of 2008?**
 9 A. Correct.
 10 **Q. So just to try and narrow down a time, we would**
 11 **agree that January and February are winter.**
 12 A. It depends where in the country you live.
 13 **Q. Well, you were at Dartmouth.**
 14 A. It was winter at Dartmouth.
 15 **Q. And so when does spring start at Dartmouth?**
 16 A. It's all in the eye of the beholder.
 17 So to answer your question, the second phase
 18 really commenced in a nonspecific date. It wasn't like
 19 we stepped off the curb on January 27. It really was
 20 the goal to begin to uncover and look for other files
 21 that were leaking.
 22 Our research objective was to understand the
 23 types of files that leaked and how you might protect
 24 against those leaks, understand why they might be
 25 leaking, and so our objective was not to look for some

1 specific time period or some specific place or even a
2 specific organization. That was not our objective.

3 **Q. And so what was the objective really of the**
4 **study?**

5 A. I think the objective is quite clear from this
6 paper and others that I have authored, and that is to,
7 number one, understand the risks that companies face
8 with inadvertent disclosure.

9 Peer-to-peer file sharing represents one
10 instance or type of inadvertent file sharing,
11 inadvertent disclosure. There are many other ways that
12 files are inadvertently disclosed, when you lose a
13 laptop or put something on a flash drive and lose it,
14 when items are inappropriately posted to a Web site.

15 There are many, many types of inadvertent disclosure.

16 Our objective was to understand this broad class
17 of security threats and risks. Peer-to-peer file
18 sharing became in many ways our laboratory because it
19 was a particularly convenient and useful way to
20 understand the types of files that were not being
21 well-protected by firms and that were vulnerable.

22 And so our objective was to understand the
23 risks those posed to organizations and to understand
24 why the files became vulnerable, how did they end up
25 being in a position where they could be shared in a

1 harmful to their customers.

2 **Q. Mr. Johnson, who is Chris Gormley?**

3 A. He was a -- I think his title at Tiversa was
4 chief operating officer.

5 **Q. Could we turn to tab 9, RX 483. It's tab 9 in**
6 **your...**

7 **Are you there, Professor?**

8 A. Yes.

9 **Q. Professor, RX 483, would you agree, is a series**
10 **of e-mails between you and Chris Gormley; is that**
11 **correct?**

12 A. Yes.

13 **Q. And Mr. Gormley, was he your main contact at**
14 **Tiversa during the research for this study?**

15 A. Yes. At that time, yes.

16 **Q. And as your main contact at Tiversa, you and**
17 **Mr. Gormley would discuss the progress of the research**
18 **or any tweaks needing to be made to the research; is**
19 **that correct?**

20 A. Yes.

21 **Q. And what I'd like to do is go down to the e-mail**
22 **from -- it appears to be from Mr. Gormley to you, sent**
23 **on April 29, 2008 at 3:43.**

24 **Do you see that?**

25 A. Yes.

1 peer-to-peer file-sharing system, which was not
2 obviously designed to share confidential healthcare
3 information.

4 **Q. And so did your research actually educate you**
5 **and I guess people reading it about how files are**
6 **actually located on peer-to-peer networks?**

7 A. Our objective wasn't so much to understand
8 peer-to-peer networks themselves. Certainly we had
9 learned a lot about peer-to-peer networks and understood
10 the very strange intricacies of peer-to-peer networks.
11 But our objective was really to understand these
12 inadvertent disclosures and the risks they pose to
13 organizations.

14 **Q. And that's -- the presumption I guess running**
15 **through your study is that many of these peer-to-peer**
16 **disclosures are inadvertent.**

17 A. Yes.

18 **Q. Why did you make that kind of a presumption**
19 **running through your research?**

20 A. Well, our belief was that few of the firms that
21 were inadvertently sharing this information on
22 peer-to-peer file-sharing networks would purposely do
23 that, because the information they were sharing was
24 confidential information that could affect their firm
25 and confidential information that was potentially

1 **Q. It reads: "Eric, Medical is a treasure trove of**
2 **information, but it's not necessarily coming from big**
3 **hospitals. We've got tons of individual practitioners**
4 **(most notably psychiatrists) who disclose (since they**
5 **write up their findings). I'd like to give you a quick**
6 **call regarding the info - what's your number? I can't**
7 **find your card right now."**

8 **Did I read that correctly?**

9 A. Yes.

10 **Q. And so you would -- you and Mr. Gormley would**
11 **communicate about the research and the progress of the**
12 **research; correct?**

13 A. Yes.

14 **Q. Would you agree that Mr. Gormley is talking**
15 **about the first stage of the -- the first stage of the**
16 **research in that he mentions the big hospitals which you**
17 **focused on in the first stage?**

18 A. Yes.

19 **Q. Now, Mr. Johnson, if we go down to the next**
20 **e-mail, it's Tuesday, the 29th, 2008 at 1:27, which I**
21 **guess is before the one we just read, and it's from you**
22 **to Mr. Gormley; is that correct?**

23 A. Yes.

24 **Q. It says: "Thanks - I had not seen it. We are**
25 **coming well on the medical files - finished going**

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1 through all the files. We are working on the report
 2 right now. We turned up some interesting stuff - not as
 3 rich as the banks, but I guess that could be expected.
 4 Any chance you could share a couple other of your recent
 5 medical finds that we could use to spice up the report?
 6 You told me about the one database your found that could
 7 really boost the impact of the report. Certainly will
 8 coordinate with you on the report and release. I forgot
 9 to ask - did you guys also grab searches related to our
 10 digital signature?"

11 Did I read that correctly?

12 A. Yes.

13 Q. So, Mr. Gormley, you've indicated that you
 14 believe that this is during the first stage or at least
 15 the first stage had already -- the first-stage research
 16 had already been done; correct?

17 A. Well, in terms of, as you read, the files had
 18 been collected, they were delivered to us sometime later
 19 in the winter. We were in the process of reviewing
 20 them, as you read.

21 So I would guess, you know, if you were
 22 thinking about phase one, that's still all part of
 23 phase one.

24 Q. Okay. And do you recall whether or not
 25 Mr. Gormley had shared with you a couple of their recent

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1 medical finds that you guys could use to spice up the
 2 report?

3 A. He had -- as you mentioned, as you can see here,
 4 we had begun to discuss some of these things, and it's
 5 really based on the learning from what we had been
 6 doing.

7 If you read through -- and I think we even
 8 discussed this in the deposition -- I don't think
 9 that -- first of all, we had no financial relationship
 10 with Tiversa. And we were a relatively low priority of
 11 theirs.

12 That is, when you say they were using their
 13 technology, well, in some sense there's many levels at
 14 which they can be searching for things. My suspicion at
 15 the time was that we were at a pretty low level.

16 And so as we were moving along, I was pushing,
 17 and as you can see here, I was pushing in this e-mail
 18 for them to spend more time on this and to help us
 19 search for more files that would give us a greater
 20 insight into the problem.

21 Q. And so the last statement, "did you guys also
 22 grab searches related to our digital signature," the
 23 digital signature is in fact your search terms;
 24 correct?

25 A. Correct.

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1 Q. So you were actually asking for finds that
 2 Tiversa had to spice up your report that were outside of
 3 your digital signature; is that correct?

4 A. No. I think you misinterpreted that sentence.

5 What we had done both in this research and in
 6 earlier research was not just look for files based on
 7 our digital signature, but we were also interested in
 8 what other users in peer-to-peer file-sharing networks
 9 were searching for.

10 I guess the analogous thing, if you are
 11 familiar with Google, Google will post lots of very
 12 interesting information about what users in Google are
 13 searching for. And Tiversa has the capability to do a
 14 similar thing in peer-to-peer file-sharing networks,
 15 that is, to look and see what kind of user-issued
 16 searches are being conducted all over the country and
 17 all over the world.

18 And it was in some sense not the primary focus
 19 of our work, but we had asked them to do that as part of
 20 this research. We had done that on earlier research on
 21 banking with them. And I'm asking Chris at that point.
 22 It had not yet been delivered to us, and we had wanted
 23 to see what kinds of activity they had seen on
 24 user-issued searches.

25 Q. So do you know whether or not the 1718 File was

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1 a file that Tiversa sent you at your request to spice up
 2 the report?

3 A. So the 1718 File was one of many files that we
 4 then received from Tiversa over the next months.

5 Q. The question more specifically is, was it one of
 6 the files that he sent you to spice up your report,
 7 which fell outside of your digital signature?

8 A. It certainly was a high-impact file and one of
 9 many that they were able to find for us. Whether they
 10 fell outside of the digital signature, again, they and
 11 we were learning in this process.

12 And in fact, even capturing the user-issued
 13 searches was a way to learn because many of the users in
 14 this network that were ahead of us, ones that we
 15 probably believed to have criminal intent, have learned
 16 very specific terms to search for that we wouldn't have
 17 guessed, maybe names of particular software that was
 18 used in healthcare or particular naming conventions of
 19 files.

20 So, for example, each time we would see a file,
 21 we would often learn from that file things that we might
 22 want to search for. And likewise, the user-issued
 23 searches were a way to learn where one might look for
 24 the kinds of files that we were seeking.

25 Q. If we could go back to CX 382, please, and

1 000013.
 2 So, Dr. Johnson, the second full paragraph --
 3 I'm going to read it -- says, "As a second stage of our
 4 analysis" -- and I'm sorry. It's on page 13.
 5 Are you there?
 6 A. I think so.
 7 Q. It says, "As a second stage of our analysis, we
 8 then moved from sampling with a large net to more
 9 specific and intentional searches. Using information
 10 from the first sampling, we examined shared files on
 11 hosts where we had found other dangerous data. One of
 12 the features enabled by LimeWire and other sharing
 13 clients is the ability to examine all the shared files
 14 of a particular user (sometimes called 'browse host').
 15 Over the next six months, we periodically examined hosts
 16 that appeared promising for shared files."
 17 Then the next paragraph goes on and says, "Using
 18 this approach, we uncovered far more disturbing files,"
 19 and you go on to describe the 1718 File; correct?
 20 A. Correct.
 21 Q. You don't know whether or not the 1718 File was
 22 actually discovered using this methodology or whether it
 23 was one of the documents that Tiversa just sent you to
 24 spice up the report.
 25 A. Well, I know that we didn't find it in phase one

1 A. No.
 2 Q. Well, it actually says here that "Using
 3 information from the first sampling, we examined shared
 4 files on hosts where we had found other dangerous
 5 data."
 6 Did I read that correctly?
 7 A. Yes.
 8 Q. And the first sampling basically focused on the
 9 top ten medical care providers; correct?
 10 A. That's correct.
 11 Q. LabMD is not a top ten medical care provider, is
 12 it?
 13 A. No, it's not. But the terms that we used, many
 14 of them would turn up files from all kinds of places
 15 because many of the terms are rather generic.
 16 Think about a Google search. If you type in
 17 "Eric Johnson" into Google, you'll find some
 18 information about me, but you'll find information about
 19 many other Eric Johnsons and ones that might be more
 20 famous like the guitarist Eric Johnson.
 21 And just as in that case, if we type in
 22 "West Medical Center," we might find information about
 23 West Medical Center, but because the word
 24 "medical center" is in there, we find information about
 25 many, many medical centers. And if LabMD or any other

1 and that it was found as part of our learning process
 2 with Tiversa during this time.
 3 And just as it describes there and I described
 4 earlier, when you find files from a user, it's really a
 5 feature that many of the file-sharing systems provide
 6 their users.
 7 You know, if you like Madonna music and you
 8 find a song from Madonna on a particular user, you may
 9 go back to see later in a few weeks whether more
 10 Madonna files had been shared by that same user or
 11 whether there may be other music being shared by that
 12 user that's similar to that genre and that you might
 13 enjoy.
 14 We used that same capability, very much as I
 15 described earlier, kind of looking in the discard box or
 16 the sharing box that sat out in front of a business or a
 17 home to see what else that user might be sharing.
 18 Q. A couple more questions. I thought I was
 19 finished, but a couple more questions. I'm sorry.
 20 And I read that paragraph and the beginning of
 21 the next paragraph because I think I misinterpreted it,
 22 because it appears to me that it's a little misleading.
 23 And do you see how people could have been
 24 misled about the methodology used to find the
 25 1718 File?

1 company were providing services to an organization
 2 called West Medical Center or Medical Center or anything
 3 with "medical" in the title, those all potentially come
 4 up as targets in the search.
 5 And so that, you know, as I said earlier, our
 6 goal really was not so much to focus on top ten
 7 companies. It was to use them as a surrogate to really
 8 determine what to search for to begin with. And that
 9 was very much a learning process for us as part of the
 10 research.
 11 Q. But it says here, "Using information from the
 12 first sampling, we examined shared files on hosts where
 13 we had found other dangerous data."
 14 Do you see how that could mislead the reader
 15 into thinking that you found these hosts during the
 16 first phase of your research?
 17 A. Well, no.
 18 MR. SHEER: Objection. Asked and answered.
 19 THE WITNESS: We did in fact do that. We did in
 20 fact track hosts that we had seen --
 21 JUDGE CHAPPELL: Excuse me.
 22 The objection is overruled.
 23 THE WITNESS: So we did in fact do that. We
 24 did in fact look at hosts that we had identified in the
 25 first, so I'm not sure why you believe it's misleading.

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1 BY MR. SHERMAN:
 2 **Q. Well, because it appears that you tell your**
 3 **readers that using this approach you uncovered the**
 4 **1718 File when in fact you don't really know how the**
 5 **1718 File was uncovered.**
 6 A. No. I do know that -- this process that we
 7 used. But we're not -- I guess the point in our
 8 research was not to create some kind of a forensic
 9 approach to how we found any individual file. We
 10 weren't -- you know, all of our -- all of our reports
 11 were redacted. Our point was not to embarrass or look
 12 for any specific company. Our -- our purpose was to
 13 understand peer-to-peer file sharing as an inadvertent
 14 disclosure mechanism.
 15 JUDGE CHAPPELL: Did your first sampling find
 16 any data or file related to LabMD?
 17 THE WITNESS: Not that I know of.
 18 JUDGE CHAPPELL: Thank you.
 19 BY MR. SHERMAN:
 20 **Q. The last sentence on that page says, "All**
 21 **together, almost 9,000 patient identities were exposed**
 22 **in a single file, easily downloaded from a peer-to-peer**
 23 **network."**
 24 **Did I read that correctly?**
 25 A. Yes.

1 Now, does that mean that someone in Beijing
 2 necessarily would be looking for that same file that
 3 day? It's happenstance.
 4 JUDGE CHAPPELL: Of course, in Beijing they're
 5 limited as to what they can look for, aren't they?
 6 THE WITNESS: Well, we would wish. If you're
 7 referring to --
 8 JUDGE CHAPPELL: I'm referring to the censoring
 9 of their Internet.
 10 THE WITNESS: If you're referring to that they
 11 block Facebook or things like that, it's quite simple to
 12 get around it and the -- our experience is that folks in
 13 China are avid file sharers.
 14 JUDGE CHAPPELL: All right. Suppose the
 15 government isn't aware of all that, the government of
 16 China.
 17 THE WITNESS: I suppose that they are unable to
 18 stop it.
 19 JUDGE CHAPPELL: Sorry for the rabbit trail.
 20 Go ahead.
 21 MR. SHERMAN: It's your show, Your Honor.
 22 BY MR. SHERMAN:
 23 **Q. How many such boxes are there on the Internet?**
 24 A. At any one given time, there are millions of
 25 users.

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1 **Q. There's a difference between easily downloaded**
 2 **and easily found; is that correct?**
 3 A. I'm not sure I see your point.
 4 **Q. Well, is it easier to download a file using a**
 5 **peer-to-peer network or is it easier to find it using a**
 6 **peer-to-peer network, if you know? You might not know.**
 7 A. Of course it's easy to download it once you've
 8 found it.
 9 If you're asking is it easy to find any specific
 10 file, it really depends on the context with which you're
 11 asking that question.
 12 Let's go back to my physical analogy. A box is
 13 sitting out in front of LabMD with the word "free" on
 14 the side, and in that box are DVDs, CDs, magazines and
 15 various and sundry documents related to LabMD. People
 16 are walking by that box every day. Every day they're
 17 walking by that box, and anyone at any point in time
 18 could look in that box. It turned out that at some
 19 point in time someone at LabMD threw that file, the one
 20 that you're talking about, into the box.
 21 And when we say "easy," that means that once it
 22 was in that box, anybody walking by that box, anybody
 23 looking, anybody searching, anybody that had been
 24 looking in that box before could find that file.
 25 So in that sense, it was exposed and easy.

1 **Q. And so if there are millions of users and**
 2 **millions of boxes that say "free" on it, but I'm**
 3 **actually looking for -- I don't know -- the original**
 4 **copy of the Magna Carta, how likely is it that I'm going**
 5 **to find it?**
 6 A. If you were looking for any specific file, it
 7 would really depend on the behavior of that user who's
 8 sharing it.
 9 So if that user was an active user -- what I
 10 mean by that is that they used LimeWire and they used it
 11 every day, but maybe they allowed it to run on their
 12 computer all the time, which there are many users that
 13 do that -- over time they would become what is often
 14 called in the peer-to-peer file sharing group, they
 15 would call them uber, uber nodes.
 16 And if you were an uber node, that means that
 17 you're sharing lots of files and you're always
 18 available. And if you were in that group, it would be
 19 very likely to have your file found.
 20 If you, on the other hand, periodically used a
 21 file-sharing system maybe once every three months for
 22 ten minutes, yeah, there's a very short window of time
 23 that the box is sitting out with the word "free" on the
 24 side.
 25 **Q. 403, please.**

1 Professor Johnson, turn to tab 3, please.
 2 Are you there, Professor?
 3 A. Yes.
 4 Q. Do you know who Carl Settlemyer is?
 5 A. Yes.
 6 Q. He works for the FTC; is that correct?
 7 A. Yes.
 8 Q. And he contacted you in early 2009 about your
 9 new article; correct?
 10 A. Yes.
 11 Q. And this is an e-mail from Mr. Settlemyer to
 12 you, indicating that he's somehow become aware that you
 13 have a new article concerning health information
 14 available on peer-to-peer networks; correct?
 15 A. Yes. I think I -- it looks like I sent him the
 16 article.
 17 Q. You sent it to him; is that right?
 18 A. That's correct.
 19 Q. Well, if you turn to the next page -- it's the
 20 same 403, RX 403.
 21 (Pause in the proceedings.)
 22 Are you there, Professor?
 23 A. I see it on the screen here. Yes.
 24 Q. Okay. Good.
 25 This indicates that in fact you responded to

1 Mr. Settlemyer and you sent him a copy of the article;
 2 correct?
 3 A. Yes.
 4 Q. Now, if you look back on page 1 of that list of
 5 e-mails, it says, "As you know from our past
 6 discussions, this is an area of interest to us."
 7 Do you see that?
 8 A. Yes.
 9 Q. Have you had past discussions with members of
 10 the FTC?
 11 A. I think we were somehow became acquainted
 12 through some earlier work we had done in banking and
 13 through some resulting testimony that happened for the
 14 U.S. House on that.
 15 Q. Professor Johnson, did Dartmouth College provide
 16 the 1718 File to the FTC, to your knowledge?
 17 A. No.
 18 MR. SHERMAN: One moment, Your Honor. I may be
 19 finished.
 20 (Pause in the proceedings.)
 21 BY MR. SHERMAN:
 22 Q. Professor Johnson, you've used an analogy that
 23 searching on a peer-to-peer network is like walking past
 24 a box with the word "free" on it; correct?
 25 A. Yes.

1 Q. If you walk past a table, nobody is around, and
 2 there's a wallet sitting there, are you entitled to the
 3 contents?
 4 The only thing that's missing in this scenario
 5 is the word "free" written on the side of it.
 6 A. I can't speculate.
 7 Q. If you walk past my house and my front door is
 8 wide open and you see my television sitting inside,
 9 there's nobody to stop you from going in and taking it;
 10 is that right?
 11 A. No one is there to stop you. That's correct.
 12 Q. The only thing missing is the word "free."
 13 So if there was a sign that says "free" over the
 14 door, would that give you the right to go in and take
 15 whatever was inside?
 16 A. Well, I can't speculate on that.
 17 Q. What about medical files specifically where --
 18 you were looking for medical files; correct?
 19 A. Correct.
 20 Q. You were looking for medical information;
 21 correct?
 22 A. Correct.
 23 Q. And so it was your assumption and that of your
 24 research partner that if these files were on a
 25 peer-to-peer network, they had "free" written on them.

1 A. Well, in fact, that's true, that the users of
 2 those networks had made those publicly available and put
 3 them out in an exchange system that is freely making
 4 them exchangeable with other users in the network, and
 5 they had explicitly done so.
 6 Q. Well, that's interesting that you use the word
 7 "explicit" when your report is about inadvertent file
 8 sharing.
 9 A. Well, explicit in the sense that they would have
 10 to have made the box, written "free" on the side and put
 11 the file in it.
 12 Now, maybe they didn't mean to put the file in
 13 the box, but the fact was, they downloaded a client that
 14 was specifically designed to share information with
 15 other users, and they used the tools of that client to
 16 share information with other users, and it was very
 17 explicit that they were sharing.
 18 Q. Inadvertently.
 19 A. Well, maybe from our point of view for sure.
 20 MR. SHERMAN: I have no further questions.
 21 JUDGE CHAPPELL: Any cross?
 22 MR. SHEER: Judge, would this be an appropriate
 23 time for lunch, our lunch break?
 24 JUDGE CHAPPELL: Well, we'll take lunch, but I
 25 have a few things to cover.

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1 Could someone address for the record whether the
2 issue has been resolved regarding Mr. Van Dyke's
3 Exhibit RX 529 and the possible public disclosure to one
4 member of the public.
5 MS. VANDRUFF: I'd be happy to address that,
6 Your Honor.
7 Thank you, Your Honor. Laura VanDruff for
8 complaint counsel.
9 Yes. Mr. Sherman, Mr. Van Dyke and I met with
10 the woman in the gallery about the in camera issue, and
11 it's been resolved to Mr. Van Dyke and complaint
12 counsel's satisfaction, and I believe also to the
13 satisfaction of respondent's counsel.
14 MR. SHERMAN: That's correct, Your Honor.
15 JUDGE CHAPPELL: All right. Thank you.
16 MS. VANDRUFF: Thank you, Your Honor.
17 JUDGE CHAPPELL: How much time do you think
18 you'll need for cross?
19 MR. SHEER: Your Honor, just a few minutes I
20 think.
21 JUDGE CHAPPELL: I have a couple questions
22 before we break.
23 If I understand it, sir, you, while at
24 Dartmouth, conducted research funded by U.S. government
25 funds pursuant to a grant; is that correct?

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1 THE WITNESS: Correct.
2 JUDGE CHAPPELL: And you shared at least part of
3 that research you conducted using government funds with
4 Tiversa; is that correct?
5 THE WITNESS: Tiversa was a research partner, so
6 I'm not quite sure.
7 JUDGE CHAPPELL: They were a partner, meaning
8 they -- then they directly benefited from the use of
9 government funds; is that correct?
10 THE WITNESS: They did not benefit from
11 government funds in the sense that there was no
12 financial relationship with Tiversa.
13 JUDGE CHAPPELL: Okay. Let's get back to my
14 question.
15 Did you conduct any research pursuant to a
16 government grant that was shared with Tiversa?
17 THE WITNESS: Well, it was shared with everyone,
18 I mean. We published it and made it publicly available,
19 so...
20 JUDGE CHAPPELL: Well, when I asked you this
21 earlier, rather than a yes or no, you said Tiversa was a
22 partner, a research partner.
23 Does that mean a research partner shares more of
24 your information than anyone else?
25 THE WITNESS: There was co-discovery occurring.

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1 I'm not quite sure if I understand the
2 question.
3 JUDGE CHAPPELL: I'm just trying to follow the
4 money here, sir.
5 THE WITNESS: Excuse me?
6 JUDGE CHAPPELL: I'm trying to follow the
7 money.
8 There was U.S. government money expended on
9 research you did at Dartmouth; is that correct?
10 THE WITNESS: There was.
11 JUDGE CHAPPELL: And that research, at least
12 part of it, was shared with Tiversa; is that correct?
13 THE WITNESS: It certainly was correct as it was
14 shared with everyone.
15 JUDGE CHAPPELL: All right. Thank you.
16 MS. VANDRUFF: Your Honor, before we adjourn for
17 lunch, may I be heard --
18 JUDGE CHAPPELL: Sure.
19 MS. VANDRUFF: -- on one housekeeping issue?
20 JUDGE CHAPPELL: Just so it's housekeeping and
21 not housecleaning. There is a difference. But go
22 ahead.
23 MS. VANDRUFF: I believe it's housekeeping.
24 JUDGE CHAPPELL: All right. Housekeeping is
25 more light --

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1 MS. VANDRUFF: I hope it's light.
2 JUDGE CHAPPELL: -- not as serious. Nobody is
3 going to argue about it.
4 MS. VANDRUFF: I intend for it to be light.
5 My question, Your Honor, is just for a
6 clarification of Your Honor's ruling. And I --
7 JUDGE CHAPPELL: Regarding?
8 MS. VANDRUFF: -- mean no disrespect.
9 With respect to complaint counsel's witness,
10 Professor Shields.
11 We have not excused him because I wanted to
12 make clear that you -- well, whether you intend for
13 complaint counsel to call him after we rest our case as
14 in this afternoon or after respondent's counsel has had
15 an opportunity to present its evidence.
16 JUDGE CHAPPELL: No. Once you rest your case,
17 if there's no objection, I'm allowing you to call your
18 rebuttal witness.
19 MR. SHERMAN: There's absolutely no objection.
20 I think that's the way we had discussed and agreed that
21 it would go, with the court's indulgence of that.
22 MS. VANDRUFF: I see, Your Honor.
23 And so just again so that there's no
24 misunderstanding, then we are not going to release
25 Professor Shields, and after the conclusion of this

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1 witness' examination, we will proceed and call him this
 2 afternoon.
 3 JUDGE CHAPPELL: You left out one part. The
 4 government is going to rest their case first.
 5 MS. VANDRUFF: Yes, Your Honor.
 6 JUDGE CHAPPELL: Then yes, you're correct.
 7 MS. VANDRUFF: Thank you, Your Honor.
 8 JUDGE CHAPPELL: All right. We'll reconvene at
 9 2:20.
 10 We're in recess.
 11 (Whereupon, at 1:11 p.m., a lunch recess was
 12 taken.)
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1 AFTERNOON SESSION
 2 (2:26 p.m.)
 3 JUDGE CHAPPELL: Let's go back on the record.
 4 Cross-exam?
 5 MR. SHEER: Good afternoon.
 6 - - - - -
 7 CROSS-EXAMINATION
 8 BY MR. SHEER:
 9 **Q. Professor Johnson, Dean Johnson, were any U.S.**
 10 **government contract monies that Dartmouth received and**
 11 **were used to support your research paid to Tiversa to**
 12 **support the research?**
 13 A. No.
 14 **Q. Did Dartmouth and Tiversa together share U.S.**
 15 **government funds in doing the research that you**
 16 **reported in CX 382, which is your data hemorrhaging**
 17 **article?**
 18 A. No.
 19 **Q. In conducting research reported in the article,**
 20 **did you search the P2P networks for files that contained**
 21 **sensitive consumer information?**
 22 A. No.
 23 **Q. Were all of the files that you examined in**
 24 **conducting the research that led to the data**
 25 **hemorrhaging article provided to you by Tiversa?**

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1 A. Yes.
 2 **Q. This morning you testified that you shared your**
 3 **research with everyone by publishing the article. Do**
 4 **you remember that?**
 5 A. Yes.
 6 **Q. In doing so, did you share files containing**
 7 **sensitive consumer information with anyone?**
 8 A. No.
 9 **Q. This morning, Mr. Sherman asked you about a**
 10 **paragraph on page 11 of CX 382. It included the**
 11 **sentence that reads, "Using information from the first**
 12 **sampling, we examined shared files on hosts where we**
 13 **found other dangerous data." Do you recall that?**
 14 A. Yes.
 15 MR. SHEER: Your Honor, in light of the court's
 16 May 8, 2014 order prohibiting eliciting testimony on the
 17 consequences of inadvertent file sharing, would the
 18 court permit a few questions following up on the
 19 sentence that I just read?
 20 JUDGE CHAPPELL: Are you saying he opened the
 21 door?
 22 MR. SHEER: I am.
 23 JUDGE CHAPPELL: Do you want to respond?
 24 MR. SHERMAN: I'm not sure which sentence he's
 25 referring to.

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1 MR. SHEER: It's page 11 of CX 382, and it
 2 reads, "Using information from the first sampling, we
 3 examined shared files on hosts where we found other
 4 dangerous data."
 5 MR. SHERMAN: I'm not sure what that's opening
 6 the door to. Are you alleging that that's opening the
 7 door to his opinion about harm caused by file sharing or
 8 potential --
 9 MR. SHEER: I'm wanting to understand what the
 10 dangerous data is.
 11 MR. SHERMAN: I don't see how that and -- I'm
 12 still at a loss to see how the danger of the data opens
 13 the door for his opinion with regard to the risk of harm
 14 by the disclosure of the data.
 15 JUDGE CHAPPELL: I think the ruling was that no
 16 testimony is allowed on the consequences.
 17 MR. SHERMAN: So once again, I don't see how
 18 that opens the door to him questioning Mr. Johnson about
 19 the consequences of that data. Whether or not that data
 20 is dangerous I guess is a matter of -- it's a matter of
 21 opinion, but dangerous in what way, so --
 22 JUDGE CHAPPELL: The best way to deal with this
 23 is for you to ask your question, and I'm going to
 24 instruct the witness not to answer until I've ruled.
 25 Then we'll see if there's an objection.

1 First question.
 2 BY MR. SHEER:
 3 **Q. What data are you referring to in that part of**
 4 **your article?**
 5 A. The danger --
 6 JUDGE CHAPPELL: Sir, hold on. I'll let you
 7 know when to answer.
 8 Is there an objection to that question?
 9 MR. SHERMAN: No, sir, there is no objection.
 10 JUDGE CHAPPELL: Go ahead.
 11 THE WITNESS: The dangerous data, is that what
 12 you mean?
 13 BY MR. SHEER:
 14 **Q. Yes.**
 15 A. What we're referring to is other files or
 16 information that we saw that led us to believe that
 17 there was a danger either in the data that was present
 18 or the data would be forthcoming that was dangerous.
 19 **Q. What kind of data was it?**
 20 JUDGE CHAPPELL: Any objection?
 21 MR. SHERMAN: No objection. This is where I
 22 thought he was going, and I have no objection to that,
 23 as long as he does not attempt to elicit an opinion
 24 with regard to the harms caused by that, by that
 25 information.

1 JUDGE CHAPPELL: Just so we're clear, sir, in
 2 this line of questioning, don't answer until I say
 3 "answer," and when you do answer, try to stay away from
 4 the subject of consequences of inadvertent disclosures
 5 of consumers' personal information. Understood?
 6 Okay. The last question -- I'll have the court
 7 report read it back -- he can answer.
 8 (The record was read as follows:)
 9 "QUESTION: What kind of data was it?"
 10 THE WITNESS: So it would be data that what we
 11 would term as dangerous, being data that looked as
 12 though it would be internal data related to the
 13 organization, data related to patients, anything that
 14 would lead you to believe that the data that was there
 15 was somehow related to the firm or individuals in the
 16 firm.
 17 BY MR. SHEER:
 18 **Q. What specific types of data are you referring**
 19 **to?**
 20 JUDGE CHAPPELL: Any objection?
 21 MR. SHERMAN: No objection.
 22 JUDGE CHAPPELL: Go ahead.
 23 THE WITNESS: So it really is all the kinds of
 24 things we talk about in the paper, so if we saw a
 25 spreadsheet of any type, we would consider that to be a

1 dangerous data, because largely file-sharing systems are
 2 used to share music and video and things like that, so
 3 if a spreadsheet popped out in a file-sharing network,
 4 we would see that as a flag that data that was
 5 potentially leaking from that organization.
 6 BY MR. SHEER:
 7 **Q. What specific kinds of information? For**
 8 **example, does the information include Social Security**
 9 **numbers?**
 10 A. Well, certainly that would be dangerous data.
 11 Yes.
 12 **Q. What other kind of data do you regard as**
 13 **dangerous?**
 14 JUDGE CHAPPELL: I think he's already been asked
 15 that question.
 16 Is there something you left out, sir, when you
 17 were asked that earlier?
 18 THE WITNESS: Categorically, any PHI would be.
 19 JUDGE CHAPPELL: What about copyrighted films or
 20 music? Is that dangerous?
 21 THE WITNESS: Copyrighted?
 22 JUDGE CHAPPELL: Films or music that happen to
 23 be on a P2P network?
 24 THE WITNESS: From our point of view, we
 25 wouldn't consider that to be of a dangerous nature.

1 Not that it's not a bad thing, but it's a different
 2 animal.
 3 JUDGE CHAPPELL: Okay.
 4 BY MR. SHEER:
 5 **Q. You just mentioned PHI.**
 6 **What is that?**
 7 A. Protected health information.
 8 **Q. What does it consist of?**
 9 A. Identity information, information related to an
 10 identity's health or medical conditions, information
 11 related to their insurance or other funding of their
 12 medical treatment.
 13 **Q. To whom was the information dangerous?**
 14 MR. SHERMAN: Objection. The question is vague
 15 in terms of -- the question was: "To whom was the
 16 information dangerous?" And I'm trying to figure out
 17 what information he's talking about, is it information
 18 from a specific document, which I don't think has been
 19 identified.
 20 MR. SHEER: I'm asking --
 21 JUDGE CHAPPELL: Do you want to rephrase?
 22 BY MR. SHEER:
 23 **Q. In the context of the statement that is made in**
 24 **your paper that "Using information from the first**
 25 **sampling, we examined shared files on hosts where we**

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1 found other dangerous data," to whom is that data
 2 dangerous?
 3 JUDGE CHAPPELL: Any objection?
 4 MR. SHERMAN: No objection.
 5 JUDGE CHAPPELL: Go ahead.
 6 THE WITNESS: To patients, consumers, and the
 7 firms themselves.
 8 BY MR. SHEER:
 9 **Q. In that same section on page 11, you refer to a**
 10 **browse host.**
 11 **What is a browse host?**
 12 JUDGE CHAPPELL: Are we past the touchy area
 13 here?
 14 All right. We're back to regular answering when
 15 you hear a question, unless there's an objection.
 16 THE WITNESS: Okay.
 17 JUDGE CHAPPELL: Go ahead.
 18 THE WITNESS: Browse host is simply the
 19 functionality that many file-sharing clients would
 20 provide that allows a user to inspect all the different
 21 files that another user is sharing.
 22 So rather than specifically seeing a search
 23 returned for -- say you're searching for Madonna and you
 24 would be able to see many, many users that are sharing
 25 different Madonna songs, but then the browse host

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1 functionality would allow a user to look at another
 2 user's music and all the files that they're sharing at
 3 one time.
 4 MR. SHEER: Thank you. I have no further
 5 questions at this time.
 6 JUDGE CHAPPELL: Redirect based on the recross?
 7 - - - - -
 8 REDIRECT EXAMINATION
 9 BY MR. SHERMAN:
 10 **Q. Professor Johnson --**
 11 JUDGE CHAPPELL: I should say based on the
 12 recross or the questions I asked after you finished your
 13 direct.
 14 BY MR. SHERMAN:
 15 **Q. Professor Johnson, you were asked about funding**
 16 **of your study and where the money went to pay for the**
 17 **study. You were asked specifically whether or not**
 18 **Tiversa received any compensation for the services it**
 19 **provided in terms of being the, I think as you**
 20 **described it, research partner on these research**
 21 **projects.**
 22 **Your answer is no to that; correct?**
 23 A. Correct.
 24 **Q. They did not receive any money.**
 25 A. Correct.

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1 **Q. Did an organization called the Privacy Institute**
 2 **receive any money with regard to the studies that were**
 3 **conducted pursuant to the grant that I showed you**
 4 **earlier today?**
 5 JUDGE CHAPPELL: First, let's figure out if he
 6 knows who that is with a foundation.
 7 BY MR. SHERMAN:
 8 **Q. Do you know what the Privacy Institute is?**
 9 A. I'm not certain.
 10 **Q. Have you heard of the Privacy Institute before?**
 11 A. I have heard of -- I've heard of different
 12 privacy advocacy groups. I'm not specifically sure I
 13 know of this one.
 14 But I think I can answer the question with
 15 respect to that, that to my knowledge, no money was
 16 shared with any privacy organization, particularly from
 17 our projects. Now, the grant is a large grant, and they
 18 may have been a partner in some other part of the grant,
 19 but not anything that I'm aware of.
 20 **Q. Have you ever received any payment from the**
 21 **Privacy Institute?**
 22 A. No.
 23 MR. SHERMAN: No further questions.
 24 JUDGE CHAPPELL: I have a few.
 25 This grant money you got that we talked about

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1 earlier, what is the money spent for exactly? How is it
 2 allocated? How is it spent?
 3 THE WITNESS: It funds direct labor of
 4 individuals, their time and efforts. It funds
 5 travel-related expenses to conferences, to team
 6 meetings, to workshops.
 7 JUDGE CHAPPELL: Does it fund hardware or
 8 software that are used by the people working on the
 9 projects?
 10 THE WITNESS: It likely would fund computer
 11 hardware.
 12 JUDGE CHAPPELL: So when you take this grant
 13 money and you've got -- let's just -- what do you have,
 14 a staff that works on these projects?
 15 THE WITNESS: Correct.
 16 JUDGE CHAPPELL: And that same staff working on
 17 the project, could they also be working with a research
 18 partner at the same time?
 19 THE WITNESS: I'm not sure if I understand that
 20 question.
 21 JUDGE CHAPPELL: Well, do they allocate their
 22 time so that this hour is going to the money funded by
 23 the research grant, this hour is not being funded by
 24 that because we're working with our research partner
 25 Tiversa? That's what I'm getting at.

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1 Do you allocate it that way? Or do you track it
2 that way?
3 THE WITNESS: In theory, there could be staff
4 who are working on multiple projects at one time.
5 JUDGE CHAPPELL: That would include some work
6 for Tiversa or with Tiversa?
7 THE WITNESS: Well, in specifically in this
8 case, we never did any work for Tiversa, no one on my
9 staff or anyone related to this grant.
10 JUDGE CHAPPELL: Then what's a research partner?
11 What's the point of that?
12 THE WITNESS: In this case, it was purely an
13 exchange of capabilities and skills.
14 JUDGE CHAPPELL: And what did you contribute?
15 THE WITNESS: We contributed specifically in
16 this paper the analysis of files that we were able to
17 review and to understand.
18 JUDGE CHAPPELL: So the files you got from
19 Tiversa, your staff analyzed and reported on those?
20 THE WITNESS: Correct.
21 JUDGE CHAPPELL: That same staff that was being
22 paid by the research grant money?
23 THE WITNESS: Yes.
24 JUDGE CHAPPELL: Thank you.
25 Anything further?

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1 Hearing nothing further, I'm going to discharge
2 the witness.
3 Anything further? One last call.
4 MR. SHERMAN: I have nothing further,
5 Your Honor.
6 MR. SHEER: I have nothing further, Your Honor.
7 JUDGE CHAPPELL: Thank you, sir. Have a good
8 trip back.
9 You're up.
10 MS. VANDRUFF: Okay, Your Honor. Thank you.
11 At this time, on behalf of complaint counsel, I
12 want to just confirm that the record consists of all of
13 complaint counsel's exhibits which have been marked and
14 accepted I believe by Your Honor in JX 2, but before I
15 close our evidence, I want to make sure that that is a
16 part of the record.
17 JUDGE CHAPPELL: And that would be wise.
18 MS. VANDRUFF: Okay.
19 JUDGE CHAPPELL: As far as I know, the only
20 thing that wasn't admitted was the spreadsheet. I think
21 that was all that was admitted or was offered by the
22 government.
23 MR. SHERMAN: That's correct, Your Honor.
24 MS. VANDRUFF: And in terms of formalities,
25 Your Honor, is there anything more that I must do to

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1 move the exhibits that have been marked with a CX prefix
2 and are listed on the joint stipulation that's been
3 marked as JX 2?
4 JUDGE CHAPPELL: There is not.
5 MS. VANDRUFF: Thank you, Your Honor.
6 Then with that, the complaint counsel rests.
7 JUDGE CHAPPELL: Okay. And do you wish to call
8 a rebuttal witness before respondent presents their
9 case?
10 MS. VANDRUFF: I think that that would promote
11 efficient presentation of the proofs, Your Honor, and
12 with your permission, I would seek to do that,
13 Your Honor.
14 JUDGE CHAPPELL: All right. Any objection?
15 MR. SHERMAN: No objection other than,
16 Your Honor, procedurally I'm not sure if at this point
17 it's appropriate to make a motion under rule 3.22(a) for
18 a finding of -- actually to dismiss the case for
19 complaint counsel's failure to make a prima facie case.
20 JUDGE CHAPPELL: You're not sure if this is the
21 time, but you're starting to make it? Is that what
22 you're doing?
23 MR. SHERMAN: Yes, sir.
24 JUDGE CHAPPELL: Okay. Hold on a second.
25 (Pause in the proceedings.)

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1 Okay. I'm ready.
2 I think you're referring to a motion to dismiss
3 under our rule 3.22(a). If you're making that motion at
4 the close of the evidence offered in support of the
5 complaint, which is where we are, based upon an alleged
6 failure to establish a prima facie case, pursuant to
7 that rule, I'm required to defer ruling until all
8 evidence has been received and the hearing record is
9 closed.
10 You may make a motion now orally, and then I
11 will hear complaint counsel's response, if they have one
12 to make, afterward.
13 MR. SHERMAN: Your Honor, we would like to make
14 the motion orally only if that does not preclude us from
15 submitting arguments in writing on the motion.
16 JUDGE CHAPPELL: I would say pick one. Pick
17 one. Orally or in writing?
18 MR. SHERMAN: We will submit it in writing. We
19 have obviously raised the motion to preserve our right
20 to do so.
21 JUDGE CHAPPELL: Okay.
22 MR. SHERMAN: Thank you, Your Honor.
23 MS. VANDRUFF: Do you require any response,
24 Your Honor?
25 Any response, Your Honor?

1 JUDGE CHAPPELL: I believe he's decided to make
 2 the motion later in writing. He's made the point, it's
 3 on the record, so if I'm not going to let him make it
 4 orally, I'm not going to let you respond to it orally.
 5 MS. VANDRUFF: Understood, Your Honor.
 6 JUDGE CHAPPELL: All right.
 7 MR. SHERMAN: Thank you, Your Honor.
 8 JUDGE CHAPPELL: I mean, I could, but I don't
 9 think it would be fair.
 10 Next witness.
 11 MR. SHEER: Complaint counsel calls
 12 Professor Clay Shields.
 13 - - - - -
 14 Whereupon --
 15 CLAY SHIELDS
 16 a witness, called for examination, having been first
 17 duly sworn, was examined and testified as follows:
 18 MR. SHERMAN: Your Honor, just to remind the
 19 court, the reason the request was made to go late today
 20 was so that we could accommodate Professor Johnson's
 21 schedule.
 22 And I believe that we're back on schedule as far
 23 as the witnesses that complaint counsel intends to call
 24 and then the witnesses that we've given them notice that
 25 we intend to call next week, and so I --

1 A. Since about 2002.
 2 **Q. Where did you work prior to Georgetown?**
 3 A. Before Georgetown, I -- well, going back a
 4 ways, I was an assistant professor at Purdue University
 5 prior to that.
 6 Before that, I did my graduate education at
 7 University of California Santa Cruz, some graduate work
 8 at University of Maryland before that.
 9 And prior to that, I was an infantry rifle
 10 platoon leader with 101st Airborne.
 11 **Q. Please tell the court about your military**
 12 **service.**
 13 A. I served three years in the military. I went in
 14 as an enlisted man with a guarantee of going to
 15 Officer Candidate School.
 16 I went to Officer Candidate School, at that
 17 point chose to be an infantryman and went through a
 18 fairly long period of training.
 19 After that, I went to my unit, and my unit
 20 deployed for six months to the Sinai as the
 21 peacekeeping -- part of the peacekeeping force that's
 22 there.
 23 **Q. Thank you.**
 24 **Have you had any other employment while you were**
 25 **at Georgetown?**

1 JUDGE CHAPPELL: I thought about that,
 2 Counselor. I think -- let's see where we are. If it
 3 looks like we can finish this witness, we might, and
 4 we'll reassess this at around 5:30 today.
 5 MR. SHERMAN: Thank you, Your Honor.
 6 JUDGE CHAPPELL: But I understand where you're
 7 going.
 8 Did you want to respond to that?
 9 MR. SHEER: No, sir.
 10 - - - - -
 11 DIRECT EXAMINATION
 12 BY MR. SHEER:
 13 **Q. Professor Shields, please introduce yourself to**
 14 **the court.**
 15 A. Sure. My name is Clay Shields. I'm a full
 16 tenured professor of computer science at
 17 Georgetown University. I'm also director of the
 18 Georgetown Institute for Information Assurance.
 19 **Q. How long have you been a professor at**
 20 **Georgetown?**
 21 A. I've been a professor at Georgetown since 2001.
 22 I believe I got tenured in about 2005 and was promoted
 23 to full professor in 2011.
 24 **Q. How long have you been the director of the**
 25 **Georgetown Institute for Information Assurance?**

1 A. I have. Part of the nice thing about being a
 2 professor is that I have the opportunity and the time
 3 to do extra things outside my normal work.
 4 Some of what I've done is some expert witness
 5 work like this.
 6 For a while I also ran a small consulting
 7 company that did digital forensic investigations.
 8 I also worked briefly at an Internet start-up.
 9 **Q. Thank you.**
 10 **Would you tell the court about your educational**
 11 **background, please.**
 12 A. Yes, sir.
 13 I have my Ph.D. and master's degree in computer
 14 engineering from the University of California at
 15 Santa Cruz. My undergraduate degree is in electrical
 16 engineering from the University of Virginia.
 17 **Q. Did you have other responsibilities while you**
 18 **were a student at the University of Santa Cruz?**
 19 A. I did.
 20 For a time, I worked for the campus computing
 21 group as the campus security coordinator. In that job,
 22 I monitored the university network for intrusions and
 23 strange things that happened and then investigated and
 24 responded to security incidents.
 25 **Q. What undergraduate courses have you taught?**

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1 A. At the undergraduate level, I've taught a
 2 variety of courses: programming; information
 3 assurance, which is the study of computer and network
 4 security along with human factors; operating systems;
 5 networks.
 6 I think that's most of them, if not all of
 7 them.
 8 **Q. What graduate courses have you taught?**
 9 A. At the graduate level, I've taught courses in
 10 network security, in computer security and in operating
 11 systems.
 12 **Q. What are your research interests?**
 13 A. My research interests have changed over time.
 14 Initially, when I first came out of graduate
 15 school, I was interested in peer-to-peer networks that
 16 provided anonymity for network users.
 17 I was also interested in kind of the other side
 18 of the problem, which is that when network attackers
 19 broke into machines, they would often hide their
 20 identity by relaying through other machines and
 21 essentially granting themselves anonymity, and I was
 22 interested in how to break that anonymity.
 23 That second line of research led me to the area
 24 of what's called digital forensics, that is, given a
 25 hypothesis about what happened on a particular computer,

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1 that is, did somebody break in, did somebody violate a
 2 policy or break a law, how to retrieve data from that
 3 computer, analyze it, preserve it and report on it, to
 4 determine if that investigative hypothesis was true or
 5 not.
 6 **Q. What are your responsibilities as the director
 7 of the Georgetown Institute for Information Assurance?**
 8 A. My responsibilities as the director are
 9 primarily to coordinate across a variety of
 10 security-related faculty activities on campus in
 11 computer science, in law, in medicine, in public
 12 policy.
 13 And the main purpose of the center is to become
 14 and maintain, which we have, certification as an
 15 NSA Center of Excellence in information assurance
 16 education.
 17 **Q. Do you belong to professional organizations?**
 18 A. Yes, sir, I do.
 19 I'm a member of the ACM, Association for
 20 Computing Machinery, and I believe the IEEE -- and I
 21 wish I remembered the whole acronym -- International
 22 Electronic Engineers and some other E, so -- but they
 23 mostly go by their acronym.
 24 **Q. Have you received research awards?**
 25 A. I have.

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1 I received a research award of the best paper at
 2 a conference for work on peer-to-peer anonymity
 3 protocols that led to design changes in the Tor network,
 4 which is a leading anonymity network, and how it was
 5 operated.
 6 **Q. I'd like to go back a moment. And when we were
 7 talking about research interests, you said that P2P was
 8 one of your research interests or P2P networks are one
 9 of those -- one of your research interests.**
 10 **What research have you done in that area?**
 11 A. In that area, I've done two types of research.
 12 One, as I described, was in anonymity, how to
 13 essentially hide your identity. The second is in
 14 forensics and investigation of peer-to-peer networks.
 15 As part of that, we developed tools that are in
 16 use by FBI, Secret Service, and over fifty
 17 Internet Crimes Against Children Task Forces. These
 18 tools are used to identify people who are sharing
 19 explicit child pornography images online.
 20 **Q. What is the name of the tool that you're
 21 referring to?**
 22 A. It's called RoundUp.
 23 **Q. And what is it?**
 24 A. RoundUp is a modified Gnutella client, and it
 25 uses much of the existing Gnutella code base in a way

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1 that helps law enforcement identify and get warrants for
 2 searching the people suspected of sharing child
 3 pornography.
 4 **Q. I think we were back on -- we had stopped for a
 5 moment when I was asking you what research awards you
 6 received.**
 7 A. Uh-huh. And I had described the peer-to-peer
 8 anonymity that got rolled into Tor, and that would be
 9 the primary award.
 10 **Q. Have you published articles on computer science
 11 topics in peer-reviewed journals?**
 12 A. I have. I've published I believe nine journal
 13 articles with a tenth accepted that will appear sometime
 14 this year.
 15 **Q. What topics have you published on?**
 16 A. The topics that I've published on match my
 17 research interests. They are peer-to-peer anonymity,
 18 digital forensics including the peer-to-peer networks,
 19 tracking the identity of people who are misbehaving on
 20 the network.
 21 I've also published articles on secure wireless
 22 routing, I believe some other topics.
 23 **Q. Where have you published these articles?**
 24 A. These articles have generally appeared in top
 25 computer science journals, such as the ACM, which is

1 Association for Computing Machinery, Transactions on
 2 Information Systems and Security, Transactions on
 3 Parallel and Distributed Computing, I believe, and also
 4 others such as the Journal of Computer Security.
 5 **Q. You mentioned that you've published articles on**
 6 **P2P topics.**
 7 **Where have you published them?**
 8 A. The articles on P2P topics have appeared in
 9 both journals and in top-tier conferences, places like
 10 the IEEE Symposium on Security and Privacy, the
 11 NDSS Symposium on Network Security, ACM Computer and
 12 Communications Security, others as well.
 13 **Q. Have you received funding for your research?**
 14 A. I have. I've received funding in a variety of
 15 different areas.
 16 For peer-to-peer related anonymity, I've
 17 received funding of about \$1.3 million that I've been PI
 18 or co-PI on.
 19 For investigation of peer-to-peer networks, I
 20 received about \$500,000 of funding.
 21 For other digital forensics investigative tools,
 22 I've received about \$700,000 of funding.
 23 And for large equipment grants designed to
 24 increase the research ability of the university, I've
 25 received approximately \$900,000 of funding.

1 One of the things that I was fortunate to do
 2 when I wanted to get into forensics, I took extensive
 3 commercial training on a forensics tool called EnCase.
 4 They have a training facility out in Sterling.
 5 since I live in the area, I took -- I got an
 6 all-the-courses-you-could-take pass and spent a year
 7 taking every course they had to offer on forensics.
 8 **Q. Is your CV that's attached to your expert**
 9 **report, which is CX 738, up-to-date?**
 10 A. Yes. I believe so.
 11 **Q. Were you asked to offer opinions related to this**
 12 **case?**
 13 A. Yes, I was.
 14 **Q. What opinions were you asked to offer? What**
 15 **were you asked to offer opinions about?**
 16 A. I was asked to offer opinions about Mr. Fisk's
 17 report, particularly whether his conclusions about how
 18 the 1718 File was removed or leaked from the network
 19 were likely. I determined that they weren't. And I
 20 also formed opinions on what was much more likely to
 21 have happened.
 22 **Q. Did you reach a conclusion as to the most likely**
 23 **method by which the 1718 File was disclosed to the**
 24 **Gnutella P2P network?**
 25 A. I'm sorry. Did you say "read it"?

1 **Q. You mentioned "PI."**
 2 **What is that?**
 3 A. "PI" means primary investigator. That is the
 4 lead research on the project -- sorry -- lead researcher
 5 on the project.
 6 **Q. Have you served as a peer reviewer for**
 7 **professional journals?**
 8 A. Yes. Many times.
 9 **Q. Which ones?**
 10 A. Many of the same ones I mentioned earlier and
 11 really a variety of others.
 12 **Q. Have you participated in workshops or other**
 13 **academic activities?**
 14 A. I have participated in workshops, both as an
 15 attendee and as someone who gave tutorials to other
 16 computer scientists.
 17 These tutorials would cover things like digital
 18 forensics, doing investigations on peer-to-peer
 19 networks, and on peer-to-peer anonymity. And the
 20 tutorials are designed to bring a technical audience up
 21 to speed on kind of the current leading research in the
 22 area.
 23 **Q. Have you had further training in the computer**
 24 **science field?**
 25 A. I have.

1 **Q. No. I'm sorry.**
 2 **Did you reach a conclusion --**
 3 A. Oh, I did.
 4 **Q. -- as to the most likely method by which the**
 5 **1718 File was disclosed to the Gnutella P2P network?**
 6 A. I did.
 7 The file was most likely disclosed inadvertently
 8 through sharing over the Gnutella network.
 9 **Q. You mentioned Mr. Fisk.**
 10 **Who is he?**
 11 A. Mr. Adam Fisk. I've been told that he is an
 12 expert for LabMD.
 13 **Q. What are the bases for your opinions in this**
 14 **matter?**
 15 A. Well, there's a wide variety of materials that
 16 form the bases of my opinion.
 17 First, I've been working in the area of
 18 peer-to-peer networks for almost twenty years. I've
 19 spent a significant amount of time developing
 20 investigative tools for peer-to-peer networks.
 21 I read Mr. Fisk's report.
 22 I read many of the depositions that were given
 23 to me.
 24 Independently, I researched a number of things
 25 about the LimeWire client, including looking at the

1 source code for the client, the design documents.
 2 I reviewed the protocol description of
 3 Gnutella.
 4 I reviewed a number of academic works that were
 5 available online that were contemporaneous.
 6 And I reviewed a number of security references
 7 that were available online as well.
 8 And I'm not sure that's a complete list, but
 9 that is a large part of it.
 10 **Q. Were you asked by complaint counsel to make any**
 11 **assumptions in reaching your conclusions?**
 12 A. No, I was not.
 13 **Q. Were you asked to offer an opinion as to whether**
 14 **LabMD's information security practices were reasonable**
 15 **and appropriate?**
 16 A. No, I was not asked to offer such an opinion.
 17 **Q. Could you explain how a P2P network works?**
 18 A. I could. And I've prepared some slides to that
 19 end.
 20 **Q. Did you create the slides yourself?**
 21 A. I did. I drew them all myself using some
 22 drawing software.
 23 **Q. Why did you create the slides?**
 24 A. In the vein of a picture is worth a thousand
 25 words, in describing protocols and the entities that are

1 Internet does have computers connected to it.
 2 Now, what most people think of when they think
 3 of the Internet are the services the Internet provides,
 4 things like Web browsing, e-mail, peer-to-peer file
 5 sharing. But what most people don't realize is that
 6 most of the lower layers of the Internet are dedicated
 7 to one purpose and one purpose only, and that purpose is
 8 to exchange messages between computers.
 9 When computer scientists model the Internet,
 10 they split it into layers, and the lower layers are all
 11 dedicated to just this purpose, allowing two computers
 12 to exchange data.
 13 **Q. How do the computers identify each other?**
 14 A. Computers on the Internet are able to identify
 15 each other by the use of IP addresses. "IP" stands for
 16 Internet protocol.
 17 And as I've added to my illustration, each one
 18 of those computers gets a number assigned to it. The
 19 number is in the format of four separate numbers, each
 20 of which ranges from 0 to 255.
 21 The IP address uniquely identifies that
 22 computer on the network and allows any other computer
 23 to connect to it and possibly exchange messages.
 24 As an analogy, we're all familiar with the
 25 phone network. The phone network is similar in a way.

1 participating and the messages that are being exchanged,
 2 it just seemed best to have some pictures to make things
 3 clearer.
 4 **Q. What information are the slides based on?**
 5 A. The slides are based on, again, my experience
 6 in peer-to-peer protocols, the technical documentation
 7 of the Gnutella protocol and some of its extensions, and
 8 the other material that's in my expert report.
 9 **Q. Would you please call up CXD 6, which are the**
 10 **slides that you're referring to.**
 11 **Well, you've explained that you can explain to**
 12 **us what a P2P network is.**
 13 **Where would you start?**
 14 A. Well, at the risk of offending some people, I
 15 would start very simply just because I don't know the
 16 level of background that my audience has. And it's not
 17 intended to be an insult to anybody.
 18 So I would actually start by just discussing the
 19 Internet.
 20 And as you can see on the screen, I have my
 21 generic blob that represents the Internet. Most of us
 22 have heard of it. Not everybody knows what it does and
 23 how it works.
 24 But we do know, as I can illustrate in the
 25 computer there, on the illustration there, that the

1 That is, somebody who wants to communicate with someone
 2 else who has a phone is able to dial a number, form a
 3 connection across the network to them, and then exchange
 4 voice messages.
 5 So while the phone network exists for people to
 6 exchange voice messages, the Internet, at least the
 7 lower layers, exists so that computers can exchange data
 8 between them.
 9 **Q. How do searches work?**
 10 A. Okay.
 11 So for searches, the way I drew my last diagram
 12 was relatively small. It doesn't really make sense to
 13 do search with only a couple of computers, so I've
 14 created this other diagram that shows more computers on
 15 the Internet.
 16 Again, the Internet is very large. It has tens
 17 or hundreds of millions of devices attached to it. My
 18 diagram here only shows a small subset.
 19 What I'd like to do, for the purposes of clarity
 20 in my diagram, is to remove the little cloud behind it
 21 so that we all know that when I put one of these
 22 diagrams up that has these boxes representing computers,
 23 anytime there's a communication between them, they're
 24 doing the Internet.
 25 So once we have an Internet with all of these

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1 computers on it, it's very easy for each one of them to
 2 share information. The question becomes, if all these
 3 boxes are independently sharing information, how do we
 4 find it. And there's a couple of answers to this.
 5 One way that search works is the way that most
 6 of us probably think about it, and that is search using
 7 a search engine.
 8 And what I've done in this diagram is I've
 9 drawn a search engine in the middle, which is
 10 represented by that large stack of boxes.
 11 The search engine represents something perhaps
 12 like Google or Bing or one of the other search engines.
 13 And a company like Google, for example, will
 14 have hundreds of thousands or perhaps millions of
 15 computers in their data centers around the world.
 16 And what will happen is, the computers that are
 17 making up the search engine will literally go out and
 18 crawl every computer they can find on the Web and
 19 download material from that computer for the purpose of
 20 building an index.
 21 An index is essentially a relationship between
 22 particular search terms and computers where those search
 23 terms can be found.
 24 As Google downloads the files and indexes them,
 25 it does not have to keep them. Once it's created the

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1 index, it can discard the file, as long as it's
 2 maintained the important information and where that came
 3 from.
 4 So the first part of a search engine is the
 5 crawling and indexing process, which takes a significant
 6 amount of power just due to the number of computers on
 7 the Internet.
 8 After the search is complete, if there's some
 9 client, as I've illustrated on the left side of the
 10 screen, that would like to conduct a search, it is able
 11 to contact the search engine.
 12 The search engine then looks in its index, and
 13 what it does is, if you issued a particular query, it
 14 finds the appropriate computers to answer that query and
 15 returns that to the client.
 16 At that point the client can contact a
 17 particular computer and can get the information directly
 18 from that that it's making available.
 19 **Q. What can go wrong with the client-server model**
 20 **you've just described?**
 21 A. So the problem with the client-server model
 22 that turns up pretty often is that the search engine
 23 becomes what's known as a single point of failure.
 24 If something goes wrong with a search engine,
 25 say it loses power, gets knocked off-line -- or in the

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1 case of file-sharing networks where you have a search
 2 engine that's indexing copyrighted material and might be
 3 subject to legal claims, like Napster used to do, then
 4 the search engine gets taken down legally -- and once
 5 that happens -- by "legally" I mean, you know, through
 6 some sort of legal method that I'm sure everybody in the
 7 room is more familiar with than me -- but it is no
 8 longer available to conduct search.
 9 **Q. Does a P2P network take care of the problems**
 10 **that you've just identified with a client search model?**
 11 A. Yes. A peer-to-peer network is explicitly
 12 designed to work around this problem of a single point
 13 of failure of a search engine.
 14 So I've got some slides that illustrate this and
 15 I'd like to go through them to show you how this part
 16 works.
 17 So using Gnutella as our example, what happens
 18 is, all of the computers that are participating are of
 19 roughly equal power. That is, unlike something using
 20 Google where there are millions of computers and racks,
 21 individuals who want to participate contribute their own
 22 computer and computing power.
 23 Now, the question is how does the architecture
 24 work to allow things to be found and discovered on that
 25 network.

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1 What Gnutella does -- excuse me -- what
 2 Gnutella does is it takes some of the peers that are
 3 participating and promotes them to what are called
 4 ultra peers.
 5 And ultra peers are just normal peers who have
 6 some particular set of computing power, that is,
 7 significant disk space for storage, a good network
 8 connection, running a particular operating system that
 9 scales well, not behind a firewall, among other things.
 10 **Q. Before we go further, could we define some**
 11 **terms, starting with "users."**
 12 A. Sure.
 13 When I say "user," I mean an individual who's
 14 actually sitting at a computer and controlling and
 15 providing input to the programs that are running on that
 16 computer.
 17 **Q. You've mentioned peers.**
 18 **What are they?**
 19 A. In the Gnutella architecture, each peer is a
 20 computer that is running a client.
 21 The client is software that understands Gnutella
 22 protocol and allows the user to interact with the
 23 protocol and the computer to interact with other peers
 24 that are running on the network.
 25 **Q. What's the Gnutella protocol?**

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1 A. Well, a protocol can be thought of much like a
 2 diplomatic protocol or a protocol of etiquette.
 3 In computer terms, it is a very formally defined
 4 exchange of messages, that is, a language that computers
 5 can use to speak to each other.
 6 Computers are fast, but they are very rigid in
 7 their functionality, so the protocol specifies what
 8 messages are sent, what the format of the messages that
 9 are sent are, what a receiving computer is supposed to
 10 do when it gets those messages, how it responds, and the
 11 format of those messages, and so on.
 12 **Q. What is the Gnutella network?**
 13 A. The Gnutella network would be all the computers
 14 on the Internet that are running the Gnutella protocol
 15 and are in communication with each other for search and
 16 for sharing of files.
 17 **Q. What is sharing?**
 18 A. When I say "sharing" in terms of Gnutella, I
 19 mean a user has specified a directory on the computer
 20 that contains files that they are willing for other
 21 members of Gnutella network to download, so "sharing"
 22 means making the files available.
 23 I'll note that "sharing" does not mean the files
 24 are necessarily downloaded, just that they were
 25 available, and that downloading may or may not happen at

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1 some point after they are made available through
 2 sharing.
 3 **Q. What's downloading?**
 4 A. Downloading is transferring a file from one
 5 computer to another.
 6 In Gnutella, you'll also hear it referred to
 7 sometimes as uploading, and that's just a difference in
 8 the point of view between who is sending the file.
 9 **Q. So turning back to peer-to-peer networks, how do
 10 users find things to download in the network or on the
 11 network?**
 12 A. So in Gnutella, the way -- well, I have a series
 13 of slides that step through this, so let's go ahead and
 14 look at that.
 15 So there's a series of steps that have to occur
 16 to make files available for sharing. And the first is
 17 that the user, who's at one of the peers that is running
 18 the client software, has to designate which files are
 19 supposed to be shared. The way this happens is through
 20 software configuration.
 21 Normally, when you install the client, you have
 22 a choice of what directory to use to share files from.
 23 And what I've done in this diagram is shown
 24 that we have one sharing peer who has set up a
 25 directory of three shared files. One is titled

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1 w9form.pdf, one is titled insuranceaging.pdf, and one is
 2 titled song.mp3.
 3 So once the sharing peer has decided what files
 4 they're going to share, they recruit ultra peers to
 5 assist them in allowing search for these files. And the
 6 first step for the sharing peer is to find some
 7 ultra peers who are willing to act on its behalf.
 8 There's a particular step in the protocol called
 9 peer discovery, which I haven't done in detail here but
 10 essentially involves the sharing peer contacting someone
 11 they believe is part of the network and asking them who
 12 else do you know about is on the network.
 13 They go through multiple rounds of this, and at
 14 the end they have knowledge of a subset of members of
 15 the Gnutella network.
 16 Out of the subset they find approximately three
 17 ultra peers who are willing to operate on their behalf.
 18 JUDGE CHAPPELL: Let me clarify something.
 19 You're referring to Gnutella, which is with a G, not the
 20 hazelnut spread.
 21 THE WITNESS: Yes, sir.
 22 JUDGE CHAPPELL: But is this Gnutella involved
 23 in every peer-to-peer network or just what you're
 24 describing?
 25 THE WITNESS: No, sir. There are a variety of

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1 peer-to-peer networks. Gnutella is one of them.
 2 There's also others that are separate I believe
 3 like Kazaa, eMule, BitTorrent. All those are other
 4 peer-to-peer networks that --
 5 JUDGE CHAPPELL: So it is one --
 6 THE WITNESS: It is one of several, yes, sir.
 7 JUDGE CHAPPELL: Okay. Thank you.
 8 THE WITNESS: So we're at the point in the
 9 protocol where the sharing peer has identified
 10 ultra peers that are able to help it on share, at least
 11 respond to search queries on its behalf.
 12 What the sharing peer does next is the sharing
 13 peer communicates with each of the ultra peers and sends
 14 each one essentially an encoded file list of all the
 15 files that it is sharing.
 16 Now, I say it's encoded because when the sharing
 17 peer sends it, it sends it in a format that enables the
 18 ultra peer to incorporate it as part of its index
 19 essentially and to perform queries against it very
 20 quickly. But it's essentially the list of all files
 21 that the sharing peer is sharing.
 22 Once the sharing peer has uploaded this, it is
 23 ready to respond to any search queries that it might
 24 receive.
 25 Now -- okay.

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1 Once -- once the sharing peer has done this,
 2 searches can commence.
 3 And what I've done is I've shown on the right
 4 side of the screen there a peer, which I'll refer to as
 5 the querying peer. That is the one that is conducting
 6 the search.
 7 The querying peer does not make searches on its
 8 own. It does so in response to whatever user is
 9 running it. And the user gets to decide what the query
 10 is.
 11 So I've indicated there that the -- in this case
 12 the user is attempting to query looking for something,
 13 W-9 Form. What the user would see would be typing into
 14 a search box "W-9 Form," hitting "search."
 15 And then what the querying peer would do is, it
 16 would also have its own set of ultra peers that had been
 17 discovered through the same process, and it would
 18 forward that query to all of those ultra peers.
 19 Typically this is about three or so.
 20 So on this diagram, I've indicated that the
 21 querying peer is sending a query that says "W-9" to each
 22 of its ultra peers.
 23 **Q. What happens next?**
 24 A. So once the ultra peers receive this, each
 25 ultra peers follows a very simple protocol.

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1 The first thing it does is it says do I have
 2 any directly connected peers who have a file that
 3 matches this query. If so, it forwards the query on to
 4 that peer, as we'll see later.
 5 The other thing that it does is each ultra peer
 6 also has a kind of large set of other ultra peers it's
 7 communicating with.
 8 Now, remember, when we're talking about a
 9 network, we're talking about millions of computers at
 10 once. There might be somewhere between two and
 11 five million computers participating in a file sharing.
 12 There might be several hundred thousand ultra peers.
 13 So each ultra peer sends the query on to
 14 32 other ultra peers, which sounds like a lot, but
 15 remember it's 32 out of hundreds of thousands.
 16 So I've drawn here that each ultra peer is
 17 forwarding on the query a number of times. I couldn't
 18 get 32 arrows or more on the screen. But the query gets
 19 forwarded to that set of ultra peers.
 20 Each one of those ultra peers forwards it on to
 21 other ultra peers as well, as well as checking to see if
 22 they have any directly connected peers that are serving
 23 a file that matches the query.
 24 Eventually, as I've indicated here in red, one
 25 of the ultra peers receives a query, and this ultra

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1 peer has a peer that has something that matches the
 2 query.
 3 So the query essentially goes from ultra peer to
 4 ultra peer until it reaches an ultra peer that has a
 5 peer connected to it. And at that point, that
 6 ultra peer forwards the query on to the sharing peer and
 7 says, Hey, you told me you might have something that
 8 matches this query.
 9 When the sharing peer receives this query, it is
 10 able to connect -- sorry -- connect directly to the
 11 querying peer, and it sends information about the file
 12 that it's sharing.
 13 And what you would see as a result of this on
 14 the querying peer is, if you did a search, there's a
 15 table of search results that gradually gets built up
 16 over time as these responses come in.
 17 Now, the way I've drawn this response here
 18 shows a direct connection from the sharing peer to the
 19 querying peer. In some versions of the protocol it
 20 works this way. In others, the response goes right back
 21 through the same path of ultra peers that forwarded the
 22 query. Either way, the result is the same. The
 23 querying peer ends up with information about a file
 24 that's being shared and then it can download.
 25 **Q. His Honor asked about Gnutella.**

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1 **Is it a large P2P network?**
 2 A. I would say that millions of machines working
 3 together is large. Yes.
 4 **Q. What if the sharing peer is behind a firewall?**
 5 A. So if the sharing peer is behind a firewall, it
 6 presents a problem for the protocol which the protocol
 7 has mechanisms to remedy. The problem is this.
 8 I'm sorry. I skipped a download step. I'm
 9 sorry.
 10 After -- let me go back and finish what I was
 11 saying. Sorry about that.
 12 So after the file information is retrieved, if
 13 the user sees a particular file that they are
 14 interested in downloading, they can instruct their peer
 15 to download the file.
 16 What the peer does is, it sends essentially a
 17 download request and it says, I am interested in
 18 receiving this file, in this example titled
 19 "w9form.pdf."
 20 The sharing peer receives this request, and it
 21 responds and sends the file.
 22 Now, from the point of view of the querying
 23 peer, the file is downloaded. From the point of view of
 24 the sharing peer, the file is uploaded. But the file is
 25 sent between the two peers.

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1 JUDGE CHAPPELL: For this to work -- I know
 2 you're oversimplifying this.
 3 For this to work, though, what you call the
 4 sharing peer, the sharing peer needs to designate and
 5 make available the file you're looking for in your
 6 scenario; is that correct?
 7 THE WITNESS: Yes, sir.
 8 JUDGE CHAPPELL: It's not the entire hard drive
 9 usually.
 10 THE WITNESS: It should not be the entire hard
 11 drive.
 12 It can be that when a user sets up the
 13 software, they make a mistake, and they accidentally
 14 configure the file -- the sharing peer to share more
 15 files than they intended. And that is where security
 16 problems arise.
 17 And to be honest, that's what I think the
 18 problem is in this case, that -- and we'll get to it I'm
 19 sure, but I'll just tell you now, that when LimeWire was
 20 set up on the LabMD computer, the file -- the directory
 21 that was used to share files was the My Documents
 22 directory, which is the default directory for almost all
 23 programs to save things in.
 24 So what happened is that instead of just sharing
 25 files that were downloaded, all the files that were

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1 commonly worked on on that computer as part of business
 2 operations were shared as well.
 3 JUDGE CHAPPELL: So you're thoroughly familiar
 4 with LimeWire and how it works?
 5 THE WITNESS: Oh, yes, sir.
 6 JUDGE CHAPPELL: And when you download it,
 7 unless you do a custom install, it will default to
 8 My Documents?
 9 THE WITNESS: No, sir. It does not default to
 10 My Documents. It defaults to a --
 11 JUDGE CHAPPELL: I misunderstood you. I thought
 12 you said it defaults to My Documents.
 13 THE WITNESS: No, sir, it doesn't default to
 14 that.
 15 When the user configures it, it's possible for
 16 them to misconfigure it in such a way that the
 17 My Documents folder is shared.
 18 JUDGE CHAPPELL: And what would LimeWire default
 19 to?
 20 THE WITNESS: LimeWire defaults to a folder
 21 called Shared, which is intended for sharing. If the
 22 user at the point of configuration selects My Documents,
 23 it will use that as well or instead of the
 24 Shared folder.
 25 JUDGE CHAPPELL: And "the Shared folder" meaning

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1 that the user could pull documents or data or songs or
 2 whatever into that folder to make it available on
 3 LimeWire.
 4 THE WITNESS: Yes, sir.
 5 So "shared" has a double meaning in the sense
 6 that I was talking about. There's a folder that's
 7 created that is named Shared, that has the title Shared
 8 or the word "Shared" describing it. That is the file
 9 that LimeWire by default will share, meaning, you know,
 10 distribute and make available, and so there's a folder
 11 named Shared which allows file sharing.
 12 JUDGE CHAPPELL: And just so I'm clear, if you
 13 download LimeWire and go with the default and move
 14 nothing into the Shared folder, then nothing is
 15 available out there for the peers.
 16 THE WITNESS: You're absolutely correct, sir.
 17 And then what can happen is a user can make an
 18 error in configuration and select a different folder,
 19 such as the My Documents folder, and those documents
 20 will be shared as well.
 21 JUDGE CHAPPELL: Okay. Thank you.
 22 THE WITNESS: So -- sorry. I was just going
 23 through the -- your point on file upload and download,
 24 and I did that in response to your question about
 25 firewalls because firewalls make it operate in a

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1 slightly different manner to bypass the mechanism. And
 2 let me describe how.
 3 Show the problem with the firewall is that when
 4 the querying peer asks the sharing peer for a download,
 5 it does so directly in the newer versions of the
 6 protocol, and the firewall will block this download
 7 request.
 8 So if the querying peer was to send to the
 9 sharing peer and say please let me download a file, the
 10 sharing peer would never receive that request because it
 11 would be blocked by the firewall.
 12 Knowing this, the designers of the Gnutella
 13 protocol provided mechanisms that can work around it.
 14 And here's how they do that.
 15 When a sharing peer realizes -- when it starts
 16 up, it's able to detect if it's behind a firewall or
 17 not. If it detects that it's behind a firewall, it
 18 sends what's essentially called -- can be thought of as
 19 a proxy request to an ultra peer.
 20 That is, it picks an ultra peer and it says,
 21 I'm behind a firewall. I can make a connection to you
 22 going out through the firewall. If I make such a
 23 connection, will you forward requests on my behalf? And
 24 one of the ultra peers agrees and agrees to act as a
 25 proxy.

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1 After that is set up, any queries -- sorry.
 2 There you go -- any queries that get received include
 3 both information about the file and about the address of
 4 the proxy that can be reached.
 5 So before we just had file information in our
 6 response. Now we have file information and information
 7 about the proxy.
 8 The querying peer then, when it wants to
 9 download a file, doesn't send directly to the sharing
 10 peer. Instead, it sends its response -- it sends its
 11 request, which is called a push request, to the proxy
 12 that's acting on its behalf.
 13 That proxy forwards the request to the peer
 14 through the connection that the sharing peer opened up
 15 through the firewall. And this way, the request is able
 16 to get through the firewall to the sharing peer.
 17 When the peer receives it, the peer is able to
 18 upload the file directly to the querying peer, because
 19 firewalls generally block incoming connections and not
 20 outgoing ones, so the sharing peer is able to create a
 21 connection between itself and the querying peer and do
 22 what's called push the file from itself to the querying
 23 peer.
 24 In this way, Gnutella is able to work around
 25 situations where one or other of the sharing or

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1 querying peer is behind a firewall, essentially
 2 bypassing it.
 3 BY MR. SHEER:
 4 **Q. Once a file is found on a sharing computer, can**
 5 **the requester find out what else the peer is sharing?**
 6 A. Yes. Once the querying peer is aware of one of
 7 the identities of the sharing peer, there's an
 8 assumption made by --
 9 JUDGE CHAPPELL: Hold on a second.
 10 The last answer you gave, you said that they can
 11 get around the firewall because the outgoing peer can
 12 somehow push the file.
 13 If the firewall blocks, as you said, the
 14 incoming peer, how is the outgoing peer know there's a
 15 request?
 16 THE WITNESS: So I just went through the slides
 17 that describe that, and let me see if I can get this to
 18 go back.
 19 So what happens is that when the peer discovers
 20 it's behind a firewall, it does that when it initially
 21 runs. It's able to test its network connection and
 22 determine if there's a firewall. If it determines
 23 there's a firewall, it finds one of the ultra peers
 24 that's outside the firewall that's able to act on its
 25 behalf.

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1 And the peer says essentially send -- is able to
 2 send a message out through the firewall to one of the
 3 ultra peers saying, I'm behind a firewall. Will you
 4 accept connection requests on my behalf and forward them
 5 to me over this connection that I've opened to you
 6 through the firewall?
 7 So --
 8 JUDGE CHAPPELL: Are you saying that's possible
 9 with every firewall?
 10 THE WITNESS: Generally, yes, sir. Firewalls
 11 generally block incoming things but not outgoing
 12 traffic. Generally. It depends on how they're
 13 configured, but that is the typical case.
 14 Once this proxy is -- once this proxy is -- the
 15 ultra peer is willing to do forwarding, any response
 16 from the sharing peer includes that proxy information.
 17 Essentially I'm saying -- essentially if I were sending
 18 you a response, I would say, I'm not able to be reached
 19 by you directly, but if you'd like to forward a message
 20 to Mr. Sheer, he'll tell me.
 21 And so you would say, Mr. Sheer, would you
 22 please tell Professor Shields that I would like that
 23 file.
 24 I had already opened an outgoing connection to
 25 him through the firewall since I'm allowed to go out,

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1 and I would hold that connection open.
 2 He would send that back to me and say, The judge
 3 would like a copy of the file. And I would be able to
 4 send it directly to you because I can go out through the
 5 firewall, even though you can't make a connection to me
 6 on the inside.
 7 JUDGE CHAPPELL: And as far as you know, all
 8 peer-to-peer networks have this ability?
 9 THE WITNESS: It's not -- I would say in a
 10 sense, yes. But really what it is, it's more a
 11 question about how firewalls work. And most firewalls
 12 work this way. Most firewalls prevent incoming
 13 connections except to specifically designed computers.
 14 For example, your Web server might be behind a
 15 firewall, and you would want Web requests to be able to
 16 make it through the firewall. But other connections
 17 would be rejected.
 18 So, again, after this information came through,
 19 the querying peer would send a push request. This is
 20 the request to the proxy. It gets forwarded to the
 21 sharing peer. And then the sharing peer is able to send
 22 the file directly out to the querying peer.
 23 The file goes out through the firewall, but
 24 again, because it's an outgoing connection, it is
 25 allowed through the firewall, whereas an incoming

1 connection would not be.
 2 JUDGE CHAPPELL: Thank you.
 3 BY MR. SHEER:
 4 **Q. Let's go back to where we were, which was, once**
 5 **a file was found on a sharing computer, can the**
 6 **requester find out what else is available on that**
 7 **computer?**
 8 A. Yes. Once a querying peer has found a sharing
 9 peer that has a file of interest, it's able to find out
 10 what other files are being shared by that particular
 11 peer.
 12 The reason this exists is that there's an
 13 assumption on the protocol designers that someone who's
 14 sharing a particular file that you're searching for
 15 might have similar interests to yours, and it allows
 16 you to see all the files they have in case that's true,
 17 and you might find some other files of interest as
 18 well.
 19 The way it works is actually very simple.
 20 There's a special request called a browse request.
 21 Once the querying peer knows about the sharing peer, it
 22 sends it the browse request.
 23 The way I've drawn it here, it's a direct
 24 connection, but a browse request can also bypass the
 25 firewall using the same push mechanism I described

1 **just keep on going until the file is found?**
 2 A. No, sir.
 3 One of the things about peer-to-peer networks is
 4 that they have mechanisms to limit how far the search
 5 request will go. This is intended to keep it from --
 6 I'm sorry -- to keep the search request from overloading
 7 the network.
 8 So I've drawn a few diagrams to illustrate
 9 this. They're slightly different from before.
 10 In this diagram, in the lower left corner, I
 11 have the querying peer that's attached to an
 12 ultra peer. This ultra peer is connected through a
 13 series of other ultra peers to the sharing peer that's
 14 in the center right portion of the picture.
 15 Now, there's several different ways that a
 16 search initiating at the querying peer will not reach
 17 the sharing peer.
 18 The first way is because of a mechanism that's
 19 included to limit how far searches can go in the
 20 network. And this mechanism includes what's called a
 21 TTL or a time-to-live field in each search.
 22 What happens is, when the search is initiated
 23 from the querying peer, it goes to the ultra peer. And
 24 we've already described how the ultra peer forwards it
 25 on to other ultra peers.

1 previously for upload and download requests.
 2 When the sharing peer receives a browse
 3 request, it sends back very simply a list of the files
 4 that it's sharing, a full list of files that it's
 5 sharing.
 6 This full list of files will be received by the
 7 querying peer. The user who's conducted this browse
 8 host request will essentially see on their screen a list
 9 of all the files that are being shared by the sharing
 10 peer.
 11 At that point, just as if it conducted a search,
 12 it could do exactly the same thing. That is, it could
 13 pick one of those files, in this case the
 14 insuranceaging.pdf file, it could send a download
 15 request, and then it would receive the file.
 16 Again, just like sharing, I've drawn -- I've
 17 drawn direct connections here, but again a push request
 18 would work on this to enable it to bypass the firewall.
 19 So the net effect here is that once a search is
 20 complete and you've identified a peer, any other -- the
 21 peer who has received the list of search results can
 22 find every other file that that other peer is sharing.
 23 It can then download any of those other files that are
 24 being shared.
 25 **Q. When a user issues a search, does the search**

1 Each time the query is forwarded, it has a
 2 field that's called the TTL, which is a time-to-live.
 3 Initially this is set I believe at 3. And what happens
 4 is, each ultra peer that receives the query decrements
 5 or counts down by one the TTL. When that TTL reaches
 6 zero, the search request is not forwarded any further.
 7 So in my diagram here, you can see that the
 8 query on the left initially has a TTL of 3, passes
 9 through an ultra peer which decrements it to 2, through
 10 another that decrements it to 1, and then the message is
 11 dropped at that next ultra peer because it's kind of
 12 reached the limits of how far it's allowed to go.
 13 In this case, it doesn't reach the ultra peer
 14 that has the -- that is sharing the file; and
 15 therefore, the search may not return any particular
 16 search results.
 17 As I've said, this is a mechanism intended to
 18 keep searches from overwhelming the network. It seems
 19 like it may not go very far, but remember, each
 20 ultra peer is connected to 32 other ultra peers, so
 21 it's 32 and then 322 and 323, so it reaches a relatively
 22 large number, even though it may not reach everything.
 23 The next way that a search cannot reach is if
 24 there's just too much traffic. Each ultra peer has a
 25 limited capacity to receive requests and to forward them

1 on. If it starts receiving too many requests, it will
2 just essentially ignore some, which we call dropping, so
3 it will drop some.

4 So I've illustrated this, where the querying
5 peer is sending out the query X. The next ultra peer
6 is also receiving queries A, B and C at the same time.
7 If that ultra peer is receiving too many queries, it
8 will ignore some. And in this case it chooses to ignore
9 query X, and that query doesn't get forwarded any
10 further.

11 Now, again, remember that there's many
12 ultra peers, each one is connected to 32, so the fact
13 that some ultra peers drop queries is sort of okay
14 because you'll hope that some of the other ones are
15 able to forward it on if they're not too overly
16 burdened.

17 Finally, the other way that a search cannot
18 reach the entire network is that if the querying peer
19 queries for something that's very common, the designers
20 of Gnutella understand that a user who receives perhaps
21 millions of search results is just not able to look
22 through them all.

23 So there's a mechanism that is designed that
24 once -- and I'm going to use air quotes here, and
25 hopefully that will make the transcript -- once enough,

1 **Q. What is LimeWire?**

2 A. I've been talking about the Gnutella network.
3 I talk about that because the Gnutella network is made
4 up of a bunch of machines that support the protocol.

5 LimeWire is one of several software clients that
6 participates in the Gnutella network.

7 So when LimeWire was a major client that
8 allowed people to use the Gnutella network, there were
9 other clients as well, and they all interoperated.

10 **Q. Is LimeWire popular?**

11 A. I believe it was popular. Yes.

12 **Q. Do you know or have an idea about the volume of
13 traffic that it carried in terms of the number of
14 users?**

15 A. Mr. Fisk in his report says that there's
16 somewhere -- during the time, there were somewhere
17 between two and five million users at any given time on
18 the network.

19 JUDGE CHAPPELL: Your questions are in the form
20 of past tense. Is LimeWire out of existence?

21 THE WITNESS: Can I answer that question, sir?

22 Yes, sir, it is. LimeWire was shut down in
23 2010 as a result of legal action.

24 BY MR. SHEER:

25 **Q. Is it still in use now, though?**

1 in area quotes, results have been received, the query
2 will not be forwarded anymore (indicating).

3 So in this diagram I'm showing you a query for
4 PDF, which is a type of file extension. And the first
5 ultra peer has many sharing peers with PDF as does the
6 next, and they keep an approximate count of how many
7 results. And when there are enough results, the query
8 is not forwarded any further, just to prevent -- to
9 limit resource consumption on the network and to prevent
10 the user from receiving more than a useful number of
11 results.

12 **Q. How do people access the Gnutella network?**

13 A. People access the Gnutella network through
14 installing the Gnutella client software and running it.

15 **Q. Does it take any special expertise to use a
16 client to access the Gnutella network?**

17 A. No, sir, it doesn't take any special expertise.
18 It's actually very straightforward.

19 After it's installed -- you can install it by
20 just using a bunch of "okays" through the installation
21 process. It will start itself running. You're able to
22 type something in the search box, and it will search for
23 you.

24 So it's actually very simple to do, and pretty
25 much anybody can do it.

1 A. So even though the company was shut down,
2 LimeWire software can still function. If you download
3 an old copy of LimeWire and try to run it, it won't
4 work. And the reason for that is that earlier, where I
5 discovered the -- where I described the peer discovery
6 process, the old versions of LimeWire aren't able to
7 discover peers because the initial information they have
8 is no longer good.

9 However, people are still using LimeWire today.
10 If they had downloaded it some time ago, and it had
11 information about current peers, it would be able to
12 bootstrap itself back onto the network.

13 So the company LimeWire is gone; some of its
14 software lives on and is still in use.

15 **Q. Who uses LimeWire?**

16 A. A wide variety of people. I mean, pretty much
17 anyone can. It's not a specialized hacker tool. It's
18 nothing like that. It's just people who want to
19 download and share files are able to download it.

20 **Q. What kind of files do they share?**

21 A. There's a wide variety of files that are shared
22 on Gnutella. Popular ones include movies and music,
23 pirated software, nonpirated software I probably should
24 include, documents, text files, all sorts of things.
25 It's a wide variety.

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1 **Q. Could you go into a little fuller explanation**
 2 **about the process by which LimeWire users share files.**
 3 A. Yes, sir.
 4 LimeWire files -- users share files, as I
 5 described earlier in response to the judge's question,
 6 by designating a particular directory to be the
 7 directory that holds the files that are shared.
 8 An analogy for this might be, if you were
 9 willing to share some of your personal items, you might
 10 say, I'm sharing everything that's in my garage. I
 11 don't mean to share things that are in my office, so you
 12 designate the garage as the room that you're willing to
 13 have people come and take things from.
 14 So there is a software configuration step as
 15 part of setting up the software that designates which
 16 directory is the one to be shared.
 17 **Q. Does LimeWire allow users to search those**
 18 **directories?**
 19 A. Absolutely, it does, yes. LimeWire is
 20 explicitly designed and supports search over shared
 21 directories.
 22 **Q. Once a file has been shared, can it be reshared**
 23 **or shared again without being downloaded from the**
 24 **original source?**
 25 A. Absolutely. Once a file has been downloaded by

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1 a peer, it is able to be shared by that peer to other
 2 people. And in fact, that's typically what happens by
 3 default. Items that are downloaded are downloaded into
 4 the other user's Shared folder, at which point they are
 5 made available for anybody else to download.
 6 So once a file gets copied from one peer to a
 7 second peer, typically that second peer is also making
 8 the file available for sharing and downloading.
 9 **Q. Does that mean it can be shared from the second**
 10 **peer and not having to come from the first peer?**
 11 A. Absolutely. Once it's shared to the second
 12 peer, it can be shared to as many other peers without
 13 the first peer having any say or voice or influence on
 14 the process.
 15 **Q. After a file has been shared, can it be removed**
 16 **from the network?**
 17 A. It's very difficult to remove files that have
 18 been shared from the network, very difficult, because --
 19 two reasons.
 20 First of all, the members, the peers of the
 21 network come and go, so that a particular peer who is
 22 holding a file may be on at different times and off at
 23 different times, and it might be difficult to discover
 24 what other peers have the file.
 25 And second is, is that there's no mechanism

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1 within the protocol to allow files to stop being
 2 shared. There's no way, once you've downloaded a file
 3 to me, I can contact you and take that file back and
 4 tell you to stop.
 5 I imagine what would have to happen is you'd
 6 have to get some sort of legal representation to
 7 discover the person who is using that machine and
 8 contact them outside of the protocol to get them to
 9 stop, which can be expensive and difficult and perhaps
 10 impossible if the other users are in a different legal
 11 jurisdiction.
 12 **Q. Are there security risks involved with P2P**
 13 **software?**
 14 A. Yes. There are absolutely security risks
 15 involved in P2P software.
 16 **Q. What are they?**
 17 A. Well, one of the primary ones is one of the
 18 ones the judge asked me about earlier, which is what
 19 happens when you share the wrong directory.
 20 In my analogy before I said you might choose to
 21 share things out of your garage, but if you accidentally
 22 tell people you're sharing things out of your office as
 23 well, then people will be coming and taking documents
 24 out of your office that might be privileged or
 25 confidential or contain other information that you would

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1 not want to get out.
 2 So by analogy, if a peer is misconfigured -- and
 3 by "misconfigured" I mean that the directory that's
 4 chosen to share the files is one that contains
 5 confidential information -- that confidential
 6 information can be leaked.
 7 There are other security risks as well
 8 involving, you know, downloading malware, problems like
 9 that.
 10 **Q. Was LimeWire installed on a LabMD computer?**
 11 A. My understanding is that, yes, it was installed
 12 on a LabMD computer. According to the transcript of
 13 Ms. Simmons, she responded to a call and found LabMD --
 14 found LimeWire installed on a LabMD computer used by
 15 someone I believe named Ros Woodson.
 16 **Q. How was LimeWire, the LimeWire program on that**
 17 **computer, used?**
 18 A. My understanding again from reading
 19 Ms. Simmons' deposition is that the LimeWire program
 20 had been used to download popular music.
 21 One of the features of LimeWire was that it
 22 allows you to play music that you've downloaded. My
 23 understanding is that the lab manager was using it to
 24 find and play popular songs.
 25 **Q. Did you look at the LabMD computer on which**

1 **LimeWire was installed?**
 2 A. I was not able to look at the LabMD computer
 3 because the -- the data and the -- about the computer
 4 was somehow destroyed and is no longer available to be
 5 looked at.
 6 **Q. What did you look at that told you that?**
 7 A. I was given a number of screen shots --
 8 MR. SHERMAN: Objection. Objection.
 9 Clarification. "Told you that." Told you
 10 what? What is "that"? I just don't know what "that"
 11 is.
 12 MR. SHEER: The "that" is that the hard drive
 13 was destroyed.
 14 THE WITNESS: The information about the
 15 destruction of the hard drive was in Mr. Daugherty's
 16 deposition. He said in there that, if I recall
 17 correctly, they had an investigator come to do an
 18 investigation of the computer, that somehow the copy
 19 was destroyed, the copy of the information that's
 20 typically kept as part of this information was
 21 destroyed, and then the original hard drive information
 22 was somehow destroyed as well.
 23 BY MR. SHEER:
 24 **Q. Could you pull up CX 710, please.**
 25 **And particularly, page 204 starting at line 6**

1 used to refresh his recollection.
 2 JUDGE CHAPPELL: That's true. It's an improper
 3 foundation. The objection is sustained.
 4 Next question.
 5 BY MR. SHEER:
 6 **Q. How should the information -- how should the**
 7 **computer drive, hard drive, have been handled from the**
 8 **LabMD computer?**
 9 A. So I've done quite a lot of work in forensics.
 10 I've completed commercial certification. I have
 11 created intermediate and advanced training for computer
 12 forensic examiners that was used by Ernst & Young to
 13 train their examiners, not internal but the ones that
 14 they sent out to client sites.
 15 The number one -- the number one step of
 16 forensics is to preserve evidence. The thing that I was
 17 most afraid of in running my own consulting business was
 18 the situation where I made an error that destroyed
 19 evidence. I've known that it happens. I've heard of it
 20 happening once. It is bizarre to me that it was able to
 21 happen two times, that an original and a copy were both
 22 destroyed.
 23 **Q. Is that what happened here?**
 24 A. From Mr. Daugherty's testimony, yes, that's what
 25 happened.

1 **continuing through line 1 of page 205.**
 2 MR. SHERMAN: Objection, Your Honor. He's
 3 already testified that he thinks he knows what happened,
 4 so I'm not sure why he's using the transcript at this
 5 point.
 6 JUDGE CHAPPELL: We have an objection of why are
 7 you using this exhibit.
 8 MR. SHEER: I'm using the exhibit so that the
 9 witness can look at it and confirm that that's the
 10 source of the information.
 11 JUDGE CHAPPELL: So you're leading the witness?
 12 MR. SHEER: I suppose I am.
 13 JUDGE CHAPPELL: Try to refrain from leading.
 14 He's your witness.
 15 MR. SHEER: Yes.
 16 BY MR. SHEER:
 17 **Q. You've said that you looked at Mr. Daugherty's**
 18 **deposition.**
 19 A. That's correct.
 20 **Q. Would you look at the information on the screen**
 21 **and tell me if that is the information that you're**
 22 **referring to?**
 23 MR. SHERMAN: Objection, Your Honor. He
 24 testified that he remembered that Mr. Daugherty
 25 testified to this. This is duplicitous. It's not being

1 **Q. How did you learn about the LabMD computer if**
 2 **the hard drive was destroyed and a copy of the hard**
 3 **drive was destroyed?**
 4 A. I was able to learn about what was -- some of
 5 what was on the computer by examining screen shots that
 6 I was told were taken by Ms. Simmons as part of her
 7 investigation.
 8 **Q. When were the screen shots taken?**
 9 A. I believe they were taken in 2008.
 10 **Q. Could you call up Exhibit CX 150, please.**
 11 **Do you recognize this screen shot?**
 12 A. Yes, sir. That seems to be a screen shot
 13 showing the C: directory of the computer that was in
 14 question from LabMD.
 15 **Q. What do you mean by "C:"?**
 16 A. In the Windows operating system, each disk gets
 17 its own letter. C: is typically the primary disk on the
 18 computer.
 19 **Q. Is there anything on here that relates to**
 20 **LimeWire?**
 21 A. I don't see anything related directly -- that I
 22 know is related to LimeWire in this. It's possible that
 23 the third item up from the bottom, StubInstaller, is a
 24 LimeWire installer, but I'm not sure.
 25 **Q. Let's turn to CX 151, please.**

1 **Do you recognize this screen shot?**
 2 A. Yes, I do. This is another one of the screen
 3 shots that I believe was taken by Ms. Simmons.
 4 This screen shot shows the LimeWire program
 5 files, that is, the actual program LimeWire, where it's
 6 typically installed on the computer.
 7 **Q. Let's turn to CX 154, please.**
 8 **Do you recognize this screen shot?**
 9 A. Yes. That appears to be a screen shot from the
 10 same computer and showing it running the LimeWire
 11 program.
 12 One of the things to note about this is the box
 13 down in the lower right corner. This is a -- this is
 14 essentially a security warning that says, "You are
 15 sharing many subfolders within your shared folder,
 16 C:\Documents and Settings\rwoodson\My Documents. This
 17 indicates a potential security problem, so please review
 18 your 'My Shared Files' to ensure you aren't sharing any
 19 sensitive files."
 20 **Q. Could you bring up CX 156, please.**
 21 **Do you recognize it?**
 22 A. Yes, sir. This screen shot appears to be the
 23 same program running. In this case, what's been brought
 24 up is the configuration screen that shows the folders
 25 that are being shared.

1 The font is small, but I believe if we zoom in
 2 on the blue window in the middle, you can see that there
 3 are two directories being shared. The bottom one is
 4 titled Shared. That's probably the default one that
 5 LimeWire creates. The other one is the My Documents
 6 folder, and that appears to be where things are
 7 misconfigured.
 8 I will also note that below this, under the
 9 legend, there's a checked box next to a line that says,
 10 "Folder is fully shared including all subfolders."
 11 That means that not only are the documents in
 12 the My Documents folder being shared, if there are other
 13 folders that are placed inside the My Documents folders,
 14 those are being shared as well.
 15 I believe it's possible to see that there are
 16 other folders in there because of the small box with a
 17 plus to the left of "My Documents" that you can --
 18 normally, if you were to click it, were this running, it
 19 would show you the list of subfolders as well.
 20 **Q. If it would help, I believe that you have a**
 21 **blown-up version of this exhibit in your binder.**
 22 A. Okay. I can see it on the screen.
 23 **Q. Can you tell how many files are being shared**
 24 **here?**
 25 A. Can we go back to the main -- I might have to

1 look in the exhibit to see.
 2 Yes. That yellow bar at the top has a message
 3 that shows how many files are being shared and it says,
 4 "You are sharing 950 files."
 5 **Q. Let's turn to Exhibit CX 152, please.**
 6 **Have you seen it before?**
 7 A. Yes. This is a screen shot from the LimeWire
 8 program showing a subset of the files that are being
 9 shared. The yellow bar at the top says there are
 10 950 files being shared. A smaller number or a subset of
 11 those are displayed on the screen.
 12 **Q. When were these files available?**
 13 A. Excuse me?
 14 **Q. When were these files available for sharing?**
 15 A. I believe these files were available for sharing
 16 at the time of the investigation in 2008.
 17 **Q. Are there PDF files that are available for**
 18 **sharing?**
 19 A. Yes, there are. This portion of the screen
 20 shows primarily PDF files.
 21 **Q. Is the 1718 File one of the PDF files that's**
 22 **available for sharing?**
 23 A. Yes, it is. It's the one titled
 24 Insurance Aging, which thank you for highlighting it.
 25 Yes.

1 **Q. Could it be downloaded by anyone through the P2P**
 2 **network without permission?**
 3 A. Absolutely. At this point it is being shared.
 4 It's being shared on the Gnutella network. Any one of
 5 the millions of other clients that were running on the
 6 Gnutella network could have downloaded this file.
 7 **Q. Does that mean it was downloaded?**
 8 A. I don't have evidence as to whether it was
 9 downloaded or not, sadly, in part, because the evidence
 10 was destroyed and we're not able to do a full
 11 investigation.
 12 **Q. Are the facts or data --**
 13 JUDGE CHAPPELL: Do you know for a fact --
 14 because I heard you say this before -- evidence was
 15 destroyed or it's just not available? Are you assuming
 16 it's destroyed?
 17 THE WITNESS: I'm assuming it was destroyed,
 18 sir --
 19 JUDGE CHAPPELL: Thank you.
 20 THE WITNESS: -- from Mr. Daugherty. I'm not
 21 implying that it was done maliciously. It could have
 22 been as a result of an error. But it was not properly
 23 preserved as it should have been.
 24 BY MR. SHEER:
 25 **Q. Are the facts and data that you relied on in**

1 reaching your opinions the types of facts and data that
2 are reasonably relied on by experts in the computer
3 science field?

4 A. Absolutely. Everything I'm using is open to the
5 community and developed in part by the community.

6 Q. Did LabMD commission your (sic) report on the
7 disclosure of the 1718 File for this litigation?

8 A. Yes. I believe they did and in part was asked
9 to review and -- the record and provide an opinion on
10 that file.

11 Q. Who wrote the report?

12 A. I believe Mr. Adam Fisk wrote it.

13 Q. Did you read Mr. Fisk's report?

14 A. Yes, I did.

15 Q. Can you summarize his conclusions?

16 JUDGE CHAPPELL: Excuse me. Did you ask him if
17 LabMD commissioned his report?

18 MR. SHEER: No.

19 JUDGE CHAPPELL: That's what the question says.

20 BY MR. SHEER:

21 Q. Then let me restate it.

22 Did LabMD commission a report on the disclosure
23 of the 1718 File for this litigation?

24 A. Yes, they did.

25 Q. Who wrote the report?

1 A. I believe that was Mr. Fisk's report.

2 Q. Did you read the report?

3 A. Yes, I did.

4 Q. Can you summarize Mr. Fisk's conclusions?

5 A. Yes.

6 Mr. Fisk examined a few ways he thought that the
7 1718 File could have left the LabMD network. He
8 considers a very, very narrow case of Gnutella search
9 and decides that that is not the likely way the file was
10 shared.

11 He doesn't reach a conclusion as to how it was,
12 but he suggests several other alternatives, including
13 being removed on a USB thumb drive, being sent out by
14 e-mail, or being downloaded by a piece of software
15 called a crawler run by possibly a large organization.

16 Q. How does LimeWire handle searching by file
17 name?

18 A. LimeWire handles searching by file name by
19 splitting up the file name into pieces. The pieces are
20 split either based on white space or spaces or
21 punctuation. It then allows searching for any of those
22 pieces of the file as a search term.

23 Q. To go back just a moment, His Honor asked if you
24 assumed that the hard drive on the billing manager's
25 computer was destroyed.

1 Did you review record evidence that speaks to
2 whether the hard drives were destroyed?

3 A. I believe the data on them was destroyed, which
4 is what I meant by "destroyed," and that again came from
5 Mr. Daugherty's deposition.

6 Q. Is it true that you would need to search for the
7 insurance aging file or 6.05.05.071 to find the
8 1718 File through LimeWire, through LimeWire's search
9 function?

10 A. So Mr. Fisk contends that you would have to use
11 those exact terms in order to search for the file and
12 find it. He is incorrect.

13 Another search term that you could use to
14 search for and identify that file is "PDF," which is a
15 file extension, which stands for portable document
16 format.

17 (Discussion off the record due to technical
18 difficulty with realtime.)

19 (Recess)

20 JUDGE CHAPPELL: We're back on the record.

21 MR. SHEER: Thank you.

22 BY MR. SHEER:

23 Q. Professor Shields, is it true that you would
24 need to search for "insurance aging" or "6.05.071" to
25 find the 1718 File through LimeWire's search function?

1 JUDGE CHAPPELL: We had discussed about you
2 refraining from leading. "Is it true" is about as
3 leading as you can get, Counsel.

4 BY MR. SHEER:

5 Q. Professor Shields, could you explain the ways in
6 which the LimeWire's search function works.

7 A. Sure.

8 LimeWire search works by taking the file name of
9 the file and breaking it up into pieces. The pieces are
10 broken up by splitting the file name on either white
11 space, such as a space or a tab, or punctuation, such as
12 a period.

13 So a file that was, for example, named
14 "insurance.aging.pdf" would be split into three terms,
15 "insurance," "aging" and "pdf." You could search for
16 any of those terms and have a search result be
17 returned.

18 So in the case of the 1718 File, the file name
19 was, if I'm not mistaken, insuranceaging.6.016 -- is
20 that correct -- .pdf. Part of splitting that file up
21 would make "pdf" a valid search term for that file.

22 Q. Are there other ways by which a LimeWire user
23 could find the 1718 File file besides using its file
24 name?

25 A. Yes. There are other ways that the file could

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1 be found outside of search, primarily through the browse
 2 host message that I described before.
 3 So somebody who is looking for something like a
 4 popular music song might discover it on a computer and
 5 then use browse host to see all their files. The
 6 1718 File would show up as part of that.
 7 It's possible that users who had bad intent,
 8 possibly through identity theft, might look for files,
 9 based on their name, which were likely to contain
 10 information useful for identity theft.
 11 I will note that two of the files that we know
 12 that were being shared from that file are titled
 13 W-9 Form, and so a user who is looking for personal
 14 information to conduct identity theft could search for
 15 something like "W-9 Form," when they received a hit
 16 click "browse host" and find the insurance aging file
 17 that way.
 18 Another way somebody could find the file would
 19 be to purposely look for nodes that were misconfigured.
 20 And I use "misconfigured" in the sense I described it
 21 earlier, that is, instead of sharing a limited set of
 22 files on the computer, the computer was either set to
 23 share files out of My Documents or perhaps out of the
 24 entire C: drive by being configured to share folders
 25 other than the shared file.

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1 And then once a person determined that the
 2 computer was misconfigured, they could use browse host
 3 to find all the files available on that computer and
 4 download them.
 5 **Q. Let's turn back to Exhibit CX 152.**
 6 JUDGE CHAPPELL: I just wanted to clarify so
 7 everyone knows what I think a leading question is.
 8 It doesn't mean it has to begin with "Isn't it
 9 true," as we hear in law school. A leading question is
 10 any question that suggests the answer to the witness,
 11 not that you're doing it now, just being clear for
 12 everybody.
 13 MR. SHEER: Understood.
 14 JUDGE CHAPPELL: Go ahead.
 15 BY MR. SHEER:
 16 **Q. So let's turn to Exhibit CX 152.**
 17 **Can you explain browse host using this exhibit?**
 18 A. Yes, sir, I can.
 19 So this shows us a subset of the list of the
 20 950 files that were being shared from the LabMD
 21 computer.
 22 A person who is able to find this computer
 23 through search for such a thing as PDF, through search
 24 for something like a popular song or for searching for a
 25 misconfigured node by looking for files that would be

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1 indicative of a misconfigured node could then issue a
 2 browse host query to the computer.
 3 When the browse host query was received, the
 4 entire list of 950 files would be sent back.
 5 I would note that on the screen we see the
 6 insurance aging file there. That would be one of the
 7 files that was sent back.
 8 At that point, the user who had issued the
 9 browse host request would be able to download that file
 10 or any other that were in that directory.
 11 **Q. You've mentioned W-9, the W-9 Form.**
 12 **Is the W-9 Form located on CX 152?**
 13 A. Yes. There are actually two copies. One is two
 14 rows above the insurance aging or 1718 File above and
 15 one is three rows below.
 16 So there are two W-9 forms being shared out
 17 there.
 18 JUDGE CHAPPELL: Is that an IRS form?
 19 THE WITNESS: Yes, sir, it's an IRS form. It's
 20 essentially an employment form that shows an
 21 individual's name, address and Social Security number if
 22 it was filled out.
 23 BY MR. SHEER:
 24 **Q. You mentioned a moment or so ago a misconfigured**
 25 **peer.**

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1 **Can you tell from Exhibit CX 152 if this**
 2 **computer had -- was misconfigured in that way?**
 3 A. If this is 152 in front of us --
 4 **Q. Yes, it is.**
 5 A. This is not the exhibit that shows it's
 6 misconfigured. And the exhibit that shows it's
 7 misconfigured is the one that shows the configuration
 8 screen. We went by it earlier, but I missed the number,
 9 so...
 10 I believe it is 156, shows it was misconfigured.
 11 **Q. And how is it misconfigured?**
 12 A. I'll refer to the box in the middle there, if we
 13 can zoom in a little bit closer.
 14 You can see at the top, it's somewhat blurry,
 15 but it says "Shared Folders. You can choose the folders
 16 for sharing files. Files in these folders are displayed
 17 in the library."
 18 Underneath that, you can see that one of the
 19 folders being shared is C:\Documents and
 20 Settings\rwoodson\My Documents.
 21 The My Documents folder is a default folder for
 22 user files for that particular user. I would consider
 23 it misconfigured for that to be shared because any file
 24 that was placed there perhaps as a default action of
 25 some software would then be shared.

1 **Q. You've mentioned a file extension search several**
2 **times.**

3 **What is that?**

4 A. A file extension search is searching for files
5 by using their file extension.

6 For example, if you're interested in Excel
7 files, you could look for XLS or XLSX. If you're
8 interested in music files, you could look for MP3. If
9 you wanted to look for PDF files, you could search for
10 PDF.

11 **Q. Did the versions of LimeWire that were available**
12 **between January 1, 2005 and July 2010 support file**
13 **extension searches?**

14 A. Yes. I believe they did.

15 **Q. How did you determine that?**

16 A. I determined that the version of LimeWire at the
17 time of 2008 and beyond -- I'm sorry -- from the time up
18 to 2008 supported file extension search by examining the
19 source code of the LimeWire client.

20 In there I found a specific reference that
21 limited particular file extension searches. It limited
22 searches for music and movies, probably because of the
23 comments left in the code, because those searches would
24 rapidly overwhelm the network, but it permitted other
25 file extension searches.

1 being downloaded are small by any individual, there are
2 a huge number of individuals who are on the network for
3 large periods of time.

4 JUDGE CHAPPELL: I've heard a number of
5 responses regarding how many people were on LimeWire.
6 Is there any way to know or is it just a guess or
7 speculation?

8 THE WITNESS: I have two answers to that, sir.

9 I'm counting on a number quoted by Mr. Fisk in
10 his report which said between two and five million
11 people. I have no reason to disbelieve that.

12 One of the references I also cite was a survey
13 conducted by academics of the Gnutella network that
14 showed at the different times they were surveying the
15 network that there were indeed millions of users.

16 JUDGE CHAPPELL: How would that survey be
17 conducted to verify the number of users?

18 THE WITNESS: Well, sir, what the researchers
19 did is they took some of the source code that exists for
20 a client like LimeWire and they repurposed it. They
21 used the portion that does peer discovery, which I
22 described, where a peer will find an ultra peer, and
23 they were able to use that to find all the ultra peers
24 in the network.

25 Once they found all the ultra peers in the

1 **Q. Could the 1718 File have been found using the**
2 **file extension search?**

3 A. Absolutely.

4 **Q. Would that produce a lot of hits?**

5 A. Well, searching for PDF might return a lot of
6 hits. It's hard to say how many because it depends on
7 which part of the network you're searching given the
8 limits of the Gnutella search that I showed before, how
9 many users are on and how many PDF files they're
10 sharing. But it's fair to say that that can produce a
11 large number of hits.

12 The thing about producing a large number of hits
13 is that just because there are a large number of hits
14 does not mean the file won't be found.

15 We could look at this as kind of playing the
16 odds. The odds of any particular individual doing a
17 PDF search and choosing to download that file are
18 small, but there are millions of individuals on the
19 network at any given time.

20 You might think of it like the Mega Millions
21 lottery, which I was playing last week because it got
22 big. The odds of winning are something like one in
23 253 million, but somebody won because so many people buy
24 tickets.

25 By analogy, even though the chances of one file

1 network, they essentially queried them and said, How
2 many other people do you know about? And they were able
3 to get accurate snapshots of the size of the network in
4 under ten minutes.

5 And in fact, one of the papers I cite -- I don't
6 know if I have a copy of it in front of me -- has graphs
7 that show the results of their doing a survey at
8 different times over time, so they did a survey over the
9 course of a number of months to see the number of users
10 that were present at any time.

11 JUDGE CHAPPELL: And the number you used, two to
12 five million, that's LimeWire or is that Gnutella? Or
13 is that all peer-to-peer?

14 THE WITNESS: No, sir. LimeWire is just one
15 instance of Gnutella. LimeWire is a Gnutella client.

16 And so when I say "LimeWire," I do mean the
17 Gnutella network, but there are other things that are
18 also Gnutella.

19 So LimeWire is an instance of Gnutella.

20 JUDGE CHAPPELL: Then what was the two to five
21 million?

22 THE WITNESS: That is just Gnutella. That is
23 not other peer-to-peer file sharing. That is solely
24 Gnutella.

25 JUDGE CHAPPELL: Thank you.

1 BY MR. SHEER:

2 **Q. What are Mr. Fisk's conclusions about how the**
3 **1718 File likely made its way to the Gnutella network?**

4 A. Mr. Fisk discounts the possibilities that I've
5 mentioned of search or browse, really by ignoring them
6 and not discussing them.

7 He instead posits that there were three other
8 ways the file could have left the LabMD network. The
9 first was by using the USB thumb drive. The second was
10 through an attachment to e-mail. And the third was by
11 being downloaded by a crawler run by a sophisticated
12 organization and then shared after the fact.

13 **Q. Let's take them one at a time.**

14 **Do you think that it's unlikely that it was**
15 **taken from the -- from LabMD's computer using a thumb**
16 **drive?**

17 A. I do. I think it's very, very unlikely that
18 the file was taken using a thumb drive.

19 One of the reasons is that we have no evidence
20 to support that theory. It's just conjecture.

21 If we had access to the hard drive, it would be
22 possible to do an investigation to determine if there
23 were evidence that would support that. We have access
24 to no such evidence.

25 The other thing about that, though, is that we

1 the LabMD employees who might have shared it. It seems
2 likely that that could happen, and there was no such
3 evidence.

4 **Q. You mentioned a crawler.**
5 **What is a crawler?**

6 A. A crawler is a program that is designed, much
7 like I described for a Google search, just to visit
8 other computers and catalog their contents.

9 And the purpose point of for Google, what they
10 do is they index it for searching, but the crawling
11 portion of the software is software that visits many
12 computers and can catalog or download information from
13 those computers.

14 **Q. Does the crawler actually need to make copies of**
15 **all the files that it collects?**

16 A. No, sir. The crawler does not have to make
17 files or copies that it collects.

18 If you wanted to create an index or you wanted
19 to create a search over the files that you crawled, you
20 could download a particular -- well, there's two
21 responses.

22 The first is, depending on what type of search
23 that you wanted to conduct, it may not be necessary to
24 download any files at all.

25 If you wanted to just catalog what types of

1 know that the file was being shared through Gnutella
2 from the LabMD computer. Therefore, it doesn't make
3 sense that somebody would copy it onto a USB key, take
4 it out and put it elsewhere on the Gnutella network to
5 share it when it was already being shared.

6 **Q. Do you think it's likely that it was shared**
7 **using e-mail?**

8 A. No. Similar to USB, I think it's extremely
9 unlikely that it was shared using e-mail.

10 And in fact, there are a variety of sources of
11 evidence outside the computer that we do not have access
12 to that could possibly have provided evidence toward
13 this that doesn't -- hasn't been presented. I don't
14 know whether it exists or not. Such things as backups
15 of the e-mail client, backups of e-mail server logs, or
16 any information of that type.

17 Again, I'll note that it would be strange for
18 somebody to purposely remove a file from a network to
19 share on the Gnutella network when it was already being
20 shared on the Gnutella network.

21 One other thing I would add is that at some
22 point the file was found on the Gnutella network, and
23 if it had been copied out using an e-mail or USB, I
24 would expect that there might be some association
25 between the IP address of where it was found and one of

1 files and names, you could just -- you'd issue a number
2 of browse host requests, receive the list of files and
3 build your index of what file names and extensions were
4 available from that without downloading a single file.

5 If you wanted to do a deeper indexing of those
6 files, the crawler could download a particular file,
7 index it like it does for Google, and then it would
8 discard that file. It doesn't have to preserve it if it
9 doesn't want to.

10 So a particular crawler could in theory process
11 and index many more files that it had storage room for
12 by creating the index and not storing the files.

13 **Q. Do you agree with Mr. Fisk's conclusion -- and**
14 **I'm quoting here -- "Only one or more extremely**
15 **sophisticated network crawlers could have found" --**
16 **end quote -- the 1718 File?**

17 A. No. I disagree with that.

18 **Q. Why is that?**

19 A. Mr. Fisk's conclusion supposes that only a
20 sophisticated and well-funded organization would be
21 able to create a crawler. I don't believe that's the
22 case.

23 I did a literature search through the academic
24 literature and was able to find a number of incidents --
25 instances where academic researchers created a crawler

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1 and operated it with, as far as I can tell, very limited
 2 resources.
 3 I've cited two academic papers in my report by
 4 the same group from University of Oregon.
 5 In one, a particular graduate student and
 6 professor were able to create a crawler that was able to
 7 determine the membership of Gnutella, the entire
 8 Gnutella network, in under ten minutes.
 9 They further went on, in the second paper and an
 10 additional grad student, where they issued browse host
 11 requests to all the peers they could find on the network
 12 to measure and create indexes and graphs of what files
 13 were available on the Gnutella network.
 14 I don't believe these groups were funded because
 15 it's typical in academic papers, if you're receiving
 16 funding from an agency or an outside source, to cite
 17 that in the paper. Normally it's on the front page, a
 18 little notice saying we'd like to thank whatever funding
 19 agency we received funding from for the support of this
 20 work. Neither of those papers had that.
 21 I believe that it's easy to create a crawler
 22 because you can reuse existing software.
 23 For example, the LimeWire source code, which
 24 shows how the LimeWire client works, was freely
 25 available for download at the time by anybody. Somebody

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1 with only an undergraduate or even an advanced
 2 undergraduate if still in school should be able to use
 3 the existing software and repurpose the functionality of
 4 different modules to create a crawler.
 5 **Q. What was Mr. Fisk's opinion about who could have
 6 created a crawler?**
 7 A. I believe Mr. Fisk mentioned a number of
 8 organizations, and I probably will not be able to
 9 remember them all, but Tiversa, the FBI, RIAA, MPA,
 10 BigChampagne I think were some. I believe I'm missing
 11 one there. But those were some of the large
 12 organizations that he mentioned.
 13 **Q. Do you think it likely that the 1718 File made
 14 its way to the Gnutella network from crawlers used by
 15 the FBI or BigChampagne, Tiversa or RIAA or MIAA, as
 16 Mr. Fisk contends?**
 17 A. I think it was MPAA.
 18 But no, I think it's incredibly unlikely that's
 19 the case. The reason is is that -- twofold.
 20 First, a crawler is just a program that
 21 downloads information. A crawler does not participate
 22 in the search process. A crawler does not participate
 23 in the upload process.
 24 So even if there were crawlers operating at the
 25 time, they would not have made any files they found

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1 available for search.
 2 Second of all, each of those organizations has
 3 disincentives for sharing files. Even if they had a
 4 crawler that would be able to crawl and share files, it
 5 would be unlikely to do so.
 6 **Q. In your opinion, what was the most likely way
 7 that the 1718 File was disclosed to the Gnutella
 8 network?**
 9 A. Given the evidence that we have, the most likely
 10 way is that somebody downloaded it directly from the
 11 LabMD computer.
 12 **Q. How could that happen?**
 13 A. It could have happened in a number of the ways
 14 that I described.
 15 First of all, somebody could have done a search
 16 for the file extension "PDF" and found the file.
 17 Second of all, they could have been just
 18 randomly happening to cross it while browsing hosts
 19 after looking for something like popular music.
 20 Third, they could have been specifically looking
 21 for a misconfigured node.
 22 Or fourth, they could have been specifically
 23 looking for information that would be useful to them for
 24 crimes like identity theft.
 25 **Q. Does it take an intentional act to share files**

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1 **through LimeWire as Mr. Fisk contends?**
 2 A. The only intentional act that it takes to share
 3 files through LimeWire is the installing of the
 4 LimeWire client and designating the shared folder.
 5 After that, all those files are available to every user
 6 on the network without any intervention or needing
 7 permission from the user of the computer.
 8 **Q. What is inadvertent file sharing?**
 9 A. Inadvertent file sharing is when somebody shares
 10 files through a peer-to-peer network that they do not
 11 intend to share.
 12 For example, the misconfigured node that we've
 13 been talking about, such as the LabMD computer, when the
 14 files that are being shared also include other files
 15 that should probably be remain confidential or
 16 proprietary.
 17 **Q. Have you reached a conclusion as to whether it
 18 was well-known among IT practitioners in 2006 that
 19 inadvertent file sharing of sensitive documents through
 20 P2P programs was a security concern that required --
 21 that needed to be prevented by specific policy,
 22 procedure and training?**
 23 A. Yes. By 2006, it was very well-known that file
 24 sharing presented a risk of disclosure of confidential
 25 information.

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1 And in doing -- in doing the research, I was
 2 able to look back and find a number of contemporaneous
 3 references that describe that. And by "contemporaneous"
 4 I mean on or before the date of 2008 I believe going
 5 back to 2002, so it had been known for a while.
 6 JUDGE CHAPPELL: The last question and answer,
 7 was that in the expert report?
 8 MR. SHEER: I'm sorry, Judge. I didn't hear
 9 you.
 10 JUDGE CHAPPELL: That last question you asked,
 11 is that in his rebuttal expert report? I don't recall,
 12 when I skimmed over it earlier today.
 13 THE WITNESS: Yes, sir, there is a section on
 14 there on the contemporaneous references.
 15 MR. SHEER: Yes, it is.
 16 JUDGE CHAPPELL: Go ahead.
 17 BY MR. SHEER:
 18 **Q. Are there any examples that you can point to of**
 19 **the sources that you're referring to?**
 20 A. Yes. I believe there are a number of exhibits
 21 that demonstrate this.
 22 **Q. I'd like to call up CX 0874, please.**
 23 A. So this exhibit comes from the SANS Institute
 24 Reading Room. It's probably worth a moment to describe
 25 what SANS is.

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1 The SANS Institute is an institute that's
 2 dedicated to training system administrators and network
 3 administrators in computer and network security. They
 4 offer not only a number of certifications, but they also
 5 offer a large library of material that's available
 6 freely online for any practitioner who wants to look up
 7 things to find.
 8 In particular, one of the things that they do is
 9 to have more -- have their more advanced students write
 10 papers as part of certification that describe security
 11 risks and then make those papers available to the
 12 public.
 13 **Q. In CX 874, where would you point us to?**
 14 A. So this is a paper titled Peer-to-Peer
 15 File-Sharing Networks: Security Risks, and I would just
 16 need a moment to find the correct paragraph here.
 17 (Pause in the proceedings.)
 18 Actually I'm going to -- I was looking through
 19 the report. Let me look at my expert report to find the
 20 actual citation. Sorry about that.
 21 (Pause in the proceedings.)
 22 It's on page 6. The first quote reads -- it
 23 starts on the line "Another real danger of peer-to-peer
 24 networks is that, although theoretically the user
 25 controls what subdirectories he/she makes available to

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1 peer users, sometimes more subdirectories are shared
 2 than is known or intended."
 3 This again was written in 2002.
 4 **Q. Who has access to these papers?**
 5 A. Absolutely anybody who has access to the
 6 Internet.
 7 I'll also note there's one other quote from that
 8 paper on page 11.
 9 It reads, "Therefore, it is up to users, and
 10 security administrators, to be aware of the risks
 11 implicit in this wide-open architecture. The safest
 12 course of action is to not use, or allow, peer-to-peer
 13 file-sharing software."
 14 **Q. Could you call up Exhibit CX 0878.**
 15 A. Yes, that's correct.
 16 And the line continues on from there, and I
 17 would just read the last part, which says "and careful
 18 configuration of the P2P software to ensure it is doing
 19 exactly what the user wants it to do," which also speaks
 20 to misconfiguration.
 21 **Q. What is US-CERT?**
 22 A. US-CERT is the Computer Emergency Response Team.
 23 It's a government organization that attempts to make
 24 security vulnerabilities in information where --
 25 available to the community.

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1 **Q. Is CX 0878 a document that you considered in**
 2 **reaching your opinion?**
 3 A. Yes. This is a document that I did consider in
 4 reaching my opinion. It's one of the ones that I
 5 identified and found independently.
 6 **Q. What does it provide?**
 7 A. There is a paragraph in there that starts
 8 "Exposure of sensitive or personal information," and the
 9 first two lines of that are probably most relevant.
 10 "By using P2P applications, you may be giving
 11 other users access to personal information. Whether
 12 it's because certain directories are accessible or
 13 because you provide personal information to what you
 14 believe to be a trusted person or organization,
 15 unauthorized people may be able to access your financial
 16 or medical data, personal documents, sensitive corporate
 17 information, or other personal information."
 18 **Q. Who has access to documents like CX 0878?**
 19 A. Absolutely anybody who would look for it. It's
 20 publicly available on the Internet, and the US-CERT is
 21 known as an authority and a resource for people who are
 22 interested in current security threats.
 23 **Q. What is the date of CX 0878?**
 24 A. The date of CX 0878 -- well, it's marked as
 25 updated in June of 2005. I was able to retrieve it from

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1 the Internet archive, and the Internet archive states
2 that it was retrieved in November of 2005, so we know it
3 was available as early as June of 2005.

4 **Q. I want to turn back to what we were talking
5 about earlier with respect to misconfigured peers and
6 ask, why would someone search for a misconfigured peer?**

7 A. Somebody would search for a misconfigured peer
8 in the hopes of finding information that other people
9 did not intend to share.

10 For example, you might be able to find a
11 misconfigured peer that shares personal documents,
12 things like tax documents, bank account information, any
13 other valuable or personal information that might be on
14 a computer that was accidentally exposed to the
15 peer-to-peer network.

16 **Q. And I want to go back one more time to
17 browse host. I know that we talked about it or that you
18 testified about W-9 Form being a way of getting access
19 to a sharing folder and then browsing that host.**

20 **What about people who search for music? Can
21 they use browse host as well?**

22 A. Absolutely. Somebody who is browsing and just
23 happened to look for a popular song that we might
24 suspect was on the computer, because we know the lab
25 manager was using the computer to search for music,

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1 would also be able to use browse host, and that would
2 return the insurance aging or 1718 File as well.

3 **Q. Can you explain how the 1718 File could have
4 been inadvertently shared from LabMD's -- from the LabMD
5 billing manager's computer?**

6 A. Yes. It could have been inadvertently shared
7 when the LimeWire software was installed. Whoever
8 installed the LimeWire software would have chosen the
9 My Documents folder to share, which exposed all the
10 information of files that are placed in that directory.

11 MR. SHEER: With your indulgence, please.

12 (Pause in the proceedings.)

13 I have no further questions.

14 JUDGE CHAPPELL: Cross?

15 MR. SHERMAN: Yes, Your Honor.

16 - - - - -

17 CROSS-EXAMINATION

18 BY MR. SHERMAN:

19 **Q. Professor Shields.**

20 A. Yes, sir.

21 **Q. My name is William Sherman. We haven't met, but
22 I represent LabMD.**

23 **I'm going to ask you a few questions about some
24 of the questions that you were being asked by
25 Mr. Sheer.**

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1 **Some of the most recent questions or some of
2 the last ones he asked you were about some articles
3 that you cited in your report. I guess one was dated
4 2005 and the other one was from the SANS Institute.**

5 **Do you recall those articles?**

6 A. Yes, sir. We only talked about a couple of
7 articles. There are other articles that are referenced
8 in my expert report.

9 **Q. I understand that.**

10 A. Okay.

11 **Q. You're not suggesting that LabMD was not aware
12 of the dangers of peer-to-peer file sharing, are you?**

13 A. I'm not aware of what LabMD was or was not aware
14 of. I am aware that the resources to find out about the
15 dangers of peer-to-peer file sharing were available
16 online to anybody who looked.

17 **Q. Okay. So when you reviewed, quote-unquote, the
18 record in formulating your opinion, you didn't look at
19 LabMD's Employee Handbook or some of their written
20 policies concerning what employees should and should not
21 be doing?**

22 A. No, sir. I wasn't asked to consider that.

23 **Q. Were you aware that LabMD employees were told
24 that they should not download programs off the
25 Internet?**

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1 A. I believe Mr. Fisk makes that assertion in his
2 report.

3 **Q. But you didn't find it independently outside of
4 Mr. Fisk's report when you were reviewing documentation
5 for your opinion.**

6 A. I'm trying to recall. I reviewed a number of
7 documents.

8 I believe the copy of the handbook was in the
9 documents that I reviewed. However, I was not asked to
10 offer an opinion about the policies of LabMD, so I did
11 not look into them in detail.

12 **Q. Okay. During the questioning, you were shown
13 several screen shots, and in response to those questions
14 you were saying, well, those documents in the screen
15 shot are being shared.**

16 **Do you mean that they were actively being
17 downloaded by someone else on the peer-to-peer network
18 at that particular time that the screen shot was taken?**

19 A. No, sir.

20 As I said during the portion where I described
21 how peer-to-peer networks work, sharing is different
22 than downloading. "Sharing" means the files were
23 available and could have been downloaded by anyone.
24 "Downloading" means that they would have been
25 downloaded.

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1 The evidence I presented shows sharing. I have
 2 not been presented any evidence of downloading.
 3 **Q. So instead of saying the files are being shared,**
 4 **would it have been a correct statement to say that the**
 5 **files were made available for sharing?**
 6 A. I use the term "sharing" as being the -- defined
 7 as being available for downloading. If you would like
 8 to use the term "available" or "shared" as being
 9 available for downloading, I can work with that. But my
 10 definition is, if they were shared, they're available
 11 for download for anyone on the Gnutella network.
 12 **Q. Well, I just wanted to clear up for those of us**
 13 **who don't deal in this area every day that there is a**
 14 **difference when you say the files are being shared and**
 15 **whether or not someone is actually downloading the**
 16 **file.**
 17 **And so I think you've cleared it up, that when**
 18 **you say that the file is being shared, you mean that**
 19 **it's available, it's made available for sharing and not**
 20 **necessarily being downloaded at that particular time.**
 21 A. Right. I'm happy to draw a distinction between
 22 a file being shared and being downloaded. Being shared
 23 does not mean it's downloaded.
 24 **Q. Did you try to find the 1718 File?**
 25 A. No, sir, I didn't.

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1 **Q. So before this case, how familiar were you with**
 2 **LimeWire, the program LimeWire itself?**
 3 A. Well, I have a very long experience in
 4 peer-to-peer protocols going back to graduate school in
 5 about 1995. I have experience --
 6 **Q. Can I stop you?**
 7 A. I'd prefer you didn't. May I answer the
 8 question?
 9 **Q. Go ahead.**
 10 A. I have experience with the Gnutella network
 11 pretty extensively through grants and through developing
 12 law enforcement tools that search the network.
 13 LimeWire is just one example of a client that
 14 works on the Gnutella network. It does not differ
 15 appreciably from other clients.
 16 So I have not a lot of experience with LimeWire
 17 directly, but it is similar to things that I have very
 18 extensive experience with.
 19 **Q. So the answer to my question is that you do not**
 20 **have a lot of experience with LimeWire directly;**
 21 **correct?**
 22 A. I have not had a lot of experience dealing with
 23 the particular LimeWire Gnutella client directly, no.
 24 **Q. In fact, in preparing to formulate your**
 25 **opinion, you studied the LimeWire source code; is that**

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1 **correct?**
 2 A. Yes. That was part of what I did to prepare.
 3 **Q. In fact, as you were preparing to give your**
 4 **opinion, you studied the LimeWire design documents; is**
 5 **that correct?**
 6 A. Yes. In part.
 7 **Q. And in fact, you found those documents on the**
 8 **Wayback Machine; is that correct?**
 9 A. Yes, that's where I found those.
 10 **Q. You were asked about crawlers.**
 11 **And I think you said that some of your students**
 12 **could create crawlers, it's not that difficult to do; is**
 13 **that correct?**
 14 A. Yes.
 15 **Q. And I guess the simplest crawler would not have**
 16 **the ability to download files from a peer-to-peer**
 17 **network or would it?**
 18 A. It depends on the type of crawler you're trying
 19 to build and the information you're trying to gather
 20 with the crawler.
 21 **Q. So outside of the academic realm, someone who**
 22 **would build a crawler, what purpose, I should ask then,**
 23 **would someone build a crawler or design a crawler?**
 24 A. I can -- the best way to answer that question is
 25 to say what the crawler's abilities are, and somebody

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1 who is interested in taking advantage of those abilities
 2 would want to build one.
 3 **Q. What are the abilities of a crawler?**
 4 A. The crawler can perform a variety of functions.
 5 One of the things it can do is it can measure membership
 6 and find membership, that is, all the peers that are
 7 participating.
 8 One of the things on Gnutella it can do is
 9 utilize the browse host extension to find the names of
 10 all the files that are being shared on the network. A
 11 particular crawler might also choose to download some
 12 of those files and process them for some purpose,
 13 but...
 14 **Q. In terms of downloading files or information**
 15 **from a peer-to-peer network, when you download a file,**
 16 **you have to keep it somewhere, don't you?**
 17 A. When you download a file, you're typically
 18 storing that file on your computer somewhere. Yes.
 19 **Q. And so if it's your practice to go out on a**
 20 **daily basis and crawl a peer-to-peer network and**
 21 **download files, let's say, four or five hours a day,**
 22 **would you have to have a large space to store all the**
 23 **files you could download off the peer-to-peer network,**
 24 **say, over the course of five hours a day?**
 25 A. No, sir, not necessarily. It would depend on

1 what you were using those files for.
2 **Q. Well --**
3 A. For example, if you were doing something like
4 Google does --
5 JUDGE CHAPPELL: Excuse me. He asked a
6 yes-or-no question, and when you answered "no," then you
7 will stop unless he wants you to continue.
8 THE WITNESS: Okay.
9 JUDGE CHAPPELL: Thank you.
10 BY MR. SHERMAN:
11 **Q. Let's say I'm just keeping that information. I**
12 **go out every day for five hours and crawl peer-to-peer**
13 **networks and I just take what I can get for five hours.**
14 **Would I need a lot of space to store that**
15 **information?**
16 A. It would depend on the speed of your network
17 connection.
18 **Q. Really?**
19 **Well, explain that. I mean, it would depend on**
20 **how fast I can --**
21 A. Yes, sir.
22 **Q. -- download stuff, so -- oh, I see what you**
23 **mean.**
24 **So if I'm out there for five hours and my**
25 **connection is ancient, like the first one that was done,**

1 **so it would take me five hours to download one file, I**
2 **wouldn't need a lot of space; right?**
3 A. That's correct.
4 **Q. All right. Let's say I got a pretty quick one.**
5 **All right? Let's say I'm the first guy on the new**
6 **super, super information highway that they're talking**
7 **about, you know, charging people for, and I'm out there**
8 **five hours a day crawling peer-to-peer networks and just**
9 **downloading everything I can get.**
10 **Would I need a lot of space to store it?**
11 A. If you were keeping all those files, yes.
12 **Q. Is storage space expensive?**
13 A. That depends on how much money you have. These
14 days it's incredibly inexpensive.
15 **Q. Okay. Okay.**
16 **You also talked about the W-9 Form. And you**
17 **were shown a screen shot from the LabMD computer. It**
18 **had the W-9 Form on it. It had the insurance aging file**
19 **on it. It had a bunch of stuff on it.**
20 **You didn't open the W-9 Form, did you?**
21 A. No, sir. Of course not. That information was
22 not available.
23 **Q. So you don't know whether or not it was filled**
24 **in with information or whether or not it was a blank.**
25 A. No.

1 **Q. Now, LimeWire was a program that operated on the**
2 **Gnutella network; is that correct?**
3 A. Yes.
4 **Q. And if I were searching for a particular song,**
5 **the best way to find that song is to know that song's**
6 **file name. Would you agree with that?**
7 A. If I can be permitted to not yes-or-no-answer.
8 **Q. Come on.**
9 A. I would say the best way would be to search for
10 relevant terms from the song's title.
11 **Q. Well, let me ask you this, though.**
12 **If I know that my cousin has a song that I want**
13 **on his computer, I call him up and I say, Look, run your**
14 **LimeWire, I'm going to run mine, and I'm going to search**
15 **for your precise file name, give me the precise file**
16 **name of the song that I want, and let's say he's just**
17 **across town, would I be more likely to be able to find**
18 **that song using the precise file name on his computer**
19 **than I would if I just used a general term?**
20 MR. SHEER: Objection. Vague as to
21 "general term."
22 JUDGE CHAPPELL: Do you understand the question?
23 THE WITNESS: I'm sorry, sir. I'm trying --
24 after your admonition to answer yes or no, I was trying
25 to figure out if that was a yes-or-no question.

1 JUDGE CHAPPELL: And you're correct. If it's a
2 yes or no, you should answer that way, but if you can't,
3 you can let the questioning attorney know that, and he
4 can either rephrase or move on.
5 THE WITNESS: Okay.
6 JUDGE CHAPPELL: The objection pending now is
7 that it's vague.
8 Do you understand the current question?
9 THE WITNESS: I believe I understand the
10 question.
11 JUDGE CHAPPELL: Then the objection is
12 overruled.
13 Do you need her to read the question back?
14 THE WITNESS: No, sir. I think I know it.
15 JUDGE CHAPPELL: All right.
16 THE WITNESS: I think that's a hypothetical
17 situation.
18 BY MR. SHERMAN:
19 **Q. Oh, it's definitely a hypothetical.**
20 A. And there's parts of it that I would have to
21 make assumptions about to determine what would happen.
22 Part of the assumption would be the order in -- well,
23 there are two assumptions.
24 First of all, whether or not your relative was
25 in town or not has no correlation as to whether or not

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1 they're close in terms of the Gnutella search. And
 2 we've seen that the Gnutella search is limited, so we'd
 3 have to assume first that being physically close meant
 4 they were Gnutella close search.
 5 If that is the case and that was one the search
 6 results returned, I would have to able to look at how
 7 the search results are ranked in terms of order, because
 8 it could be that even though the -- you had a specific
 9 file name, if it's ordered in the order in which search
 10 results returned, it may not be near the top. Other
 11 things might be.
 12 So it's difficult to tell based on a
 13 hypothetical situation.
 14 **Q. So even in that situation, where I've got the**
 15 **exact file name, he's across town, it's still hard for**
 16 **me to find it.**
 17 **It's hard for me to get it from him, is what**
 18 **you're saying; correct?**
 19 A. Yes. It might be.
 20 **Q. So let's say he has a report that he wrote and**
 21 **he saved it in a PDF. I call him up again and I say,**
 22 **Hey, I want a copy of that report. Run your LimeWire**
 23 **and I'm going to run mine. Put it in a to-be-shared**
 24 **file or share it and give me the precise name of the**
 25 **file. And I search for the file. And again, he's right**

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1 **across town. But instead of the precise name of the**
 2 **file, I just put in "PDF." And I think I -- I think his**
 3 **LimeWire has to be one which allows for -- what is it --**
 4 **file extension searches.**
 5 **How likely am I to find that file just using the**
 6 **search term "PDF"?**
 7 A. Again, I cannot say.
 8 **Q. It's quite unlikely, though, because a lot of**
 9 **PDFs are shared on the network; is that right?**
 10 A. I'm not able to say. It depends on what part
 11 of the network you're reaching, how many PDF files were
 12 being shared, the order the search results were
 13 returned in. In this case, it's very difficult to say.
 14 **Q. And so all of those variables and all of those**
 15 **factors would apply for someone searching for the**
 16 **insurance aging file located on a computer in Atlanta,**
 17 **Georgia; right?**
 18 A. No, sir.
 19 **Q. It wouldn't, so that's easier to find than --**
 20 A. No, sir. The scenario is different. You've
 21 given me a hypothetical where one person is telling
 22 another person and trying to find -- trying to find a
 23 file.
 24 What I'm suggesting is that there are millions
 25 of users on the Gnutella network, all of whom are

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1 searching for things at different times, any one of whom
 2 who finds that file would be able to expose it, so -- so
 3 the fact that one of your relatives may not be able to
 4 find a particular file doesn't mean that one of the
 5 other millions of users, who might be doing something
 6 like a PDF file search, who might be doing something
 7 like looking for misconfigured nodes, who might be
 8 looking for files, computers that are sharing personal
 9 information, would not be able to find it.
 10 **Q. So it's more likely that someone would be able**
 11 **to find the insurance aging file that has a specific**
 12 **name than it is for me to be able to find a song that I**
 13 **put in a specific search term for that song; is that**
 14 **what you're saying?**
 15 A. I'm sorry. Can you repeat the question.
 16 **Q. Or are the odds the same?**
 17 A. Can you repeat the question.
 18 **Q. Is it more likely that someone searching for**
 19 **LabMD's insurance aging file, right, looking for a**
 20 **misconfigured whatever, it's more likely for them to be**
 21 **able to find that file than for me to find my cousin's**
 22 **file when I've got the precise name? Is that what**
 23 **you're saying?**
 24 A. No, sir. I think you're misstating what I'm
 25 saying.

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1 So first of all, a misconfigured node is not a
 2 node that we know is sharing an insurance file. A
 3 misconfigured node is one that we know is
 4 unintentionally sharing a variety of files.
 5 In this case, the LabMD computer I would
 6 consider a misconfigured node.
 7 LimeWire is not designed for the specific case
 8 where you're trying to share a file with one other
 9 person. It does not support that necessarily very well.
 10 It does support many people looking for many files and
 11 finding many files.
 12 **Q. So let me ask you this then.**
 13 **The more places that the file is located on the**
 14 **network, the easier it is to find; would you agree with**
 15 **that?**
 16 A. In general, I would say yes.
 17 **Q. In general.**
 18 **So if the file is only one place, one place, is**
 19 **that going to be more difficult to find than a file**
 20 **that's, let's say, ten places?**
 21 A. Again, it's a hypothetical. We'd have to know
 22 things about the particular file you were searching for,
 23 but in general, yes.
 24 **Q. So your conclusions in this case are**
 25 **hypothetical, aren't they?**

1 A. No, sir.
 2 **Q. They're not?**
 3 A. My conclusions are not hypothetical. My
 4 conclusions are based on my years of experience, the
 5 fact that this type of misconfiguration has been known
 6 for a while and that they were warning against it. It's
 7 based on a review of the evidence to determine what was
 8 most likely.
 9 **Q. So how was the LabMD file exposed, I mean,**
 10 **actually shared? How was it shared?**
 11 A. I don't know how it was actually shared. I
 12 don't have the evidence. All I can say is, based on my
 13 experience and what I reviewed, what the probabilities
 14 are.
 15 **Q. Okay. So were you given the information that**
 16 **Tiversa and its CEO Mr. Boback has indicated that he**
 17 **found the -- or Tiversa -- I don't know if he did**
 18 **personally, but that he found the 1718 File, but he**
 19 **didn't find it at LabMD?**
 20 A. I don't recall the specifics of where they found
 21 it.
 22 **Q. So you weren't really given that information to**
 23 **draw your conclusions from?**
 24 A. No, sir. I believe it was in there. It just
 25 didn't play a major part in my report, so I don't

1 actually recall.
 2 **Q. So your focus was to come up with a likely**
 3 **scenario as to how the file left LabMD's possession?**
 4 **Was that your focus?**
 5 A. I wouldn't phrase it in the terms of a likely
 6 scenario. I would phrase it in the terms of what the
 7 most likely scenario was given the evidence that we
 8 had.
 9 **Q. Given the events of what?**
 10 A. The evidence that we had.
 11 **Q. Okay. All right. Well, given the evidence that**
 12 **you were exposed to.**
 13 A. Yes, sir. That would be a better way of saying
 14 it. Thank you.
 15 **Q. Okay. CX 703.**
 16 **At page 112.**
 17 **Mr. Shields, I'm going to ask that you give no**
 18 **emphasis to the shading, just ignore it. It doesn't**
 19 **mean anything.**
 20 A. Sure.
 21 **Q. And if you could start at -- well, let me do**
 22 **this.**
 23 A. May I ask what this exhibit is? I didn't see
 24 what it was.
 25 **Q. This is the testimony of Mr. Robert Boback.**

1 **Did you review that in --**
 2 A. I believe so. I just didn't see what was put up
 3 on --
 4 (Admonition from the court reporter.)
 5 JUDGE CHAPPELL: Well, they can, but you just
 6 can't -- we obviously know they can, they just did, but
 7 she can't take it down, so let's go one at a time.
 8 BY MR. SHERMAN:
 9 **Q. Page 112 line 11:**
 10 **"QUESTION: You would agree that there are a**
 11 **variety of ways for information, such as the 1718 File,**
 12 **to get on the Internet; correct?"**
 13 **There's an objection interposed there.**
 14 **"For example, someone could put a thumb drive**
 15 **containing the file into a computer, and if that**
 16 **computer had a peer-to-peer network downloaded into it,**
 17 **it would be shareable, in other words, it would be**
 18 **available to a company like yours" -- I'm talking about**
 19 **Tiversa -- "or anyone else who would go and make the**
 20 **appropriate search to find it; is that correct?**
 21 **The answer: "Yeah, it could be, sure, that is**
 22 **one plausible way."**
 23 **Did you consider that when you arrived at your**
 24 **conclusions here, that --**
 25 A. Yes.

1 **Q. -- Mr. Boback, the CEO of Tiversa, said yeah,**
 2 **well, it could have gotten on the Internet on a**
 3 **peer-to-peer network, some other way other than being**
 4 **shared by LabMD?**
 5 A. I did read that as part of his deposition, yes.
 6 **Q. And did you also know that Mr. Boback didn't**
 7 **really know how the file got on the IP addresses where**
 8 **he found them?**
 9 A. Yes.
 10 **Q. And so your task really was to come up with the**
 11 **most likely scenario, based on the facts that you were**
 12 **given, as to how the file escaped LabMD's possession.**
 13 A. Yes.
 14 **Q. And so since nobody really knows -- you would**
 15 **agree that nobody really knows how it got out?**
 16 A. Yeah. I -- I don't know what other people know,
 17 so I don't want to say yes, but I don't know. How's
 18 that?
 19 **Q. Right.**
 20 **And in your review of the record, you haven't**
 21 **been able to find any evidence or testimony where**
 22 **someone says, Hey, this is how it got out; correct?**
 23 A. That's correct.
 24 **Q. I've got a couple of questions about some of the**
 25 **slides that you showed us and I'm just going to try and**

1 to do it from memory.
 2 In a few of the slides, you had a query box and
 3 you had I believe a -- is it a responding box? No. A
 4 sharing -- a sharing peer -- a querying peer and a
 5 sharing peer; correct?
 6 A. Yes, sir.
 7 Q. And you mentioned these super nodes.
 8 Who put the super nodes on the network? Was
 9 that Gnutella?
 10 A. No, sir.
 11 I can describe how if you like.
 12 Q. Please.
 13 A. The ultra peers appoint themselves, is what
 14 they're called. The part of the protocol is, when the
 15 client runs, it determines if it's suitable to be an
 16 ultra peer or not, and so it promotes itself to an
 17 ultra peer.
 18 JUDGE CHAPPELL: You're talking about a computer
 19 doing this, not an individual?
 20 THE WITNESS: Yes, sir. The software -- the
 21 computer runs the software and the software makes that
 22 decision. The individual may or may not know that ever
 23 happened.
 24 JUDGE CHAPPELL: So if my computer decided it
 25 wants to be an ultra peer, am I going to know that?

1 THE WITNESS: Probably not.
 2 JUDGE CHAPPELL: And is that going to tax the
 3 speed and memory on my computer?
 4 THE WITNESS: Yes, sir. It would probably
 5 impact the performance.
 6 BY MR. SHERMAN:
 7 Q. Can a computer with a firewall be an
 8 ultra peer?
 9 A. No, it cannot.
 10 MR. SHERMAN: Keep the firewall, Judge.
 11 BY MR. SHERMAN:
 12 Q. So why would one choose to set up a computer to
 13 be an ultra peer?
 14 A. That choice is not generally made by the user.
 15 Instead, the software runs and determines if the
 16 computer is powerful enough to be an ultra peer.
 17 Q. What software are you talking about?
 18 A. In the case of this, this would be the LimeWire
 19 client or whatever other Gnutella software was running
 20 on the system.
 21 Q. But this is only possible on a computer that has
 22 no firewalls.
 23 A. Yes, sir. That's one of the specifications.
 24 Q. What are some of the other specifications?
 25 And I think you mentioned one, which is power?

1 A. I can do some from memory. I'd have to look at
 2 the protocol document to --
 3 Q. Just give me two or three.
 4 A. Sure.
 5 A suitable operating system and a fast enough
 6 network connection.
 7 JUDGE CHAPPELL: Have anything to do with your
 8 antivirus or security software on your computer?
 9 THE WITNESS: No, sir. Once you're running the
 10 Gnutella client, it would do that -- once the antivirus
 11 allowed the Gnutella client to run, it would let it do
 12 whatever it wanted in general.
 13 JUDGE CHAPPELL: The door is wide open.
 14 THE WITNESS: Yes, sir.
 15 BY MR. SHERMAN:
 16 Q. Professor Shields, in your review of the
 17 evidence of the record, did you conclude that the
 18 1718 File was made available for sharing at LabMD
 19 inadvertently?
 20 A. I reached the conclusion that was the most
 21 likely thing to have happened.
 22 Q. And is that because of the misconfiguration?
 23 A. Yes, sir.
 24 So might I add, not necessarily but most --
 25 well, I'm just -- let me strike that if I can. Yes,

1 because it was misconfigured.
 2 Q. Right.
 3 So that was one of the factors that led you to
 4 the conclusion that it's more likely than not that this
 5 was inadvertent.
 6 A. Yes.
 7 Q. So as you were explaining the ultra peers, the
 8 sharing box and the query box, we looked at a slide
 9 where the sharing box was behind a firewall, and the
 10 query box was making a query, and the query was stopped
 11 by the firewall.
 12 Was that an accurate description of one of your
 13 slides?
 14 A. Yes.
 15 Q. And then I think you described that when that
 16 occurs, does one of the super nodes of the query box try
 17 to communicate with one of the super nodes that are
 18 recognized by the sharing box?
 19 A. Can I clear up a misconception, sir?
 20 Q. Please.
 21 A. I think in showing that slide I tried to show
 22 what would go wrong if a firewall were present and not
 23 actually what was happening. That is what would happen
 24 if a firewall was there. The next series of slides show
 25 what happened to avoid that occurring.

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1 So it's not -- if I -- I apologize if I've left
 2 the impression that the fact that a request is sent and
 3 blocked by the firewall is what triggers the connection
 4 to an ultra peer, because that's not what happens.
 5 **Q. So you send the request and it -- the query box**
 6 **connects to one of its recognized ultra peers.**
 7 A. Yes.
 8 **Q. And it searches the network, and in searching**
 9 **the network, it goes directly to an ultra peer that**
 10 **recognizes the search and knows where the document is?**
 11 A. I'm sorry. Can you rephrase the question?
 12 **Q. No.**
 13 A. I'm sorry.
 14 MR. SHERMAN: Could you reread that, please.
 15 JUDGE CHAPPELL: That's not going to help. He
 16 wanted you to rephrase it. But she can read it.
 17 MR. SHERMAN: I can't rephrase it unless I hear
 18 it again.
 19 (The record was read as follows:)
 20 "QUESTION: And it searches the network, and in
 21 searching the network, it goes directly to an ultra peer
 22 that recognizes the search and knows where the document
 23 is?"
 24 BY MR. SHERMAN:
 25 **Q. So I guess what I took away from the slide that**

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1 **I've got in my head is that the sharing box is behind**
 2 **the firewall. It has recognized ultra peers outside of**
 3 **the firewall.**
 4 A. Uh-huh.
 5 **Q. The query box has its recognized ultra peers,**
 6 **and in some way these two ultra peers communicate, and**
 7 **this ultra peer says, I want -- I'm looking for file**
 8 **blue, and this ultra peer says, I know where file blue**
 9 **is.**
 10 A. That's close. The second ultra peer says, I
 11 know someone who I think has file blue and I will
 12 forward the query to them on your behalf.
 13 **Q. And I'll forward the query?**
 14 A. To them on your behalf.
 15 **Q. On your behalf.**
 16 A. The ultra peer then sends the query on to the
 17 peer that it believes has the file.
 18 **Q. And the reason that ultra peer is able to send**
 19 **that query to the peer that it believes has the file is**
 20 **because that peer in the past has trusted this**
 21 **ultra peer?**
 22 A. Yes, sir. It trusted it to act as a proxy on
 23 its behalf and it created a connection outgoing through
 24 the firewall to that ultra peer.
 25 JUDGE CHAPPELL: Is this process we're

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1 describing happening in nanoseconds or can it take a
 2 while?
 3 THE WITNESS: It's probably on the order of
 4 milliseconds. It's going to be pretty fast. Maybe
 5 tens of milliseconds, but definitely not a human time
 6 scale.
 7 BY MR. SHERMAN:
 8 **Q. And so the ultra peer makes the request on**
 9 **behalf of the other ultra peer, and the sharing peer**
 10 **recognizes the ultra peer and thinks it's okay; right?**
 11 **It says it's fine.**
 12 A. I'm not quite sure what you mean by "okay" or
 13 "fine." There is an existing connection --
 14 **Q. There's an existing connection which is not**
 15 **prohibited by the firewall.**
 16 A. Correct.
 17 **Q. And why is it not prohibited by the firewall?**
 18 A. The firewall allows outgoing connections. The
 19 connection from the sharing peer to the ultra peer was
 20 created by the sharing peer going out through the
 21 firewall.
 22 **Q. So when the -- so when the super node makes the**
 23 **request, how does it make the request without being**
 24 **stopped by the firewall?**
 25 A. Can I give you an analogy that might help?

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1 Imagine you worked in an office that only had
 2 outgoing phone lines. You were not able to receive any
 3 incoming phone calls. What you might do is you might
 4 find a friend or a colleague who has a phone that's able
 5 to receive incoming phone calls, and you would call them
 6 and just leave the line open and tell everybody, If you
 7 need to reach me, please call my friend.
 8 What would happen is, other people would be able
 9 to call your friend, and then he would speak into the
 10 phone connection that was open and say, By, the way,
 11 your friend is trying to call you, can you please call
 12 him, and because you have outgoing call ability, you
 13 could call.
 14 **Q. So that's why the sharing peer can only share**
 15 **when they're running LimeWire in the LimeWire scenario.**
 16 A. I'm sorry. Say that again.
 17 **Q. The sharing peer can only share when or while**
 18 **they're running the LimeWire program.**
 19 A. That's true whether there's a firewall or not.
 20 **Q. Exactly.**
 21 **So if the computer is off, it's not sharing.**
 22 A. That's correct.
 23 **Q. If the computer is on, but LimeWire is not**
 24 **running, it's not sharing.**
 25 A. That's correct.

1 **Q. It's only if the computer is on and it's running**
 2 **LimeWire that it can share.**
 3 A. Absolutely.
 4 **Q. So at least those three factors have to take**
 5 **place in order for any sharing to take place; correct?**
 6 A. Yes, they do.
 7 **Q. Not to mention the other numerous factors that**
 8 **have to take place, including a proper search, proper**
 9 **search term, being within a certain life span, so to**
 10 **speak, all of these factors have to take place in order**
 11 **for a sharing to actually occur; correct?**
 12 A. Yes.
 13 **Q. And even more than that.**
 14 A. Oh, yeah. There's a lot of other stuff that has
 15 to happen. Absolutely.
 16 **Q. I guess the point I'm trying to make -- and you**
 17 **may not understand it -- is, it's really not easy to**
 18 **find a file using this peer-to-peer network. Would you**
 19 **agree?**
 20 A. Absolutely not.
 21 **Q. So it's easy to find a file if all of the**
 22 **factors line up.**
 23 A. It is easy for somebody to find the file.
 24 Absolutely. The entire network is engineered solely for
 25 that purpose.

1 **separated out into its various separable parts;**
 2 **correct?**
 3 A. Yes.
 4 **Q. And so if someone searched using just the term**
 5 **"insurance," there's a possibility that they could have**
 6 **found the LabMD insurance aging file?**
 7 A. No, sir.
 8 **Q. They couldn't have.**
 9 A. Not using the term "insurance," no.
 10 **Q. And that's because "insurance" and "aging" are**
 11 **not separated; is that right?**
 12 A. That's correct.
 13 **Q. And so they would have had to search at least**
 14 **"insurance aging" to have a possibility of finding that**
 15 **file; is that right?**
 16 A. No.
 17 **Q. No?**
 18 A. No. They could have also searched for "PDF," as
 19 I described earlier, that is part of the file name, and
 20 that would have returned that file.
 21 **Q. Granted.**
 22 **But there was also a number attached to that; is**
 23 **that correct?**
 24 A. I believe there were some numbers. Yes.
 25 **Q. Could they have just used those numbers as a**

1 **Q. Okay. So it is like a lottery as you described**
 2 **before. You just have to be that somebody on that**
 3 **someday; correct?**
 4 A. In one circumstance that I stated, yes, that is
 5 correct. But there are other circumstances that are
 6 much -- the probability is higher.
 7 **Q. But given the size of the Internet, given the**
 8 **number of people who may be searching it and using**
 9 **LimeWire at any one particular time, and given the fact**
 10 **that the computer who may have the only file of its**
 11 **type must be on, must be running LimeWire at the time,**
 12 **that's a pretty -- that's sort of like the lottery,**
 13 **isn't it?**
 14 A. It is. And if you'd like, we can consider the
 15 odds.
 16 **Q. I don't want to consider the odds because I**
 17 **don't want to.**
 18 **One moment, Your Honor.**
 19 **(Pause in the proceedings.)**
 20 **Just a few more questions, and they're general**
 21 **because my understanding is very limited.**
 22 **So if someone were to -- you testified that**
 23 **LimeWire separates out the name of the file, so the**
 24 **insurance aging file. -- insurance.aging. -- I don't**
 25 **know what the name of the file is, but it would be**

1 **search term and had the possibility of finding the**
 2 **file?**
 3 A. Possibly. I'd have to look at the numbers
 4 again, but I believe that would be the case, yes.
 5 JUDGE CHAPPELL: If you merely searched "PDF,"
 6 wouldn't you have so many hits that it would be
 7 impossible to deal with that?
 8 THE WITNESS: Again, sir, the question is not
 9 whether one person would have the opportunity to find
 10 the file. The question is whether any person would have
 11 the opportunity to find the file.
 12 In the situation where there are two to
 13 five million users on the network, then somebody would
 14 probably have a chance of finding the file,
 15 particularly in some of the other scenarios that I
 16 outlined.
 17 For example, while "PDF" might have a low
 18 probability of finding that file, the fact that there
 19 are two to five million users on the network every hour
 20 just means that if a very small percentage of them are
 21 curious enough to open random PDF files, someone might
 22 find that.
 23 But there's also other ways that people who had
 24 perhaps malicious intent could specifically find the
 25 file.

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1 For example, somebody who is looking for
 2 identity theft-type material and searched for "W-9"
 3 would find that on the computer, and that would indicate
 4 it was misconfigured and might have other files of
 5 interest to an identity thief, who would then spend more
 6 time examining the PDFs.
 7 JUDGE CHAPPELL: Well, since you brought up
 8 certain people, are you familiar with a company called
 9 Tiversa?
 10 THE WITNESS: I'm only familiar in the context
 11 of reading Mr. Boback's transcript.
 12 JUDGE CHAPPELL: Based on what you've read,
 13 would it be your conclusion that a company like Tiversa
 14 would be a lot more likely to find this type of file
 15 than the average user?
 16 THE WITNESS: I think -- in reading
 17 Mr. Boback's deposition, there was not a technical
 18 explanation of how they were expanding their search
 19 capabilities, but based on what I understand, they are
 20 running a large number of ultra peers. That is my
 21 reading of what they're doing. And that would give them
 22 a much larger view of the network, and they would have a
 23 higher likelihood of finding the file, yes.
 24 JUDGE CHAPPELL: And let's just say a company
 25 that's trolling, for whatever reason, to try to find

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1 vulnerabilities and let's just say for marketing
 2 purposes of their own firm, you would agree they have a
 3 lot more likelihood of finding one of these files than
 4 the average user.
 5 THE WITNESS: I'm sorry, sir. You said "a
 6 company." Did you mean Tiversa --
 7 JUDGE CHAPPELL: Any company, who trolls the
 8 Internet and has the experience to look for these kind
 9 of files in a way that, let's say, if they can promote
 10 themselves as a company that does that, it helps them
 11 get business.
 12 THE WITNESS: That would seem to be possible,
 13 yes.
 14 JUDGE CHAPPELL: So they would have a much
 15 more -- a much higher probability of finding a file than
 16 the average user, these two to five million you're
 17 talking about.
 18 THE WITNESS: Yes, sir.
 19 But I'd like to point out that one average user
 20 may have a low probability of finding the file, but
 21 there are millions of users over a long period of time
 22 as well, so while one individual might have a very low
 23 chance of finding the file, the cumulative sum of
 24 probability over millions of users over a long period
 25 of time means that some user is likely to find the

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1 file.
 2 The nature of the peer-to-peer network so when
 3 you download something off the network, it's
 4 automatically placed in your shared folder to share with
 5 others mean that if you download something, it's likely
 6 to be further shared to other people, increasing the
 7 odds.
 8 JUDGE CHAPPELL: Okay.
 9 MR. SHERMAN: I don't have any further
 10 questions. Thank you, Mr. Shields.
 11 JUDGE CHAPPELL: Any redirect based on the
 12 recross?
 13 MR. SHEER: Yes.
 14 - - - - -
 15 REDIRECT EXAMINATION
 16 BY MR. SHEER:
 17 **Q. I've got just a few questions.**
 18 **What would you need to determine how the**
 19 **1718 File got out from LabMD?**
 20 A. Each of the particular scenarios that we've
 21 discussed would have some evidence associated with it
 22 that could be recovered from the hard drive of the
 23 computer doing the sharing, possibly. Being able to
 24 examine that computer and the evidence would possibly
 25 lead us to be able to tell if one of those scenarios had

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1 occurred.
 2 **Q. Is there any evidence in the record indicating**
 3 **that the 1718 File left LabMD by a thumb drive?**
 4 A. No, sir. Only conjecture.
 5 **Q. In your testimony, you mentioned that you looked**
 6 **at LimeWire's source code. Mr. Sherman asked you about**
 7 **that.**
 8 **Why did you look at the source code?**
 9 A. Just to make a hundred percent sure I knew how
 10 it was operating.
 11 **Q. Can you point the court to the section of your**
 12 **expert report that relates to the papers regarding the**
 13 **dangers of inadvertent file sharing?**
 14 A. Yes, sir.
 15 There's a section starting on page 12 of my
 16 report. It's titled Dangers of Inadvertent Sharing on
 17 P2P Networks, and it continues with a number of
 18 example and contemporaneous references through
 19 page 16.
 20 **Q. And you're referring to --**
 21 MR. SHERMAN: Your Honor, I object. That's
 22 beyond the scope of cross. I didn't ask him about the
 23 dangers of sharing on peer-to-peer networks.
 24 JUDGE CHAPPELL: Response?
 25 MR. SHEER: I'll withdraw the question.

1 BY MR. SHEER:
2 **Q. Mr. Sherman asked you about a variety of ways or**
3 **questions about the variety of ways that you have**
4 **identified that the 1718 File could have been shared.**
5 **Did you make a conclusion about the most likely**
6 **way that the 1718 File was shared?**
7 A. I did. It was most likely shared over the
8 Gnutella network by somebody who found it on the LabMD
9 computer.
10 **Q. Where is that in your report? What paragraph?**
11 A. Paragraph 3 on page 2 I believe is the first
12 reference.
13 I also believe it's on paragraph 106 on
14 page 31 in the conclusion.
15 **Q. Is it also in paragraph 104?**
16 A. 104? Let me check.
17 Yes, sir, it's also in 104.
18 MR. SHEER: I have no further questions.
19 JUDGE CHAPPELL: Is there any recross based on
20 the redirect?
21 MR. SHERMAN: I have -- just very short.
22 - - - - -
23 RECCROSS-EXAMINATION
24 BY MR. SHERMAN:
25 **Q. You indicated that the most likely way was**

1 that allowed inadvertent file sharing.
2 So in short, the theories that Mr. Fisk
3 proposed there wasn't any evidence for, and the theories
4 that were the things that are common there was evidence
5 for.
6 **Q. Doesn't your dismissal of the thumb drive**
7 **theory assume that the person who inadvertently**
8 **downloaded the LimeWire was the same person who would**
9 **have downloaded that information to a thumb drive?**
10 A. I'm sorry, sir. I don't know that anybody
11 inadvertently downloaded LimeWire.
12 **Q. Okay.**
13 A. That was part of your question.
14 **Q. I'm sorry. Inadvertently made the files**
15 **available for sharing.**
16 A. I'm sorry. Can you repeat the question or
17 rephrase it?
18 **Q. Well, it just seems to me that part of the way**
19 **you've dismissed the thumb drive theory was that you**
20 **assumed that if someone wanted to share or take that**
21 **information, they would have done so through a**
22 **peer-to-peer network rather than downloading it to a**
23 **thumb drive.**
24 A. No, sir. I'm saying there's evidence that there
25 were files being inadvertently shared, and there's no

1 **inadvertent file sharing from someone running LimeWire**
2 **at LabMD? That was the most I guess you said likely way**
3 **that the file was shared?**
4 A. Yes.
5 **Q. Why?**
6 A. Why did I reach that conclusion?
7 **Q. Yeah.**
8 A. In reaching that conclusion, I considered the
9 different methods that Mr. Fisk suggested the file might
10 have been shared, as well as the ones that seemed likely
11 to me given my knowledge of security, my experience with
12 peer-to-peer networks and protocols.
13 I dismissed the USB instance essentially
14 because there is no evidence to show a USB key was used
15 and because there's no visible motivation for somebody
16 to share a file via USB that's already on the Gnutella
17 network.
18 The same example holds for e-mail.
19 There is no evidence that a crawler would have
20 downloaded it. And had a crawler from an organization
21 downloaded it, they wouldn't have shared it.
22 I also looked at contemporaneous security
23 references and my own experience to understand and know
24 that inadvertent file sharing was common and warned
25 against and that the computer was configured in a way

1 evidence of a thumb drive.
2 **Q. I thought you said there was no -- well,**
3 **"inadvertently shared" means, in your vernacular,**
4 **inadvertently made available for sharing.**
5 A. Yes, sir.
6 **Q. Okay. That doesn't mean that someone from the**
7 **outside actually downloaded those files.**
8 A. It means that's the most likely thing that --
9 no. Are we talking about terminology here for --
10 **Q. I think so because you said there's evidence of**
11 **inadvertent sharing.**
12 A. Yes, sir.
13 **Q. And I guess I went on to give you the**
14 **explanation because your terminology for sharing and my**
15 **understanding of what sharing is are a little**
16 **different.**
17 **And when you say the files are being shared -- I**
18 **think we discussed this before -- you mean that they**
19 **were available to be shared but not necessarily being**
20 **downloaded. Right?**
21 A. That's correct, yes.
22 MR. SHERMAN: Okay.
23 All right. I have no further questions.
24 JUDGE CHAPPELL: Anything further?
25 MR. SHEER: No, Your Honor.

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1 JUDGE CHAPPELL: Thank you, sir. You're
 2 excused.
 3 THE WITNESS: Thank you.
 4 JUDGE CHAPPELL: Anything further before we
 5 break for the day?
 6 MS. VANDRUFF: Not from complaint counsel,
 7 Your Honor.
 8 MR. SHERMAN: I have nothing further,
 9 Your Honor.
 10 JUDGE CHAPPELL: Okay. We will reconvene on
 11 Tuesday at 0930.
 12 We're in recess.
 13 (Whereupon, the foregoing hearing was adjourned
 14 at 5:47 p.m.)
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1 CERTIFICATION OF REPORTER
 2
 3 DOCKET/FILE NUMBER: 9357
 4 CASE TITLE: LabMD, Inc.
 5 HEARING DATE: May 23, 2014
 6
 7 I HEREBY CERTIFY that the transcript contained
 8 herein is a full and accurate transcript of the notes
 9 taken by me at the hearing on the above cause before the
 10 FEDERAL TRADE COMMISSION to the best of my knowledge and
 11 belief.
 12
 13 DATED: MAY 30, 2014
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 16 JOSETT F. WHALEN, RMR
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 19 CERTIFICATION OF PROOFREADER
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 21 I HEREBY CERTIFY that I proofread the transcript
 22 for accuracy in spelling, hyphenation, punctuation and
 23 format.
 24
 25 ELIZABETH M. FARRELL

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