IN THE UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF MISSOURI
WESTERN DIVISION

FEDERAL TRADE COMMISSION,)

Plaintiff,)Case No.

vs.)14-CV-00815-BCW

BF LABS, INC., et al.,)

Defendants.)

TRANSCRIPT OF PRELIMINARY INJUNCTION HEARING

On Monday, November 24, 2014, the above-entitled cause came on before the Honorable Brian C. Wimes, United States District Judge, sitting in Kansas City, Missouri.

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MONDAY, NOVEMBER 24, 2014

THE COURT: Good morning. Let the court call the case. This is Federal Trade Commission, Plaintiff, BF Labs, Inc., et al, Defendants, Case Number 14-CV-00815.

Can I have parties enter their appearance for the record, please? We'll start with Federal Trade Commission.

MS. WONG: Thank you, Your Honor. For the Federal Trade Commission, I'm Helen Wong, Leah Frazier, and Greg Ashe, and we have Charles Thomas from the U.S. Attorney's Office.

THE COURT: Okay. Good morning.

MR. HUMPHREY: Good morning, Your Honor.

THE COURT: Good morning.

MR. HUMPHREY: James Humphrey, Michael Foster, Miriam Bailey, Braden Perry on behalf of defendants Butterfly Labs, Sonny Vleisides, and Jody Drake.

THE COURT: Okay. Good morning.

MR. GRIFFIN: Your Honor, Jim Griffin here on behalf of Nasser Ghoseiri.

THE COURT: Okay. Thank you, Mr. Griffin.

Okay. The court had set this matter for a hearing on today's date with respect to a preliminary injunction. I talked to you all on Friday. I'm just going to take a little time. I want to make sure we frame this for the evidence which the court -- we never got to it last time. We're going to get to it this time with respect to evidence, but I want to

make sure that I'm on the same page in terms of what the court expects evidence wise. If you all think there's something different, please let the court know.

What we're trying to determine is this in the court's opinion: The FTC has alleged that BF Labs has made material misrepresentations with respect to delivery date and ROI or return on investments; is that correct? Those are the two allegations; is that correct, Ms. --

MS. WONG: Correct. In terms of the number and profitability of Bitcoins.

THE COURT: Correct. The number and profitability. They failed to deliver --

MS. WONG: In a timely fashion which feeds into the profitability and number of Bitcoins, yes.

THE COURT: What you have to show because you are the movant is that there's, one, first, a likelihood of success in terms for the court to issue. I think, second, you have to look at the scope of the equitable relief; is that correct?

MS. WONG: Correct.

THE COURT: All right. Now, let me ask one question with respect to the misrepresentation. I know there's the issue of intent is not involved; is that correct?

MS. WONG: Correct.

THE COURT: Is not an element of that.

MS. WONG: Yes.

THE COURT: Let me ask you this: In terms of some of the case law that the court and my law clerk have had the opportunity to review with respect to intent, how do we make a determination that the representation is false? Do you understand? Is it just the sheer fact they made a representation?

MS. WONG: So there's two things. First, the fact that they made the representation and then it turned out to be false, and the second part we'll look at is whether a reasonable consumer will interpret it that way. In addition, we also look at the net impression. FTC case law clearly states that even if there are satisfied customers or there are a certain number of customers that might have viewed it differently, as long as there's even a significant minority of consumers who could interpret it one way and that's a misrepresentation, the FTC prevails.

THE COURT: Okay. Let me see if I understand this again. So, for example, I know you have submitted some case law, but we've looked at other case law, suggests if I make some representation -- say, I have a product, and in that product I make the representation that it may be -- there's 50 percent copper in that product and you test it and there's not 50 percent copper, that's a misrepresentation.

MS. WONG: It also has to be a material

misrepresentation.

THE COURT: Okay. Let's say it's material in that because I'm representing to them there's -- okay. There's -- let me change that.

There's no copper in it. There's no copper. I'm making that representation. There's no copper in this product. There's no copper in this product, and then we find out there's 50 percent. That would be material or let's say it's material.

MS. WONG: It depends if the consumers are relying on whether there's copper, so, for example, if you have -- well, so -- hold on. Let me get it straight.

Okay. Yes, you're correct, Your Honor. I'm mixing up my case law.

THE COURT: Okay. I get that.

So then we know immediately that there's a misrepresentation, correct, because you represented there's not 50 percent copper, we test it, and there's 50 percent. Now, let's change this.

Let's say that I have a product and I represent that product to you, Ms. Wong, I am going to get that product to you by Thursday, okay? Does the court have to determine at the time you made that representation it was false? For example, I say I'm going to get you a product by Thursday, okay, and I have every intent on getting you that product by

Thursday, but say for some reason on the way to give you that product, my car breaks down, you don't get the product on Thursday. And this may be a crude example. Is that a misrepresentation? How do you know that's a false misrepresentation? Wouldn't you have to say --

Now, let me give you another scenario. I say I'm going to give you the product by Thursday and I don't have a car, and the way of delivery is by car and I don't even have a car. That would seem to me to be a false misrepresentation because I knew I didn't have a car but I'm going to deliver it by way of car to you on Thursday. Would you agree or not agree? I'm just trying to see how I'm supposed to -- would you agree with that?

MS. WONG: I understand. Give me one second to make sure I get it right.

THE COURT: Okay. Sure.

MS. WONG: Okay, Your Honor. It is a strict liability basis, so the FTC's position is that if you have any reason to believe that you can't deliver a product by Thursday, tell consumers that you can't deliver it until one year from now and that's fine. The problem is you can't make representations that you may or may not keep because especially in an issue like here, everyone knows that time is what matters.

So your best guess is not enough. You have to tell

consumers from the onset that it's not going to be Thursday; it's going to be six months from Thursday.

THE COURT: Okay. Even though I may have believed I could have done it Thursday just based upon the fact that, you know, my car is working, if I have a car, and that's the means in which I was going to deliver it. I know this is a crude example, but I'm trying to simplify it. My car's working fine. On my way to it, my car breaks down. I have no control. It was true I was going to deliver. You reasonably relied on it. I was telling you the truth, but then my car broke down. I didn't get it to you on Thursday.

MS. WONG: So we would --

THE COURT: You see where I'm at?

MS. WONG: I do. So the FTC's position is that it's still strict liability, but in this case we actually have evidence that for I think it's docket -- it's the FTC's reply to the preliminary injunction. We saw the defendants' chats, and they actually stated that the timeline they presented for the Monarch, they provided a very specific timeline about why they can do delivery by the end of 2013.

THE COURT: And that will go to me saying -- me making that representation but knowing that my car -- or I don't have a car.

MS. WONG: Right.

THE COURT: But yet I'm making it. So there's --

okay.

MS. WONG: But intent is still not an element.

THE COURT: It's not an element, but I have to focus on the surrounding circumstances because what BF Labs is suggesting is they have a future kind of event. I will deliver on this day, correct? And I know what you're saying. We'll deliver this on this day.

It seems to me that if the FTC is to make their case, you would have to suggest at the time that they said we're going to deliver on this date, there's circumstances surrounding them making that statement which they know is false.

MS. WONG: I would disagree with that, and I would say that is strict liability.

THE COURT: The fact that they said it and your people reasonably --

MS. WONG: Believed it.

THE COURT: Okay. But that helps me. I just want to know what the position -- Mr. Humphrey, you know where I'm going or you've heard that. I just want to hear your thoughts on that.

What do you suggest with kind of the strict liability? I guess what I was trying to get at was different than some of the case law, there's nothing really on point, is that the case law you've got, it was always some present

event, i.e. I don't know, they gave me a case but another case that I know my law clerk and I talked about dealt with copper or something, there's no copper in it, there was 50 percent. I mean, right there you don't have to show intent. You made a false representation.

I think in this case we're talking about a future event. So my question is the misrepresentation at the time you make it, how do we know it's true or false or your intent is misrepresented? If you can offer the court some assistance, I'd --

MR. HUMPHREY: I'll try and do that, Your Honor. I think you're on the pulse of it, and I think that is part of the motion to dismiss. The reason we filed the motion to dismiss in this case is to articulate that in this instance when -- there really isn't case law on point in the FTC context, so we cited to the SEC context.

And it has to do with the very issue you've just described is you're making that representation about the future, and do you have a -- taking into account what you know about your process and your suppliers and your manufacturing timeframe, you know, those all have to be taken into account and looked at.

I think one thing that factors into it is the industry itself was a preorder industry at the time. We've evolved. That's -- we've moved from that. So that impacts

the analysis because, Your Honor, at all points going to what you said, I think you have to keep that in mind in light of the preliminary injunction standards, and in the relevant statute, the FTC is required to show that BF Labs is violating or about to violate the law.

So it's not looking back to see whether they violated it in the past. From that perspective, Your Honor, we can have a trial on the merits, and we can figure that out, and we're going to have that fight. But injunctive relief, to stop the company from manufacturing and delivering product, they need to meet that statutory requirement of violating or about to violate. So you look at now to make that determination.

In terms of what we need to show today, you know, Your Honor, down the road we'd be happy to provide the court with expert testimony on a consumer's expectations or reasonable expectations, to provide more context to what we knew around the time and when we're making the announcements. And then the net impression, I think that's something, Your Honor, that's a little difficult for us to get into today with the time constraints, but ultimately we'd like the court to understand, we tried to present that through the motion to dismiss, Your Honor, exactly what it is that BF Labs, that Butterfly Labs was representing to consumers in connection with delivery of a product that was at times under development

and rapidly evolving. Everyone in the industry is fighting to get their product out the door first, and knowing that you -- you know, people are deciding who are they going to go with, and it's a race to get a hold of the machine, plug it in, and start making Bitcoins.

That's the idea behind it. So knowing that the technology may not have existed at the time, these consumers have to understand what it is they're going to use the machine for. Market volatility factors into that, Your Honor. I think that's part of the equation, and then we can look in detail, and we're happy to look at in detail, the issue of what the company knew when it made the representation, how that impacts the future and what --

THE COURT: But here for purposes of this hearing you're saying the court need not look. What is my focus? Tell me what I need to focus on.

MR. HUMPHREY: Your Honor, I think today --

THE COURT: Or what you believe I should focus on.

MR. HUMPHREY: What I believe you should focus on, Your Honor, is the statutory standard of a showing by the FTC that the company today is violating the FTC's laws or is about to violate them. That's part of it.

I think they also need -- I think they've incorrectly cited the standard that applies for your review of their likelihood of prevailing on the merits and what they

need to show today. I think they need to show a likelihood of ultimate success. I think that's a higher burden than what they've presented to the court, and so we would expect to hear them marshal evidence today that would meet that element showing down the road and we get to a trial, that they're likely -- they have a likelihood of success on the merits. Candidly, Your Honor, I think that in part would require some expert testimony about consumer expectations, and they don't have that today.

Then, Your Honor, I think the public interest is a big factor in this hearing. We intend to focus -- now, look, I've mentioned before, Your Honor --

THE COURT: That's the equity aspect.

MR. HUMPHREY: The equity aspect. But also the FTC is charged with the protection of the public. We've heard their role. We've heard their mission, but in fact what we've seen in this case, Your Honor, is that -- and they have -- they have customers that say one thing. We have customers that say another.

But ultimately at the end of the day if there are customers, if there are customers that are demanding their product and demanding refunds and the company was delivering that and that was stopped through the FTC action, I believe that is not in the public interest. In fact, it harms the public interest, and I think we've made a sufficient showing

to cause some question about whether injunctive relief should remain in place.

Our thought is, Your Honor, we just want to fight on the merits. We'll fight them. But right now the way it's set up, that makes it difficult to do that, but also the need to issue an injunction to stop us from doing something where we're violating or about to violate the law, it's not present, and I think that's the focus today, Your Honor.

THE COURT: Thank you.

Ms. Wong, I'll give you an opportunity to respond, and then we'll move forward with this hearing. What do you think the focus of the court, what does the court need to -- is Mr. Humphrey correct with respect to that you're violating or about to violate?

MS. WONG: I would disagree, Your Honor. We have case law that states that actually past conduct is highly suggestive of the likelihood of future law violations, so we do have --

THE COURT: That's one thing I have to consider. I can't use past. I have to use future; is that correct?

MS. WONG: Yes. But unless -- we're not looking at doc crime, so we can only look at past conduct to look at how indicative it is of future behavior.

And in addition to Mr. Humphrey's point, express claims are presumed material, and we have made the

representation that defendants have made express claims with respect to their BitForce. So they've explicitly stated a delivery date. So we don't need to provide expert consumer testimony because they explicitly stated a delivery date and it was false.

And then, finally, with respect to the SEC --

THE COURT: And there's no intent required to know that they knew it was false? That's not --

MS. WONG: No. There's no intent requirement.

THE COURT: Okay.

MS. WONG: And, finally --

THE COURT: So the fact that they made that statement, that in and of itself is enough, and it didn't come true, whether they thought it was true or not true?

MS. WONG: I would state yes and I would state that if they were unsure, they should have projected a later date.

THE COURT: Now, is --

MS. WONG: Here -- I'm sorry.

THE COURT: No. I apologize.

MS. WONG: I apologize. Here we're not talking about three days or five days or like one or two misrepresentations in terms of delivery date. For the BitForce, I would have to check my papers, but we're talking about five delays where they made explicit representations about a date, and it was false five times. Even if you say

that the first time the car broke down and you couldn't get there on Friday, by the fourth or fifth time, maybe you should project a later date.

But, again --

THE COURT: And the fact that you don't is misrepresenting --

MS. WONG: Correct.

THE COURT: Okay.

MS. WONG: Then, finally, I just want to add a point about SEC case law. Consumers are not investors and we do not believe that the SEC case law applies. When you make a representation to a consumer, you have to meet it, and if you don't, it's a violation of the FTC Act.

Thank you.

THE COURT: Mr. Griffin, I know you stood up, sir.

MR. GRIFFIN: Halfway.

THE COURT: You want to add a quick comment?

MR. GRIFFIN: I was going to try to answer your question very directly. I'm not an expert on FTC law. My focus in this hearing is very narrow, but I want to try to give it a shot at what I think you need to look at as to falsity, which was the question you started to ask. If the statement has to be false when made, yet there is no intent requirement, there's got to be then objective evidence at the time the statement was made --

THE COURT: To support. That's my question. I probably didn't articulate that well.

MR. GRIFFIN: You articulated it exactly right, but it also gets bound up in intent because if there was evidence that the party knew it was false or intended it to be false, that would be objective evidence of falsity at the time it was made. If the party had good reason to believe that it was true when it was made, that's objective evidence too. All those facts are objective. There's going to be some mixing of the subjective and the objective, but there still has to be objective evidence at the time that the statement was false.

THE COURT: And I know the FTC's belief may be a little different than that, correct?

MS. WONG: Correct.

THE COURT: Okay. I appreciate -- you know, I just want to make sure I'm focusing on it. Now I know definitely what the parties' positions are. With that said, why don't we dispense with any -- I'll probably have comments or thoughts later, but right now the FTC, if you want to present your case in chief in terms of this hearing, you can call your first witness.

MS. WONG: Thanks, Your Honor. You don't want an opening statement? We should just start with the witnesses?

THE COURT: That's fine. If you want to do opening statement, I won't preclude you.

MS. WONG: I want to do what's most helpful for you.

THE COURT: That will be fine. You can lay it out.

PLAINTIFF'S OPENING STATEMENT

MS. WONG: Your Honor, as we've already discussed, the FTC is here today to respectfully request that the court enter the commission's proposed preliminary injunction. We have provided lots of evidence, and we will provide further evidence today on why a preliminary injunction should issue.

But this is not a summary judgment hearing, as we've all discussed, and the FTC does not need to present evidence of final determination. We're trying to show a likelihood of success on the merits, and here a preliminary injunction should issue because there's evidence of past bad acts and we would argue continuing bad acts and there's a need to preserve assets for final relief for consumers.

This is a simple case. Defendants sell Bitcoin mining machines, and when it comes to Bitcoin mining, time is of the essence. Using an analogy that the defendants themselves invoke, Bitcoin mining is like gold mining. There is a limited amount of gold, and as time passes, it gets more difficult because there's less gold to mine and other miners have more sophisticated pickaxes.

Defendants have sold nearly $80 million of these figurative pickaxes by telling consumers that they will deliver them in a timely manner, and it's not disputed that in

terms of the BitForce 65nm mining machine, the defendants first represented that they will ship in October of 2012. After numerous delays, it's February and March and again in April, initial delivery did not occur until April. And at that point defendants represented that those machines were only for members of the media and told consumers not to cry about it.

Consumers, who actually spent money on the machines, did not really start receiving them until around September of 2013, nearly one year later. And for their next generation, Monarch 28nm product, this happened again. They represented that shipment would occur around the end of 2013, so we'll say December, and defendants are now saying that the first of these products only shipped in August of 2014, one month before the FTC's action.

Consumers rely on defendants' representations, and when they didn't get their products in a timely manner, they filed hundreds of complaints with the FTC and thousands to their payment processor. Complaints were so voluminous that PayPal suspended the defendants' account.

And because of the defendants' delays, the products that the consumers received were not the moneymaking machines that defendants claimed they were, and instead the products that consumers received were worth a fraction of what they would have been.

If I understand defendants correctly, they're trying to say this case is about speed-to-market issues or about the preorder model, but those are not the issues here. The simple message is that if you make a representation to a consumer that you're delivering something by a certain timeframe, you cannot be four, six, or nine months late and hold on to their money during that time period.

Defendants advertised their products and services through their website, and as stated in the FTC's papers, their website made express representations about delivery on the product page and the order page. The websites included quotes such as Honest Abe, we're planning to ship by October of 2012, or that they're ahead of schedule, and when a former employee asked the management team to be more transparent with consumers about delivery delays, he was told that defendants did not want -- he was told that defendants did not want the consumers to know they would have to wait so long for the machine.

Defendants argue that they made adequate disclosures on their blogs or on their forums or that they warned consumers about any delays, and defendants may say that they never made those express representations. And defendants may point you to three consumer declarations showing that those three consumers -- their expectations were met, they were happy with their order. And that's great but that's not what

the law requires.

First, existence of some satisfied consumers is not a defense against FTC Act liability, and, second, defendants did make express representations, and even if some consumers interpreted it differently, it is well-established case law that a representation is misleading if even a significant minority of reasonable consumers are likely to take away the misleading claims. Here it's not a minority of consumers. We know that there -- PayPal received about 5,000 complaints.

And, further, any qualifying language the defendants may have do not overcome the net impression that consumers may have gleaned from the defendant's product page or order page representations. First, there was no qualifying language for the BitForce on the order page. The order page and the product page simply provided the shipment date with no qualifiers.

And, second, for the Monarch, even though defendants vaguely warned consumers not to order the product if they're unwilling to wait for the completion of development, they qualified those disclaimers. Their disclaimers actually reassured consumers that they would meet this new date because this was their second line or fourth line, and they told consumers they have more experience now. They provided an explicit timeline that turned out to be false, and they told consumers that their delivery dates are solid.

Regarding all the disclaimers on their blog or forum, qualifying language elsewhere does not overcome the deceptive net impression that consumers may have gleaned from the order page.

Further, defendants also sent e-mails promising shipment for the Monarch in early 2014, and there were no qualifiers in those e-mails. The evidence shows that aside from the three consumers who have been cited by defendants, thousands of consumers did rely on the defendants' delivery date representations, and when those representations turned out to be false, thousands of consumers wanted their money back.

Defendants may tell you that they resolved all those complaints; that the consumers who complained to PayPal and FTC all got their products now; and that the FTC's action is no longer relevant. But this is not true. Even for the consumers who did receive a product, receiving a product four, six, or nine months after the initial shipment representation is misleading.

This is relevant when you're ordering a wool sweater in February but then you don't get it until the heatwave in July, and it's relevant here when the evidence shows that the FTC's expert will further explain where the delay rendered the products nearly obsolete or at least significantly decreased in value.

Further, the evidence also shows that defendants made claims about the profitability of the machines. The evidence shows that defendants' employees called their products moneymaking machines, and the evidence shows that defendants explained on different areas of their website that their products were profitable and should be profitable over time.

Finally, the balance of equities favors the relief sought because the public interest in preserving assets to redress consumers outweighs any interest in the defendants. The initial capitalization for this company was $8,000. Everything else taken in afterwards was consumer money.

When the FTC filed for the TRO, we only discovered more evidence of misrepresentations to consumers. The FTC learned that despite express representations to their customers that they don't use the customers' equipment to mine for Bitcoins themselves, they in fact do. Defendants may argue that this is not relevant and that they have every right to use their customers' machines or that they were simply testing the product. But no matter what their reason is, the point is they made an express misrepresentation to their customers.

Consumers were not aware that they were receiving a used product or that the merchant they trusted with their money was in fact competing with them for that same finite

supply of Bitcoins. And it's not just using consumers' products. Defendants also used consumers' money for illegitimate purposes.

I understand defendants are stating that there's nothing improper about their use of consumer funds, but the evidence shows that even when the defendants have failed to deliver products to consumers, they used consumer money to pay for one of the defendant's personal residence. They used consumer money to pay for his sauna, to pay for his children's day care, and to pay for an Audi. And they even used consumer funds to purchase red foam figures so they can monitor customers saying why you won't ship.

Defendants do not want the preliminary injunction to issue so that they can go back to business as usual. They may argue that they have stopped taking preorders so there's no reason for the preliminary injunction.

The case law shows that voluntary cessation of an activity is not reason to not grant a PI. There is no guarantee that defendants won't return to their preorder model, and this practice continued even when there are numerous active litigation cases going on.

Defendants may also argue that there is -- that their use of funds is completely proper and that the accountant they hired found nothing wrong with their use of funds, but the court-appointed receiver and a third-party

consulting firm found that their financial records were not accurate. They found that the records were not updated and do not represent the company's true financial status, and they found that the accounting system and the management's estimates varied significantly.

Even using the receiver's conservative estimate of refund liability of between 14 to 16 million, and FTC contends it's much higher than that, there are no additional sources of revenue and defendants won't be generating additional revenue but will be incurring expenses of about $1 million a month.

For this very reason a preliminary injunction should issue so that the remaining assets can be preserved for consumer redress.

Thank you, Your Honor.

THE COURT: Thank you, Ms. Wong.

Mr. Humphrey, you can address it now or at the beginning, however you -- if you want to address the court in your opening now, you can do so.

MR. HUMPHREY: Your Honor, if it pleases the court, I'll make just brief comments.

THE COURT: You can go now. That's fine.

DEFENDANTS' OPENING STATEMENT

MR. HUMPHREY: Thank you, Your Honor. I appreciate that.

I don't intend this as a formal opening. I just in

light of what Ms. Wong has presented, I'll address a couple issues, and then we'll move into the evidence.

I do note that during Ms. Wong's presentation, Your Honor, we didn't hear a reference to Butterfly Labs or any of the individual defendants violating or about to violate the law when you look at the facts today. We did hear about preorders in her opening. What you didn't hear is that preorders were ceased and not just -- not just on the cusp of this action but months ago. In July of 2014, the company voluntarily ceased preorders.

Ms. Wong's opening, while well done, was a -- an opening fit for a trial on the merits. I don't believe the focus was on what needs to be shown today for injunctive relief. The issue of whether the court is in a position where you need to stop something from happening that's happening today, the evidence is not there. We don't believe it will be there at the end of the day.

Your Honor, we heard a comment from the FTC that the SEC case law we've cited is not appropriate because that's a situation where it involves investors. I encourage the court to look at this from a proper perspective because in fact individuals who purchase mining machines are in the role of an investor. They're making a bet. This is a market-based activity. It's a market filled with volatility.

They say that -- and their proposed expert testimony

will focus on the hash rate involved in mining, so it will focus on the mathematical computation and the difficulty of that, and you heard the analogy drawn to the Gold Rush and a pickax. The problem with that, Your Honor, is nothing they've presented and nothing we anticipate they will present today deals with the issue of potential profitability by looking at the market and its volatility.

But having said that, Your Honor, I do want to clarify that this case, we have to remember what it's about at all times, and they have built the case around the two propositions of, number one, the return on investment or the amount of Bitcoins or profitability.

And Ms. Wong did reference -- she referenced a representation about a moneymaking machine. Your Honor, are there stray comments in the record where that issue comes up? There are. But I will -- I will tell you the record has no evidence in it that that was a part of the business model, that was how the company did business. In fact, the record is to the contrary and demonstrates in Skype blogs that they've had access to that there were discussions -- this is behind closed doors. This is the telling evidence. This is behind closed doors, nobody's listening to it, at least they think at the time, and they're talking about how you do not, you do not represent to customers return on investment. That was not part of the business model. In fact it was forbidden.

Now, whether someone called it a moneymaking machine at one time or another, I'm not going to say it didn't happen. In fact, I've called it a moneymaking machine because, Your Honor, that's what it is. That's the idea behind mining. It's to accumulate Bitcoin, hope the value goes up, and be profitable in the endeavor.

But if you're not -- if this company was in the business of misleading, into duping, misleading, enticing customers to buy the equipment so that they could reap wild rewards, and we've seen schemes like that, this isn't one of them. They were in the business of selling equipment and not making representations about possible return.

As to preorders, that's the other prong of what their case is about. The delivery issue. Your Honor, you've heard from defendants in their business plan. You'll hear from them today. That's not part of what they're doing going forward. Now, we can -- we have and we will, we will defend the preorder model and its use, its legality going to the issues the court has identified. That will be part of the trial on the merits.

But for today's purposes, the focus has to be the issue of violating or about to violate, and what we know in the evidence is that this company does not use a preorder model today and it hasn't for some time, and consumers are not at risk of what the FTC is complaining about. Today if you

order a product, you order it and it's available for delivery. That's the model going forward. That eliminates the concern that we're hearing about from the FTC.

Will we talk about that in a trial over merits? You bet we will. We're excited to do so. But for today the issue of going forward and looking at this company and what it is and what it does, that is not an issue.

And in fact, Your Honor, it goes to the public interest, and we know there are customers who want their machines. We know there are customers who want a refund too, and they -- the company was providing refunds and they were providing machines.

Now, we've come a long way in this case, Your Honor. I'll wrap this up by saying this started out as the filing of the lawsuit and the company being called scammers and the bogus company, and, you know, look, setting that aside, the language itself, it charged the emotions.

The company is not bogus and it's not scammers. And we've come a long way. The company has worked hard during this case, during the interim period to show that that's not the case, to open up to not only the FTC but to a temporary receiver who's made significant requests for information, and voluntary efforts have been made to provide that information.

When you're talking about an injunction, Your Honor, you're talking about stopping some harm from occurring.

You're also talking about -- we acknowledge there is an issue about assets. That's part of a preliminary injunction. That's part of this. But, Your Honor, the facts show that when we're talking about assets, and I don't mean this in any disrespectful way, Ms. Wong has referenced the million dollars required to run the business going forward.

The temporary receiver, I compliment them on their efforts. The difficulty of this, it's a new industry, novel issues. They've taken on a lot with it. But, Your Honor, under our projections, the temporary receiver through today will probably be right around a million dollars in fees and expenses.

We think that's contrary to the public interest. We think that's -- over time we think that will eat away at what's available for consumers. The company was providing refunds and was providing equipment and was intending on manufacturing additional equipment to fulfill deliveries. That's the best use of available money, Your Honor, is to let the company operate until we get to a trial on the merits.

Finally, you know, Your Honor, there was a reference to burn-in testing, and I know the court has had questions about that. Your Honor, I encourage you today is not the day for that. This is not the lawsuit for that. This is not the time for that. We have a pending putative class action in the District of Kansas in another action brought by one individual

consumer seeking in excess of $5 million, and that is going to be an issue over there.

This case is about consumers and the representations, the preorder model, the profitability issue. The burn-in testing while we -- you know, we disagree that it's using customer equipment. That's an industry standard testing. Burn-in testing is industry standard. It's not using the customers' equipment. It's making sure that the customer gets equipment that works.

And what the evidence will show today is that for that theory, for that to be an acceptable theory and for evidence to bear out that that's the way the company operates, you need to see evidence that the company builds equipment and then sets it up so that they can use that equipment for their own benefit before getting it out the door to consumers.

THE COURT: But what -- arguably that wouldn't even be for this hearing now, would it? The fact that you burn -- because the ultimate question going back, and that's what I want you all to focus on, what's the ultimate question, the misrepresentations with respect to delivery date and then the ROI or the profitability.

MR. HUMPHREY: Your Honor, those two are the misrepresentations, but the issue of burn-in testing, to the extent that that would go to the issue of -- certainly, the return-on-investment issue, I think that is separate, Your

Honor. Now, whether it ties into the issue of delivery and projections, okay, it might, but it's minimal. What the evidence will show is that when the company received chips, when they received the parts they needed to make the machine, they made the machine and they got it out the door. They didn't make a machine and then burn-in test it to their benefit, to the detriment of the customer, and then ship it after it's obsolete. That is not what the evidence shows, Your Honor, and that's what we expect to show today.

Thank you.

THE COURT: Ms. Wong, do you wish to call your first witness?

MS. WONG: Your Honor, I just want to note that the bulk of the FTC's evidence has already been submitted to the court with our temporary restraining order, our reply in support of the PI, and last week's supplemental evidence brief. That being said we are calling two witnesses today.

THE COURT: Okay. Thank you.

MS. WONG: The first witness we're calling is Mr. Anthony Fast.

THE COURT: Yes, sir. If you want to come forward.

ANTHONY FAST, being duly sworn by the courtroom deputy, testified:

DIRECT EXAMINATION BY MS. WONG:

Q Please state your name for the record.

A Anthony Fast.
Q Where do you live, Mr. Fast?
A Lawrence, Kansas.
Q What is your educational background?
A I have a bachelor of arts with an emphasis in mass media and public relations, graduated with honors.
Q Do you have a family?
A Yes, I do. I have a 13-year-old daughter.
Q What is your current occupation?
A I am currently a social media analyst and moderator. I also work as a freelance web designer, and I also occasionally do Bitcoin consulting.
Q With regard to social media, what type of work do you do?
A We do -- I work for a company out of the UK as an independent contractor. We do analysis and moderation of companies' social media websites, Facebook, Tumblr, Twitter, YouTube, companies such as Sony, Chanel, Burberry, and we give them feedback on their ad campaigns.
Q And with regard to web design, what type of work do you do?
A I currently am working on designing web -- Wordpress websites for a couple of clients and I've done that before.
Q And with regard to Bitcoin consulting, what type of work do you do?

A I've done a variety of work in that area. I've worked with entrepreneurs who are interested in getting in to Bitcoin and looking at the market. I've been giving them a detailed analysis of who the mining manufacturers were and, you know, their likelihood to deliver on time plus, you know, their -- the background, who the key players -- just giving an overview on the marketplace and where to order your -- what would be the most -- what would be the best place to order equipment from.

Q Mr. Fast, is there anything that would prevent you from testifying truthfully today?

A No.

Q Have you ever heard of a company called Butterfly Labs?

A Yes, I have.

Q In what regard?

A I first heard of them in approximately 2012, summer of 2012, when I first -- it's around -- was it 2012? Yeah, 2012. That was around when I first got in to Bitcoin. I had heard the -- about mining Bitcoin, and so I was interested in all aspects of Bitcoin at that time. And I heard they were working on FPG -- they had already developed FPGA miners, and they were planning on releasing the first ASIC miners in the fall of 2012.

Q Have you heard -- have you had any further dealings with Butterfly Labs after you first heard of them?

A Yes, I have. I was employed by them. Well, I -- my other dealings were I was contacted by my uncle asking because he was offered or -- offered an interview with the company, and he didn't know -- my uncle, Dave McClain, he didn't know much about Bitcoin at the time, so I explained to him about Bitcoin and then also, you know, relayed some concerns, you know, that there was some question out there on Butterfly Labs and their, you know, delivery dates and, you know, and that speculation.

Q Okay. So when did you talk to your uncle, Dave McClain, about Butterfly Labs?

A That would have been the fall of 2012.

Q Okay. And then you just mentioned that then you went to work for Butterfly Labs?

A That's correct.

Q And when was that?

A It was approximately March 2013, March -- yeah, late March 2013.

Q Okay. So you mentioned that you had some concerns about Butterfly Labs and you relate them to your uncle, but then you, yourself, went to work for Butterfly Labs the following March of 2013. Why is that?

A That is correct. Well, first of all, you know, my concerns were based on, like I said, at the time it was internet speculation. So I saw, you know -- I was looking at

things from the outside at that time and then I -- when I spoke with my uncle, he gave me a different aspect of, you know, maybe what was going on on the inside there. And so he called me one day to come in and interview, and, you know, I accepted the position.

Q So what did Mr. McClain do at Butterfly Labs?

A He was the account manager.

Q And who did he report to?

A I believe he reported to -- I'm not exactly sure exactly who he reported to to be honest with you.

Q Okay. So you mentioned that you started working at Butterfly Labs in March -- around March of 2013. So who did you report to?

A Originally when I started working there, I, you know, technically I was under the purview of assisting Dave, my uncle Dave, with his duties, and that was initially.

Q Okay. And what was your position at Butterfly Labs?

A When I left or at the time --

Q Let's start from the beginning.

A Beginning. Basically it was just assisting in both customer service and with duties that my uncle was performing at the time with hosting customers, helping develop spreadsheets for information, things like that.

Q And then -- so after that how long did you do that?

A I only did that about a week or two, and then after that

I was promoted to marketing manager due to my experience in marketing, public relations, and education beforehand, and so my title was marketing manager, and I reported to Jeff Ownby.

Q And how long did you do that?

A I did that until I left in late June 2013.

Q So were you fired?

A No. I resigned.

Q Okay.

A With the two weeks' notice.

Q Okay. So while you were -- let's start from the first position. When you were assisting your uncle, Dave McClain, what were you doing?

A When I was -- can you clarify that?

Q I'm sorry. What were your duties when you were assisting him?

A Like I said, I was assisting him originally just with the spreadsheets, with hosting clients, things like that. Ended up once I got promoted, I ended up helping him with answering the phones and dealing with clients over the phone and some other duties as they came up as updating the website or certain aspects of that.

Q And what were your duties as a marketing manager?

A As a marketing manager, I was -- I did a variety of things. When we would add a product to the website, I was responsible for adding into the Magento -- Magento e-Commerce

system that we used. I also photographed the items, wrote a description of them. Additionally, I was responsible for the social media that we had, including the Facebook, Twitter, YouTube account, and Tumblr at the time. I also assisted in writing content for various websites that we operated as well.

Q Okay. So let's start with you mentioned that part of your duties were to assist clients or customers, and what did you do -- let's talk about that. What did you do -- so would it be accurate to call it customer service?

A I would say it would be accurate on that end, yes.

Q So what did you do there in customer service?

A When people would call in, they'd ask, you know, either -- I did it both through the phone, and I assisted on the e-mail as well, the office@butterflylabs e-mail account.

But basically if people called in or sent an e-mail in when I would assist them, I would -- there would be questions on, you know, when they would get their product; if they ordered now, when they would get their product; if they ordered back in November, when they would get the product; questions about refunds, questions about legitimacy of the company. There was a whole host of issues, but that's what it primarily focused on was customer service wise.

Q So starting with delivery, when customers called in about delivery, what did you tell them?

A We told them that initially that it would be two months

for the delivery of their product. It depended upon whether the customer already had an order or whether they were making -- if they are asking, you know, if I order today, when should I expect to receive my product. So if somebody had already made an order, you know, we gave them somewhere between two months and whatever the day it was. If somebody did not make an order, we initially gave them a response that it would be two months from the date of when they ordered.

Q So how did you get this two months?

A Something that, you know, the -- it was part of the company policy when I first got there that I heard my uncle giving that advice to customers over the phone. I also -- there was canned responses, and our Gmail account, office@butterflylabs.com e-mail account where it would say, you know -- we have a lot of canned responses, and one of them was, you know, two months. At some point also it would get changed to two months or more, but, you know, two months is where I got that. And that's what was pretty much a company-wide, you know, policy for the most part. So I observed my uncle and other customer service people giving that answer.

Q So if it was an old customer, you would tell them two months from when they ordered, and if it was a new customer, you would tell them two months from the date that they called or -- is that what you're saying?

A No, not two months from when they ordered because we had already passed that point, but if it was an old customer, if we were telling new customers two months or even two months or more if they ordered today, we'd have to obviously give a shorter answer for a customer who had ordered previously in a queue. And, you know, sometimes that would be an estimate of, you know, a month in between there rather than two months. We'd say the end of April or something like that.

Q So did you check with the shipping department to see if the product was coming in a month?

A I did not check with the shipping department, no, because we weren't shipping when I originally started there.

Q So -- okay. So do you think that there was a basis for the two months that they were telling consumers?

A No.

Q And why not?

A From my observation of what was going on in the lab, I guess you could say, which was directly next to our office, I could tell, you know, even from when I started there that when we were telling customers two months, you know, we only had a prototype that was running at the time, and there wasn't -- and that was still an evolutionary prototype. It was still changing at that time.

So it was from my observation that this -- there was not a -- you know, analysis of the supply chain of, you know,

shipping of other things because they didn't even know at the time what all parts that they needed for the machines. So I do not believe there was a good-faith answer there to give two months.

Q You said you also handled customer complaints about refunds. What was Butterfly Labs' policy on refunds?

A Initially when I began there, we told people that we had reserved the right to refund or not refund but that -- and for the most part they did refund, but they -- it was strictly stated that once we began shipping, there would be no more refunds.

Q So what does it mean once you start shipping, there will be no more refunds?

A Essentially once we started shipping, you know, it was kind of a -- that terminology wasn't explicitly stated, but it was essentially when we sent out the e-mail that we were shipping on May 1st, it gave customers the option -- told people we were shipping at that time. It gave customers the option to either accept the changes because there were changes in the initial specs of the machines, and it -- or they could get a refund at that time. But that was their final opportunity to ask for a refund.

Q So were they shipping on May 1st when you sent the e-mail?

A Very few, very few items were shipping, and the only

ones that were shipping were Jalapenos. They had not even -- that was the 5 gigahash machines. They were not even shipping the -- any of the higher machines at that time, and most of the machines that had been shipped, you know, there were some machines that shipped in April, but they mainly went to media developers or -- some may have gone to customers, but primarily it was media developers.

Q So what happened after May 1st if consumers wanted a refund?

A Well, can you clarify that? Is that in reference to the e-mail we sent or after that?

Q No. You said after shipping started, there were no refunds. So what happened if consumers called asking about a refund?

A We told them that we were not doing refunds at that time anymore because we were shipping.

Q And were you -- did you check if that customer's product was shipping?

A Often I -- I'm sorry, can you please clarify that?

Q If a customer called to say that they want a refund but you said no because products are shipping, was it -- was it because that customer's product was shipping?

A No. It was because we were shipping products in general. We would look up -- you know, oftentimes I would at least look up the customer's account and see where they might

be in the queue, but it was not because that customer's specific equipment was shipping. It was because we were shipping equipment for people previously in the queue.

Q So did you ever hear a customer explain why he or she wanted to purchase one of defendants' Bitcoin mining machines?

A Yes. I often heard a variety of reasons why people wanted to purchase it. The main reason would be that they were -- at that time the price of Bitcoin had increased exponentially and people were obviously -- you know, they were wanting to make money from Bitcoin.

Q So how would a consumer know if they could make money by buying one of these machines?

A There's a variety of ways to do that. There are some online calculators that can calculate the profitability, and so they would know that. We would also reference them to a calculator called bitcoinx.com that was both in our Gmail canned responses and also something that we did over the phone as well. And we would reference them to go to this calculator.

Q What is bitcoinx.com?

A It is a profitability calculator. It's where you can input various variables such as hash rate, price of Bitcoin, electricity cost, numerous other instances there, and so that's what that is.

Q Do you know who owns bitcoinx.com?

A I do know that it is owned by Butterfly Labs. It was on a network site list that I was given by Jeff Ownby when I first began in the marketing manager position.

Q Okay.

MS. WONG: Sorry. I'm almost done.

THE COURT: No. You're fine.

Q (BY MS. WONG) Do you know what sort of testing is done on Butterfly Labs' Bitcoin mining machines?

A Can you clarify that? During the time I was there?

Q Yes, of course, sorry. During the time you were there, do you know what sort of testing was done?

A Yes. They tested the machines on the main block chain network.

Q And how do you -- what does that mean?

A That they were using the mainnet essentially as opposed to the testnet. A testnet you can -- it's kind of a sandbox environment. The mainnet is the main environment where actual transactions go through and where the actual Bitcoins are worth -- are, you know, worth something as opposed to the testnet where they're not worth anything there. But the mainnet is where they were testing equipment.

Q So that means that when they were testing the equipment on the mainnet, they got Bitcoins?

A That's correct.

Q How did you know that?

A I knew that, first of all, because when I saw the first prototype running, I asked my uncle where the -- you know, what it was being mined to or where the Bitcoins were going, and that was explained to me that it was to Josh Zerlan for a previous business deal.

Additionally, I also saw on the burn-in test rooms that we had Nexus 7s, the tablets, and they were connected to EMC with different burn-in names. EMC is the eclipse mining consortium, the pool. They would have different burn-in user names on them. They were mining to the mainnet through that way.

Q Okay.

MS. WONG: That's all I have, Your Honor.

THE COURT: Okay. Thank you.

Mr. Humphrey, cross-examination.

MR. HUMPHREY: Actually, Your Honor, Mr. Perry will handle this cross.

THE COURT: Mr. Perry. All right. Thank you.

MR. PERRY: Morning, Your Honor. How are you?

THE COURT: Good.

CROSS-EXAMINATION BY MR. PERRY:

Q Good morning, Mr. Fast. How are you?

A Good. How are you?

Q You stated earlier that you were with Butterfly Labs from late March to late June, correct?

A That's correct.
Q That's 2013?
A That is correct.
Q In one of your declarations you included a LinkedIn profile. Do you recall that?
A I believe that was included by the FTC but, yes.
Q Okay. And also online you have your current resume, correct?
A That is correct.
Q Is that resume up to date?
A No, actually it isn't. I haven't updated my resume since I've been working self-employed, so I've not been looking for positions. I have not updated it recently.
Q Does it have all your previous employers?
A I believe it does have most of my previous employers. There may be a few that, you know, I've been told by resume experts to omit, you know, from my resume because it didn't look, you know -- I worked a lot of different college jobs when I was going through college. So short time periods like that, I was told unless it was helpful, I should target my resume to a job that I wanted to seek.
Q Did you ever work for Google or any sort of Google subsidiary?
A I worked for a company that was in between Google. They were a hiring company. They were called Vaco, V-a-c-o. I was

hired on by them to work for Google, but I was employed by Vaco.

Q And what Google subsidiary did you contract for?

A Google Fiber.

Q Here in Kansas City?

A That's correct.

Q How long were you there?

A Approximately two to three months, two months approximately.

Q From when to when?

A It would have been around February, February 2013 through approximately April 2013 -- or 2014. I apologize.

Q Sure. So a year after you had been with Butterfly Labs; is that correct?

A That's correct.

Q Were you asked to leave?

A I'm sorry, what was that?

Q Were you asked to leave?

A No.

Q You resigned?

A I resigned giving them my two weeks' notice.

Q You know, following that resignation, you posted some disparaging comments about Google online, didn't you?

A I wouldn't say they were disparaging, but, yes, I did post some comments online, that's correct.

MR. PERRY: May I approach?

THE COURT: You may.

MR. PERRY: Again, Judge, I'm going to be very brief with this.

THE COURT: Sure.

Q (BY MR. PERRY) I'm going to provide you what's been marked as -- actually I think -- I'm going to give you what's been marked as Defense Exhibits 519 and 520. If you could just go ahead and read those, and a little clarification, that bottom paragraph, you can just start on the next page.

A Sure.

Q Thanks.

A So just to clarify, you wanted me to read this; is that correct?

Q Yes, please.

A Okay. I'll be back in the cryptocurrency world starting tomorrow. If anyone needs any consulting work done that I had to turn down before or other projects they are interested in, then PM me. I'm not going to air the dirty laundry in public as to why I left, but let me just say that working for Google is not all that it's cracked up to be.

They count on the cache of their name to get you in the door. I was lied to from the beginning and it went down hill from there, but such is my life and big business. I'm sure they'll find another cow to throw in the slaughter pen

without an issue now that I'm gone.

This has been extremely disappointing, and I would have expected much better. But looking back on it, I can't say that I'm necessarily surprised. We, the working people, have been bamboozled since the beginning of time through the fights for unions in the early 1900s, Reagan busting the air traffic controllers union in the '80s, and then when the recession hit in 2008, they realized they could work us to death with no recourse or retaliation.

Those in charge of this country have done a tremendous job dividing us through petty social issues, panem et circensus, the decaying school systems, and the burden of debt we carry from attending college to better ourselves. This is not the America I was indoctrinated into growing up with its fantastical ideals of freedom, democracy, and equality for all. This is a corporatocracy that will be our undoing.

Q Not exactly a positive recommendation, is it?

A I would say that my only error there was to not include that there was an intermediary company between myself and Google. I would say most of that concentrated on things that did not involve Google.

Q Okay. Thanks.

And you know it -- you were at Butterfly Labs for roughly three months, correct, from late March to late June

2013?

A That would be four months.

Q Four months. My fault.

And you haven't been employed there since, correct?

A I have not.

Q That's over a year and a half ago?

A Approximately, yes.

Q You were pleased to see Butterfly Labs have the action against them by the FTC, correct?

A Yes, I was.

Q Okay. And in fact you posted that online, correct?

A I did post something about that online on my Facebook, correct.

Q What did you post online?

A I posted one of the articles from Ars Technica. I think that was one that said -- I posted a single word response that said "bam", I believe. The other one was a posting by the FTC themselves on there from their official website, and I posted, "And boom goes the dynamite."

MR. PERRY: Nothing further, Judge.

THE COURT: Ms. Wong, do you have any redirect?

MS. WONG: Just a few quick questions.

REDIRECT EXAMINATION BY MS. WONG:

Q Why did you leave Butterfly Labs?

A I left Butterfly Labs because I did not believe in the

business -- in the way they conducted their business.

Q Do you have a vendetta against the company?

A No, I do not have a -- no, I do not have a vendetta against the company. If I did, I could have said something a long time ago when I originally left the company when I got doxed online on the Bitcoin dot forum. I've been very hands off from the company mainly because my uncle was employed there, and I always looked out for him.

Q So what do you mean when you had other opportunities to disparage the company?

A Like I said, when I was, you know -- and doxed just for the record is my documents -- information was released online. But I would say that was my opportunity to say something bad about the company. But at that time I said that I did not wish to speak about it. I handled my work there professionally. I was planning on, you know, continuing to be professional, and I did not want to, you know, comment on my time there.

Q And after you left, Jeff Ownby posted a recommendation for you?

A That's correct.

Q On LinkedIn?

A That is correct.

MS. WONG: Thank you.

THE COURT: Mr. Perry, do you have any recross?

MR. PERRY: Very quickly, Judge.

THE COURT: Thank you.

RECROSS-EXAMINATION BY MR. PERRY:

Q You asked for that recommendation from Jeff Ownby, didn't you?

A Originally actually I asked my uncle for a recommendation, and he told me he did not feel comfortable doing that and that should go through Jeff Ownby because he was my immediate supervisor.

Q But you requested the recommendation from Jeff Ownby, correct?

A I'm not sure how that -- whether it got passed on or if I asked him, but I believe that could be the case, yes.

MR. PERRY: Nothing further.

THE COURT: Sir, before you step down, could you spell your last name for the record?

THE WITNESS: I apologize. I get this a lot. It's Fast, F-a-s-t, like run fast.

THE COURT: Okay. Thank you, sir. You can stand down.

(Witness excused.)

THE COURT: FTC, call their next witness.

MR. ASHE: Thank you, Your Honor. Federal Trade Commission would call Dr. Narayanan.

THE COURT: Sir, if you want to come forward. Thank

you.

ARVIND NARAYANAN, being duly sworn by the courtroom deputy, testified:

THE COURT: We probably need a spelling of the name so it's clear for the record, Counsel.

MR. ASHE: I was going to ask that and ask him to spell it.

THE COURT: I jumped the gun.

THE WITNESS: My first name is --

THE COURT: Can I have counsel approach for a moment.

(A discussion was had off the record.)

DIRECT EXAMINATION BY MR. ASHE:

Q Dr. Narayanan, please state and then spell your name for the record.

A My first name is Arvind, spelled A-r-v-i-n-d, last name is Narayanan, spelled N-a-r-a-y-a-n-a-n.

Q Thank you.

I think you have with you what was previously submitted to the court as Docket No. 166-16. Is that a copy of the declaration that was submitted in this case, correct?

A Yes, it is.

Q All right. Did the FTC write this declaration for you?

A No, they did not. They provided me with a list of questions they wanted my opinion on, and they also provided me

with documents such as specifications for the machines and so on. And I wrote the opinion myself. The FTC helped me put it in paragraph format for the declaration.

Q The FTC never told you what opinions they wanted in your declaration?

A Not at all.

Q Okay. Attachment A to that document is your curriculum vitae; is that correct?

A Yes, that is correct.

Q Could you please describe your educational background for the court?

A Sure. I received both a Bachelor of Technology and Master of Technology degree, it was a dual degree, from the Indian Institute of Technology in Madras, which is widely recognized as the top engineering school in India, and it's also been nationally recognized. For example, about half of my class went on to graduate degrees in the United States.

I then went on to get my own Ph.D. from the University of Texas at Austin. And that is my educational background. All of these degrees are in the field of computer science.

Q Okay. Thank you.

What is your current position?

A I am an assistant professor of computer science at Princeton University.

Q Okay. Have you had other positions over the years?
A Sure. I was a postdoctoral researcher at Stanford for a period of three years. I've also had internships at technology research labs. I was part of Microsoft Research for a summer and SRI International, which is also a research lab, for another summer.
Q What did you do in your internship at Microsoft?
A At Microsoft I did research on a few questions including at the time to coming up with or designing the next generation of hash functions, and hash functions, as you will recall, are one of the technologies used in Bitcoin.
Q Okay. What is your internship at SRI International?
A At SRI International I was involved in analyzing malware such as viruses and worms and trying to figure out how it is they spread and what can be done about them.
Q What courses do you currently teach at Princeton?
A Currently I am teaching a course on Bitcoin and cryptocurrency technologies. I believe this is the first time a course on the computer science behind Bitcoin has been taught at a university.
Q Do you have any research grants?
A I do. I have a research grant from the National Science Foundation. It's called Addressing the Challenges of Cryptocurrencies: Securities, Anonymity and Stability, which I believe is also the first U.S. Government research funding

of Bitcoin cryptocurrency research.

Q So what are your fields and scholars that you've researched --

A I study information security and privacy. Information security comprises a number of things such as cryptography, using that to build secure systems, and Bitcoin is a significant component of that since it is based upon cryptographic principles. I also study information privacy which gets into a variety of questions like the relationship between companies and consumers with regard to their private data. That is one of the types of questions that I study under the umbrella of privacy.

Q Has your research been published in peer-reviewed journals?

A Absolutely, absolutely. My research has appeared in a number of top journals. I also want to point out that in computer science, the publication model has evolved a little bit. Our conferences have extremely thorough reviewing procedures and have printed proceedings attached to them. So most top computer scientists publish primarily in these proceedings of conferences as I do, and I have at least 20 to 30 publications in the top conferences and journals.

Q Thank you. Have you ever testified as an expert before?

A I have not. This is my first time.

Q Have you ever testified even not as an expert?

A I'm not sure what that means.
Q Have you ever testified in court before?
A As a witness but not as an expert witness, no, I have not.
Q Okay. Are you being compensated for your work in this case by the FTC?
A I am not being compensated.
Q And why not?
A Oh, it's for two reasons. One is that the sort of thing that this involves, which is spreading the knowledge of my research discipline beyond the halls of the university and having an impact on practice and so on, is really part of the thing that professors do, and the National Science Foundation in fact encourages these broader impacts as they call them. And the other reason is that not being a U.S. citizen, I am not permitted to receive compensation under the terms of my employment with Princeton.
Q Okay. So based on this summary that we've talked about, do you consider yourself to be an expert in Bitcoin and cryptocurrency technology?
A I certainly do.
Q Okay. Doctor, I'd like to talk to you a little bit about Bitcoin since that is the subject of this case. What is Bitcoin? And explain it to me like I was in sixth grade.
A Sure. Bitcoin is a digital currency or virtual currency

system, and the system was introduced to the world as a whitepaper in 2008, and then following that as open-source software. This was by someone calling themselves Satoshi Nakamoto, S-a-t-o-s-h-i N-a-k-a-m-o-t-o, and the true identity or identities of this -- somebody behind the pseudonym has never been revealed to the world.

Q Okay. So what is that -- so it's -- it's technology. When we say we're mining Bitcoins, I'm assuming this is not a metal slug with some imprint on it?

A Right. So the way that the system works at a technical level is how do you have a virtual currency system with no central authority as Bitcoin does, right. So the way that the system is set up technologically is that there are a number of Bitcoin nodes, as people call them, and these nodes constantly update what is known as a ledger of all the Bitcoin transactions that have ever been made.

If you were to go on your computer and if you were to download what is called a full Bitcoin node, then within a short period of time, within a few hours you would have on your own computer a record of all the Bitcoin transactions that have ever been made. And so where mining comes into this is mining is Bitcoin's way of solving the fundamental problem of such a system, which is how do you keep all these distributed set of nodes with no central authority consistent about the question of who paid whom how many Bitcoins. How do

you keep everybody consistent about the state of all transactions in the system?

So mining is a clever way to solve this problem. What happens is that not every node is allowed to update the ledger. Every node can see a copy of the ledger, but not every node is allowed to update it. That privilege is reserved for certain nodes called miners. Anybody can become a miner. However, there is a price of admission, and the price of admission is computational. It requires solving what are called proof-of-work mining puzzles. That's the term used in Bitcoin.

So the miners are in the process of constantly solving these proof-of-work puzzles for the privilege of updating the Bitcoin ledger that contains a record of all transactions. Why would they want to do this? So in order to incentivize them to do this, the system, the protocol is set up in such a way that miners are rewarded for their work using newly-minted Bitcoins, which have monetary value.

Q So in other -- so if you solve this algorithm, then the reward is a certain number of Bitcoins?

A The reward is a certain number of Bitcoins, that is correct. The protocol fixes the total amount of reward, again, not the reward to an individual miner, but the total reward doled out by the system to be 25 Bitcoins at the present time per block, and a block is roughly about ten

minutes.

Q So you said at the present time. Does the reward change over time?

A Indeed it does. And this change is also according to a prespecified formula. In the initial period of operation of the system, it was 50 Bitcoins. Now it is 25. That changed after roughly four years of operation. So roughly every four years the reward per block, that is, the reward per ten-minute period halves in value in terms of Bitcoins. So it was 50; it's 25 now. At some point it will halve again and so on, and it is expected that all new Bitcoins will be mined by some period which is approximately 2040.

Q So this is not an inexhaustible supply?

A That is correct. The total number of Bitcoins that will ever be mined according to this prespecified algorithm is 21 million exactly.

Q So to solve the -- is this a difficult algorithm to solve?

A Yeah, absolutely it is. And so the reason that this is difficult is that for the system to ensure that the total amount of Bitcoins that are rewarded per time period is constant, what it needs to do is it needs to divide up that constant-sized pie into a number of chunks in proportion to the computational power that each miner brings into the network.

And so as history has shown, the total amount of computational power of the network has grown dramatically over Bitcoin's existence, and this is because there are more miners overall in the system. It's because miners apply more hardware to the problem, but also perhaps most importantly because they have at least so far kept moving to more and more modern generations of hardware that are more and more finely tuned to the problem of solving these Bitcoin mining puzzles.

It started with regular CPUs on a regular computer. So as these puzzles got harder and harder to solve, that soon became not a very good way to mine Bitcoins. The second generation was GPUs, which is graphics processing units or graphics cards on your computer --

THE COURT: Doctor, if I could have you just slow down a little bit.

THE WITNESS: I understand. Absolutely, Your Honor.

THE COURT: Okay.

A The second generation of mining hardware consisted of these graphics cards that are typically used in computers for activities like playing video games, but people found clever ways to repurpose these for the purpose of Bitcoin mining. The third generation was what is called field programmable gate arrays. So that was the third generation.

We're currently in the fourth generation, which are application-specific integrated circuits or ASICs, and as

we've progressed to these generations, these machines are increasingly well adapted to the task of mining Bitcoins, increasingly faster at it. That's why you'll find the speeds of the ASIC machines that we're discussing to be measured in gigahashes per second and petahashes per second.

Q What is a hash?

A Sure. A hash is the fundamental component of those mining algorithms that these machines have to solve. It's a -- the particular hash function that's used in Bitcoin is a mathematical formula. It's a well-specified mathematical formula, and it takes a certain amount of computation for the machine to do it.

If a human were to do it, somebody did this experiment recently, it took them over a day to compute a single hash computation on pen and paper. But these machines are so fast that they can compute it over a billion times per second with different inputs or in the case of the most modern machines over a trillion times per second with different inputs. And that's what it takes to solve these mining puzzles and to compete on the Bitcoin network.

Q So to say the machine is 4.5 gigahashes, it's doing 4.5 billion computations --

A Correct. Iterations of the Bitcoin mining puzzle.

Q So the algorithm increases in difficulty over time?

A Exactly. Since more miners are coming into the network

constantly and are using more efficient hardware, in order to keep the mining reward constant at 25 Bitcoins per roughly ten-minute period, what needs to happen is that the difficulty of these mining puzzles needs to automatically increase so that when you solve a mining puzzle, you'll be able to receive that 25 Bitcoin reward.

And so I should point out as a consequence of this, as a consequence of the increasing efficiency of these machines, it's also been increasing specificity of the machines and decreasing generality of the machines. So as the name ASIC applies, application-specific integrated circuits, these ASIC machines are not able to perform any function other than mining Bitcoins or other cryptocurrencies that use the exact same algorithm.

Q So an ASIC chip, if I understand correctly, an ASIC chip that's designed to, you know -- designed for a Bitcoin mining machine, it can only be used for Bitcoin mining or mining another cryptocurrency that uses the exact same algorithm?

A That is correct.

Q So you couldn't use it for -- it's obviously a very fast chip. You couldn't use it in -- to run another program?

A That is correct. And that is true. Even though this hash function in question called SHA-256 -- so even though this underlying function is used in a variety of other applications, the way that the mining machines are required to

implement that function makes them extremely specific to that task and not useful, for example, in tasks like encryption and security and telecommunications, finance, and so on, which are other domains for all these activities of that underlying function.

Q Why couldn't it be used for that function?

A Sure. So these machines are so fast, billions or trillions of times per second, that in terms of the technology, they don't even have the capability to return the answers of those billions of computations back to the computer that's issuing this work to them. That's why the mining puzzle is called proof of work.

The only thing that the hardware is able to do is to send back a proof that it solves these mining puzzles by sending back the one-in-a-billion input to that function that happened to satisfy the requirement that winning inputs are supposed to satisfy. Whereas in every other conceivable application of these hash functions, these are not proof-of-work applications.

If you were using hash functions for security, for example, you wouldn't be trying to prove to somebody that you're -- you know, that you implemented an encryption. You would actually want to encrypt your data before sending it onto the network which means that you would actually want the answers to the function computation. And so the machines are

simply not even fast enough to send the responses, the outputs of the function computation back to the computer, and because of the specific design, they're only suitable for mining Bitcoins and other cryptocurrencies.

Q Okay. Thank you.

Doctor, have you reviewed the FTC's complaint in this matter?

A I have.

Q Do you have a general understanding of the claims at issue in this case?

A I do.

Q What is your understanding of the allegations in this case?

A So the FTC is trying to establish that the defendants made a variety of misrepresentations, and in particular one of these misrepresentations is about the shipping date of the BitForce machines, and my particular -- you know, the aspect of this that I am competent to speak to is what have been the monetary value of the BitForce mining machines in terms of Bitcoins had they shipped on the promised date versus what they would have been or what they were when they were shipped on the date that they actually were shipped.

Q Let's talk about that.

THE COURT: Counsel, is this a good -- we've been here probably an hour and a half.

MR. ASHE: Would you like to take a break, Your Honor?

THE COURT: Yes. I think more so for my court reporter.

MR. ASHE: I think this is a good point. We're moving now into specifics. I think we've gotten some of the generals. This is a good time.

THE COURT: Why don't we take about a 15-minute break and be back at 11 o'clock.

(A recess was taken.)

ARVIND NARAYANAN, previously being sworn, resumed the stand:

THE COURT: Counsel, you can continue with questioning.

MR. ASHE: Thank you, Your Honor.

DIRECT EXAMINATION (continued) BY MR. ASHE:

Q So, Doctor, earlier we talked about or you talked about how this Bitcoin algorithm gets more complex over time. So if a computational speed of a mining machine does not change but the complexity of the algorithm is increasing over time, what does that mean for the machine?

A Sure. So let me clarify that what changes is not so much the complexity of the algorithm but the number of times the algorithm needs to be iterated over and over again. And so through most of Bitcoin's history, the -- what is called the difficulty is the term used in Bitcoin, but it roughly

represents the number of times that this algorithm needs to be computed in order to solve the mining puzzle has increased, and the rate of increase is available in widely-available online databases that tabulate the increase in what is called the Bitcoin hash rate over time.

So we can look at this, and we can look at if you have a machine that has the same amount of computational power but the hash rate that the machine has to compete against is gradually increasing over time, then what is going to happen to your mining revenues, right.

So let me walk you through an example. If you acquire and started to operate a machine in January, then initially let's say that you're making a certain number of Bitcoins per day. Whatever that number is, you're competing against a network whose total difficulty has tended to increase historically at a certain percentage per month.

Q What is that percentage historically?

A Sure. I'm going to look at my data here. Throughout the year 2013, that difficulty for that one-year period grew about 500-fold, and this represents a doubling of difficulty every 41 days. 2013 was probably a little bit faster than usual, but for most of Bitcoin's history we have a similar phenomenon of a doubling of difficulty, you know, for every period of time you're looking at. It may not have been as little as 41 days through all of its history, but generally

speaking it has doubled at frequent intervals.

So going back to this example, you started operating the machine in January and you're competing against a network whose difficulty is gradually doubling. Just for the sake of this example, I'm going to assume that the difficulty increases steadily at a rate so that it doubles every two months. Of course, it's not a single number you can apply to all of Bitcoin's history. You have to look at the data, but this is just for the purposes of illustration.

That by March the same machine would be generating per day only 50 percent of the Bitcoins that it did every day in January, and two months later in May, it would only generate 25 percent, and two months after that, only 12 1/2 percent and so on. So the number of Bitcoins that you're making per day starts going down on this sort of terrifyingly fast curve, and pretty soon your machine is generating very few Bitcoins.

Q So would the machine become obsolete?

A At a certain point we consider the machine to be obsolete, and this obsolescence happens when the cost of operating the machine per day, for example, in terms of electricity cost exceeds the dollar value of the Bitcoins that you're going to mine per day using that same machine, and these electricity costs can be pretty substantial.

Q What do you mean "substantial"?

A Just to give some intuition for one of the mining rigs that I believe is under discussion, the electricity cost is roughly equivalent to that of a large air conditioning window unit that you might have in an apartment.

Q So like one of those machines over there is going to draw the power of an air conditioning unit?

A That is certainly possible. I don't know which specific machine this one is but a machine that size, yes.

Q So this formula curve of the technology -- of the difficulty, I think I use complexity --

A Sure.

Q The difficulty. Is this something that's widely accepted in the --

A This is generally well understood. One of my references for a lot of what I'm saying is a paper by Michael B. Taylor, and the paper is called Bitcoin and The Age of Bespoke Silicon, and a lot of what I'm saying comes straight from his paper both about how mining difficulty increases with time and how a machine reaches obsolescence when the electricity cost of operating it exceeds the daily mining revenues.

Q Is Mr. Taylor -- is his treatise considered one of the definitive statements in Bitcoin?

A Absolutely. I would say it is definitive. I think the community widely accepts the findings and the methods of calculation in his paper.

Q Okay. So what you -- so if I understand it, looking at historical data, you could, if I understand it right, it would be possible to calculate the upper limit of how many Bitcoins a machine should be able to generate before it becomes effectively obsolete?

A That is correct. In fact, when we look at historical data, since the difficulty of the network has gone up so fast and the mining revenue per day has decreased so fast, what happens is that you can essentially bound the lifetime mining revenue of a certain machine assuming that it was a machine that was introduced sufficiently long back in the network and is -- has reached obsolescence by now. You can't necessarily do that for machines currently on the market, but for sufficiently older generation machines, you can pretty much calculate an upper bound, upper limit on their lifetime mining revenues and Bitcoins.

Q What inputs would you need to know?

A What I would need to know for this is the speed of the machine that's measured in gigahashes per second as well as I would need to have historical data for what was the difficulty factor of the network on each day historically.

Q And I think you said earlier that the information on the difficulty rate is readily available?

A Widely available. And in particular I used these tables that are provided by the website blockchain.info which people

generally turn to for information about the Bitcoin network.
Q Have you done these calculations in this case?
A I have done these calculations.
Q So walk me through just sort of in -- okay. So you -- so you do the calculation. You take the input of the hardware. You have the historical.
A I have the historical data. So what I would be able to say is for each particular day in history what is the number of mining revenue in Bitcoins that a machine of that speed would be able to generate given what was the network's difficulty on that date. And so if you give me a particular date that the machine was started to operate on, then I would add up those revenues from that date onward to the present time.
Q And so it's just a sum -- is it summing up each of those days, and I guess that's what's referred to as LMR or the lifetime mining --
A That's what I refer to as the lifetime mining revenue.
Q Have you done LMR analysis of the defendants' BitForce ASIC machines?
A I have indeed.
Q Did you do the analysis specifically of the BitForce Jalapeno with an advertised speed of 4.5 gigahash and that was --
A Yes, I did that calculation.

Q So what would the lifetime mining revenue be for a Jalapeno machine, and that's Jalapeno as in the pepper, I guess?

A I assume so.

Q If it was delivered on -- in October of 2012, what would be the lifetime mining revenue for such a machine based on your calculations?

A I have calculated that to be 134.9 Bitcoins.

Q You're doing it in terms of Bitcoins, so regardless of what the exchange rate is, you would in theory be able to get 134.9 Bitcoins?

A That is the most that you would be able to get. Of course, if you had, for example, an electricity problem and you had to turn off your machine, then my calculation doesn't account for that. But this assumes certain things, that the machine was turned on on that date and continued to operate, and that's how I calculated this number.

Q So what if instead of being delivered in October 2012, a machine is delivered in September of 2013, what would the LMR be in that case?

A All right. It turns out that in those 11 months or so, the network had gotten so much faster that each particular machine's slice of the pie is so much smaller, so much smaller in fact that my calculated number is only .514 Bitcoins. That is about half a Bitcoin down from 135 roughly.

Q So that's like 200 times less?
A Yes. It's about a 260-fold depreciation.
Q I wrote that down. That's not mental math.
What if that Jalapeno machine was not delivered until November of 2013, what would the LMR be in that case?
A Sure. In those couple of months the network hash rate has further, in fact, more than doubled, and we find that the lifetime mining revenue is only .17 Bitcoin.
Q So if I understand correctly, if a consumer had ordered the machine in October 2012, received it 2012, I understand they would in theory be able to generate 134.9 Bitcoins. If they don't receive the machine until November of 2013, based on increase in difficulty, at most they could get point --
A 17. Only about a sixth of a Bitcoin, which is about 800 times less than the number for October 2012.
Q It's not zero, though?
A It's not zero. It is still some nonzero number, albeit very small.
Q So if the exchange rate, say, a Bitcoin were to skyrocket, that still would result in some profit?
A Uh-huh.
Q It could be a very small fraction times a very large number, it's still going to give you a large number?
A Sure. So, first of all, this number in terms of Bitcoins is so small, for that number to yield a meaningful

number of dollars, the exchange rate would have to go up a lot. But, secondly, if the argument is that these machines are valuable because the miner is using them to speculate on the price of Bitcoin, which might go up in the future, then the economically rational answer to that is that there is a far simpler way of speculating on the price of Bitcoin.

Q What is that?

A Which is go to any Bitcoin exchange and simply buy Bitcoins in exchange for dollars, and in fact you will have lots of money left over to buy many space heaters and not just one space heater, and put those two together, you have everything that the machine provides to you; a way to burn electricity and also a way to speculate on the price of Bitcoin. You don't need a machine in order to do that.

Q Okay. Thank you.

Now, I think you also testified earlier that one of the reasons why the puzzles get -- or the algorithm, the puzzle, gets more difficult to solve is that there are more miners on the network.

So hypothetically if, say, in this case the defendants had shipped, say, a large number of machines in October of 2012, that would have increased the total mining power on the network. Would that not have also lowered the --

A That is true. So if defendants had stuck to their promised delivery date and delivered a number of machines in

October of 2012, then the very act of shipping them and customers starting to operate them would have decreased the size of the pie available to each machine. But what is interesting about this is that the factor by which that pie decreases in size is far smaller than the factor by which the machine is depreciated due to shipping delays.

Q Did you do calculations on this?

A Certainly. I have calculations assuming that about 20,000 Jalapeno machines had been added to the network in October of 2012. I calculated that the LMR, the lifetime mining revenue, of each shipped Jalapeno machine in that case would be about 36.6 Bitcoins, and this is in comparison with -- to 134.9 Bitcoins which doesn't assume that additional machines have been added to the network. So shipping a lot of machines, it's true, would decrease the size of the pie by three or fourfold. However, the depreciation decreased the value of the machines by somewhere between 260-fold and 800-fold. So these are not even the same order of magnitude that we're talking about.

Q Okay. Thank you.

Did you do LMR calculations for the BitForce single SC that had an advertised speed of 40 gigahashes per second?

A I did as well.

Q Okay. So what -- based on your calculations, what would the -- I guess, because it's a more -- a faster machine, by

definition it's going to have a higher LMR?
A Yes. This is a much faster machine that costs more, and so the LMR in terms of the number of Bitcoins that it would be able to mine would be much higher.
Q So the LMR of such a machine that shipped in October 2012, would have been what?
A It would have been $1,199. Pardon me, Bitcoins. All of these calculations are in Bitcoins and not U.S. dollars.
Q And if a large volume of orders had been shipped in 2012, as we said, it would have -- the LMR would decrease. What would -- according to the calculations, what would it have decreased to?
A It would have decreased to 325 Bitcoins.
Q But if this single 40 gigahash machine was now shipped in November 2013 instead of October 2012, what would the LMR be?
A That would be a mere 1.5 Bitcoins.
Q Okay. Did you do calculations for the MiniRig SC that had an advertised speed of 1,000 gigahashes per second?
A Certainly --
THE COURT: Counsel, let me ask a question. On the one machine with the 40 gigahashes, is that assuming again -- are we assuming that 20,000 machines are added to the network?
THE WITNESS: I'm assuming that the same mining capacity is added to the network. That mining capacity

represents 20,000 Jalapeno machines. If we were calculating those in terms of the single SC machines, that would be a different number.

THE COURT: Okay.

MR. ASHE: Thank you for that. I apologize for not making that clear.

Q (BY MR. ASHE) So turning to this MiniRig SC that has a speed of 1,000 gigahashes per second, if it was shipped in October 2012, what would the lifetime mining revenue be for such a machine?

A That would be in Bitcoins 29,980.

Q And making the assumption that 20,000 of these 1,000 gigahash machines was -- were shipped in 2012, what would that do to the LMR?

A So to reemphasize, I made these calculations under the assumption that mining power equivalent to 20,000 Jalapeno machines have been added to the network. That would have been a different number in terms of the MiniRig machines but I did those calculations. And it came out to 8,000 Bitcoins if additional machines had been added to the network.

Q And so -- what were the calculations -- going back to just the single rig, if the 1,000 gigahash machine was not delivered until November 2013, what would the LMR be?

A That would be only 37.8 Bitcoins.

Q Okay. Now, these calculations that we've been talking

about involve consumer mining and isolation with just this one machine; is that correct?

A Yes. These would be average numbers if we're talking about a single consumer that's mining with their machine, and a single consumer faces a lot of probabilistic returns, that is, they face a significant line of risk. So this is averaged across that risk.

Q It's true that most -- is it true that most consumers, though, actually mine in pools?

A Yes, that is true, the vast majority.

Q What would be -- I apologize. What would be a mining pool then?

A Sure. A mining pool is a way for different individual consumers to hedge their risks because an individual mining on their own is a very risky proposition. They might only get one of these minor rewards, these bounties once in a while, and when they do get it, it's a significant amount of money. Twenty-five Bitcoins in today's terms is, I believe, over $9,000.

So in order to hedge those risks, most individual consumers join mining pools, and what mining pools do is they allow consumers to pool together all of their mining capacity. It's run by a pool operator. The pool operator pools together this capacity and also sends payouts back to these individual consumers in proportion to the mining power that they

contributed. So this takes risk out of the equation for consumers, and in exchange for the service, the pool operator takes a small percentage fee of somewhere between 1 and 5 percent.

Q Sort of like when you play in the lottery, the whole office pools together to buy a lot of lottery tickets instead of one. Is that a fair analogy?

A That's a good analogy. One difference I will point to is that even when a whole office pools together their tickets, they might still only have a smaller probability of any of them winning, even if it's a larger number. The great thing about Bitcoin mining pools is that as long as you're in a pool, you're guaranteed payout at a small rate, even if it be a small -- you know, it may not be a big number every day, but whatever that number is, it's a steady but small number every day.

Q So the fact that many or most consumers join a mining pool, does this affect the LMR calculations that we were discussing?

A Not at all. You would simply have to adjust for the very small percent of mining -- the pool operator's fee which comes into the equation, but other than that, these figures are not affected.

Q So if I bought -- so if a consumer had purchased a Jalapeno 4.5 gigahash machine, put it on a pool, the LMR

calculations that we discussed earlier would still be an accurate assessment of the lifetime mining revenue that consumer would experience in the pool?

A That is correct.

Q Okay. Thank you.

So I'm going to change from the BitForce machines to a different machine that was advertised by the defense called the Monarch. There was a -- in August of 2013, they began taking orders for Monarch machines, advertised speed of 700 gigahashes per second. Can you calculate the LMR for one of these Monarch machines?

A For the Monarch machines, what I can certainly do is assuming that they have been -- begun to operate on a certain date, what would be the mining revenue from that date until the present day. This calculation is slightly different than for the BitForce machines because the BitForce machines are by now so old that any future mining revenues they may generate in terms of Bitcoins is so small, that it doesn't even affect to the last place of the calculation finding.

So that's not quite true for the Monarch machines. So the calculations represent the mining revenue that someone would have made starting from, let's say, an advertised date to the present date.

Q Can you -- and that's because we have the historical data --

A Correct.
Q Can you project beyond the present date?
A I can project beyond the present date, but since I do not know how the hash rate will evolve in the future for sure, I can only make informed decisions based upon the history of the network, and based on that, I can give conservative estimates and optimistic estimates.
Q Okay. So let's run these -- did you run calculations of the LMR for the Monarch 700 gigahash machine?
A Right. I ran the calculation, and, again, I wouldn't call it an LMR because it hasn't reached the end of its life yet. Certainly I ran calculations assuming it had been switched on on a certain date to the present date, and I also ran projections for present date into the future.
Q We'll divide those up, and I apologize if I'm using LMR as a -- I'll try and use a different phrase since I don't want to misstate it.

So if a Monarch machine was shipped at the end of 2013, and began operating beginning of 2014, theoretically how many Bitcoins would it be able to mine through the current time, through the present day based on historical data?
A Sure. For the 700 gigahashes per second machine, that would be 15.6 Bitcoins.
Q And then assuming -- before I change the date, so what if a large number of Monarchs had been shipped at the same

time, say, in January of 2014, is that going to lower the mining revenue like it did with BitForce machines?

A So, interestingly, by January 2014, as opposed to the BitForce machines, the network had become so large and ASIC technology was already so prevalent in the market that for any reasonable number, any plausible, imaginable number of Monarch machines that may have been shipped out that date, they don't end up affecting these calculations at all because the overall hash rate was so large that adding machines to the network would not change the size of each machine's pie.

Q So if I'm clear, then regardless of the hypothetical number of machines that may have been shipped and if they had been shipped in January or the end of 2013, 15.6 Bitcoins is still what one could have theoretically expected to mine up until today?

A That is correct.

Q And what about putting them into mining pools, the same analysis with BitForce supply?

A That is correct.

Q Okay. So what if these Monarch machines were not shipped until August 2014 instead of the end of 2013, what would the --

A Sure. I did the calculation for a machine first time created end of August 2014, and the mining revenue until the present day is only .787 Bitcoins which is less than one

Bitcoin, and this is roughly one-twentieth of the figure for the beginning of January 2014.

Q Okay. So you said going forward, though, past today's date, you would need to make certain assumptions as to the increase in difficulty?

A That is correct. So one might assume that the difficulty of the network magically stays frozen at the current level. That would be in my opinion a very conservative estimate.

Q So I just want to be clear, to move beyond the present day --

A Sure.

Q -- you would have to make assumptions as to the increase in difficulty under any -- in order to understand more of a profitability, but you -- the exchange rate, would there need to be an assumption on the exchange rate?

A Sure. One would have to talk about exchange rate as well. However, the reason that I treat exchange rates differently from the increase in the hash rate is that for a consumer who is speculating purely on the basis of the fact that the exchange rate might increase in the future compared to its current values, there are much better ways of achieving that exact same effective speculation, which is by purchasing Bitcoins instead of purchasing mining machines. That is why I specifically leave the exchange rate out of my calculations.

Q Okay. So when we were talking about historical -- so if a consumer received -- we talked about with the lifetime -- not the lifetime.

We talked about what the expected mining revenue starting in August -- from a consumer-received machine in August of 2013 to the current was.

If a consumer received his or her Monarch machine in August of 2014, in your opinion would he or she be able to recoup their investment given that such a machine I believe was advertised for about just under $2,500?

A So this will depend on the nature of assumptions that we make about the future evolution of the hash rate of the network. Under the assumption that the hash rate remains completely constant at the current level, then that machine would break even in slightly over three years.

Q Do you think that's a reasonable assumption that the hash -- the difficulty will remain constant?

A I don't think that's the most reasonable assumption. I think there are at least two assumptions that are more reasonable than this. One is that we can assume that the mining difficulty will continue to compound at the rate that it has over the past year, or we can assume that the mining rate instead of compounding, just like simple interest versus compound interest, will only increase linearly at the rate that it has. In my calculations I used the past six months to

be most generous in those estimates.

Q So if the mining difficulty increased linearly, would the consumer be able to get back the investment?

A They would not because under that assumption, the machine would reach obsolescence in a little over two years, and in this period it would generate the equivalent of -- in dollar terms about $1,265 in mining revenue, and it would also incur a lot of electricity costs, a little over $1,000. And this is under the assumption of electricity costs being 10 cents per kilowatt hour and looking at the published specification for the electricity consumption of this machine.

Q Now, what if we assume mining difficulty continues to compound, as you said historically --

A Then we get an even more negative projection. We find the machine will reach obsolescence in less than four months from the present time, and during this period it will generate about $240 in mining revenue and generate $132 in electricity costs.

Q But you said earlier that the -- assuming the mining difficulty remains constant, I think you said is -- is not a reasonable assumption. But isn't it true that over the past short term, maybe the past 40 or so days, the network has only been growing about 15 percent? Wouldn't that make that --

A Sure. Most recently in the last one or two months the network hasn't been growing as fast as it did in 2013. Even

under this assumption, the machine would actually reach obsolescence pretty quickly, in about a year. There have been periods of time historically when the hash rates did not grow much at all for a period of several months I would say at least. These have been historically periods of anomaly. It is true that such a thing might happen. I can't rule it out. I can't see into the future.

But the most well-informed projections of hash rate and introduction of mining machines into the network would suggest that new miners keep coming into the market. People haven't decided to stop mining for some unknown reason, and, therefore, the mining difficulty is going to continue to increase.

Q Okay. Thank you.

Now, I guess the other assumption that you make in terms of whether a consumer would break even would be the exchange rate, but it's possible that the exchange rate on Bitcoin could, say, go to a million dollars, and wouldn't that change the return-on-investment calculation?

A Sure. It's, of course, theoretically possible, but the question is whether it is plausible or not. And I personally believe, it's my opinion, that exchange rates, calculations that show it going to a million dollars are wildly implausible. And the second thing I will say is that I will reiterate what I said earlier, if the sole reason that these

machines might have value is that the Bitcoin exchange rate might take off in the future, then there are much easier ways for consumers to speculate on the future price of Bitcoin, which is by simply acquiring Bitcoins on the market. They do not need defendants' machines in order to do that.

Q Getting back to the first reason, why do you think such a high jump in exchange rate is in the short term so unlikely?

A Let me take a minute to answer that.

Q Okay.

A Calculations specifically that claim a future exchange rate of something like a million dollars typically tend to assume a future in which Bitcoin will take over for the U.S. dollar or other established currencies as our medium of exchange or a store of value and so on, and this is a scenario that I consider to be wildly implausible.

Q Thank you.

You were made aware that the defendants had a revenue calculator called a TP Bitcoin calculator on their website; is that correct?

A I believe that they posted it on their Facebook page, yes.

Q What does this TP Bitcoin calculator do? What is it supposed to do?

A It allows the consumer --

MR. HUMPHREY: Your Honor -- sorry to interrupt,

Doctor. I would like to object at this time. This is outside the scope of the declaration. We've had no advance notice of this testimony whatsoever, and for that reason, I move to strike the question and the answer and any further testimony on the subject of a calculator.

THE COURT: Counsel.

MR. ASHE: Your Honor, on page 7, paragraph 29 starting with paragraph 29 of the expert's declaration, which was document 66-16, it's a discussion of the Bitcoin mining calculator. There are one, two, three paragraphs on this. I really just have one or two questions on this, Your Honor, but it was in the declaration that was filed last week.

MR. HUMPHREY: Your Honor, I see a reference to the mining calculator in the declaration. If it's just a few questions and he wants to make a further record on this and I'll let the questioning proceed.

THE COURT: Objection overruled at this time. You can ask the question.

MR. ASHE: Thank you, Your Honor.

Q (BY MR. ASHE) What does the TP Bitcoin calculator do?

A In my understanding it allows the consumer to put in a number of variables about the parameters, the specifications of the machine as well as about the exchange rate, and so on, and then it produces a short report to the consumer about the revenue that can be generated using this machine, break-even

time, profitability, and so forth.

Q Your understanding of the Bitcoin calculator, what assumptions does the calculator make about the growth of mining difficulty?

A From my understanding, the calculator assumes both the mining difficulty and the exchange rates to be constant.

Q Do you believe these assumptions are reasonable?

A The assumption about its mining difficulty in particular has not at all been borne out by the historical data about the growth of the Bitcoin network. For most of its lifetime the difficulty has not just grown linearly but in fact compounded and doubled over a certain period. That period may be different based on which year we're talking about, but it has seen regular doubling.

Q Okay. Thank you.

MR. ASHE: That's all I have to say about the calculator, all the questions on that.

Q (BY MR. ASHE) Doctor, I'd like to talk a little bit about testing procedures, if I may.

Now, your research does not involve manufacturing of Bitcoin mining machines, does it?

A No. My research does not involve hardware at all. However, like any computer scientist, I have a general understanding of the principles of hardware and software, and that's what I would like to state my opinions about.

Q Okay. So the fact that you may not literally build the machines, does that mean that you can't give opinions or discuss testing procedures?

A I don't believe so. In fact, most of the things that I said in my declaration have more to do with software than hardware.

Q Okay. In your opinion would a Bitcoin mining machine need to be tested on a live network?

A I do not believe that's the case, and that is for two reasons. The first is that anybody who is competent at developing these products should be able to simulate the conditions of the live network by developing their own software that appropriately feeds inputs into the hardware. That is my first one.

And the second one is that even if it were somehow necessary to derive inputs to the hardware to be tested directly from the live Bitcoin network, it should be possible to modify the software controller of the hardware device in such a way that once the hardware solves the Bitcoin mining puzzle, that mining puzzle is now broadcasted back to the network, and this ensures that the testing procedure of the Bitcoin hardware does not affect the live Bitcoin network.

Q Now, you said, turning to the second one, it should be possible. Are you aware -- are there, you know --

A I'm aware of software out there. One is called

BFGMiner, and BFGMiner has an option that the user can provide called benchmark mode, and what benchmark mode does, among other things, is to prevent mining puzzles from being broadcast onto the network.

This is the only claim that I make about BFGMiner, which is that it already has a provision to prevent the mining of the -- the solved work of the hardware from being broadcast to the network. This is a claim that I verified myself by analyzing the source code of BFGMiner and looking at its implementation of benchmark mode. I am specifically not claiming that the benchmark mode of BFGMiner is a sufficient mechanism to test defendants' hardware, and my claim is purely related to the ability to prevent the hardware from broadcasting its solved work back onto the network.

Of course, the full range of testing procedures for the hardware needs to be developed by the software controller that feeds input to it, and this is the job of any competent tester, and one should not look to existing off-the-shelf software for taking care of it in its entirety.

Q So the rest of your tests -- I understand. Your reference to BFGMiner is not that defendant should have used it but that it can be -- such software can be created?

A That is correct. That it is straight forward to prevent mining puzzles or solutions to the proof of work from being broadcast onto the network.

Q Getting back to the first reason about testing, I think you said that it should be possible to code or direct software to simulate the live network, but wouldn't the -- it be -- I mean, there are a lot of things that could happen on the live network. Wouldn't that be the best way to make sure the machine can operate under all possible, you know, operating conditions?

A Simulating all possible operating conditions or at least as many of them as possible is definitely the job of a competent tester who is creating the software for doing this. I'm not saying that it is trivial, but I believe it is not a -- too onerous a task either, and this is based on my understanding of the complexity of the Bitcoin network protocol and what it would take to simulate those inputs to the hardware.

It's not clear if all possible operating conditions can ever be tested. Even if the machines were operated on the live network for a period of a few hours or a few days, there could be conditions that appear on network only once in a blue moon, and so you would have to just hope that the testing conditions that you provided to the machine cover all of the relevant cases that will ever occur on the network.

Q So if I understand that last point, if an argument were to be made that only the testing on the live network would be possible to make sure the machine can operate under all

possible, you know, live network conditions, you would have to test as to definitely because there might be abnormalities that happened once every however many years?

A I can say that there are abnormalities that happen on the network only once in a blue moon, yes.

Q So that software then would -- well, it would be standard operating and then I guess common abnormalities -- I guess there are probably more common abnormalities. I don't know if that's the right word. Sort of common abnormalities of what happens on the live network that could be coded?

A I'll just leave my statements there if that's okay. I will merely assert that there are abnormalities that only happen very rarely.

Q Okay. And I --

MR. ASHE: With that, I'll let Mr. Humphrey if he has any questions.

THE COURT: Mr. Humphrey, are you ready for cross?

MR. HUMPHREY: I'm ready, Your Honor.

THE COURT: Okay. Cross-examination.

CROSS-EXAMINATION BY MR. HUMPHREY:

Q Still good morning. Good morning, Dr. Narayanan. Do I have that right?

A Yes, you do.

Q Okay. I have just a few questions for you.

On your direct I heard you say that you left the

exchange rate out of your calculations. The reason you did that is because consumers could just purchase Bitcoins as opposed to purchasing mining machines like those over there that are manufactured by Butterfly Labs, correct?

A Correct. Also let me clarify that for the BitForce machines, I left the exchange rate out because I was purely reporting the number of Bitcoins that could be mined using those machines, and that number is obviously not affected by the exchange rate. For the analysis of the Monarch machines, and in particular extrapolation of future revenues, that's when the exchange rate even factors into that calculation. And I specifically left it out because if the only reason that the Monarch machines have value is going to be that the future exchange rate can appreciate, then, yes, as you say, there are much simpler ways to -- or as I did say earlier, there are much simpler ways to speculate on the exchange rate.

Q Well, there are simpler ways to speculate on the exchange rate, Doctor, but in fact the evidence is that consumers purchase Bitcoin mining machines to mine Bitcoins, correct?

A Consumers purchase Bitcoin mining machines to mine Bitcoins, yes, I --

Q That's a simple statement. And they could purchase Bitcoin on the market instead of mining the Bitcoin, correct, as you've suggested?

A Let me clarify.
Q I just want you to answer my question. They could do that, correct?
A It depends on what you mean by "instead of." I can't answer a yes or no without fully understanding your question.
Q Okay. Well, I'm -- what I'm doing is going off of what you testified to earlier. You testified earlier that they can either purchase Bitcoins or they can purchase mining machines. So I'm just asking you they can do one or both or one or the other, correct?
A Correct.
Q Okay. And in this case we know for a fact that consumers purchase Bitcoin mining machines, correct, or do you know that?
A That is correct.
Q Okay. Have you polled any customers of BF Labs in connection --
A I have not.
Q Sorry. Didn't mean to speak over you. Have you asked any customers of BF Labs who purchased mining machines whether they've profited?
MR. ASHE: I object. It goes beyond what the doctor has testified about in his declaration or on the stand.
THE COURT: Okay. Overruled. I'm going to give him a little leeway. Make your objection if it doesn't -- I'll

give a little leeway.

MR. HUMPHREY: Thank you, Your Honor.

Q (BY MR. HUMPHREY) You cutely referred to the mining machines over there to your right as room heaters during your direct testimony. Those are room heaters that consumers want to purchase, correct? Is that your testimony, that consumers want to purchase room heaters?

A Let me clarify.

Q Well, let me ask you. You called them room heaters, correct?

A No. What I did say is that they could instead purchase space heaters and go onto the Bitcoin market to purchase Bitcoins for dollars and would have exactly the same effect.

Q Okay. I had it wrong. They could purchase these as space heaters and then go buy Bitcoins. That's what you're saying, correct?

A I did not refer to these machines as space heaters.

Q They could use a Bitcoin mining machine as a space heater, is that what you said?

MR. ASHE: Your Honor, I object.

THE COURT: Is that asked and answered? Sustained.

MR. HUMPHREY: I'll move on, Your Honor.

THE COURT: Okay. Thank you.

MR. HUMPHREY: Your Honor, at this point in light of Dr. Narayanan's testimony that he left the exchange rate out

of his calculations in his declaration and his testimony today, I would move to strike his testimony, exclude him from further testimony because that is an entirely academic exercise. It has no connection to the actual facts of the case. It takes into account nothing with the consumer and the actual facts of why consumers purchase Bitcoin mining equipment. It is in theory only. It's an academic exercise and it has no relevance, and it doesn't assist the court in his role as fact finder and the finder of the law today. I move to strike it for those reasons.

THE COURT: Thank you.

Mr. Ashe, do you want to respond?

MR. ASHE: Your Honor, we argue a twofold response to the defendants.

First, on a broader front, as we put forward in our opposition brief, which I know Your Honor has not had an opportunity to read, in preliminary injunction hearings it's well established and we did cite case law that the laws of evidence are relaxed because of the sort of -- the nature of a preliminary injunction hearing. It's all quick. It's not done with the benefit of full discovery on either side, and as such, there are a number of courts that have said sort of the more formal Daubert type analysis is not done at this phase.

Getting to the specifics of whether or not the exchange rate was used, with respect to the BitForce mining

machines that we've alleged were delayed, the exchange rate is already known. The fact that his analysis is only in terms of Bitcoin is entirely relevant because it shows the depreciation of the machine from when it was promised to be delivered in October 2012 and when they were actually delivered in 2013.

The price of the exchange rates were known and so you know what -- so the profitability is in terms of the number of Bitcoin that can be mined, and, you know, a lot of our allegations are in terms -- the profitability is not just in dollars but in Bitcoin.

With respect to the Monarch, again, part of the profitability is in terms of Bitcoin being mined up to the future, but he did use and did factor in certainly in the declaration in the forward going on the Monarch, there were assumptions made on the Monarch exchange rate in order to determine whether or not the consumer would break even.

So for those reasons we believe the testimony certainly is relevant. It's been forwarded to the court and should not be struck.

THE WITNESS: May I offer a clarification?

THE COURT: Not at this time.

THE WITNESS: Thank you.

THE COURT: What the court is going to do, I'll take the oral motion to strike the testimony of this doctor under advisement. The court will allow this witness to continue to

testify with respect -- and the court will in essence make a ruling and will set forth whether the court considered this or not.

MR. HUMPHREY: Thank you.

MR. ASHE: Thank you, Your Honor.

THE COURT: You can continue, Mr. Humphrey.

MR. HUMPHREY: Thank you, Your Honor.

Q (BY MR. HUMPHREY) Dr. Narayanan, in addition to the exchange rate, your declaration and your views expressed today do not take into account if a consumer purchases a mining machine and then opts to sell that mining machine for a profit. You haven't looked at that issue, have you?

A No, I have not.

Q Now, you testified earlier you've never -- this is your first time, correct?

A Correct.

Q Okay. And I haven't had a chance to take your deposition, right?

A No.

Q And you haven't prepared an expert report in this case, correct?

A Only my declaration.

Q Right. You understand there is an expert report requirement under the Federal Rules of Civil Procedure separate from your declaration? Were you made aware of that?

MR. ASHE: Your Honor, we will, as we said earlier, we will be providing when discovery opens a formal expert report.

MR. HUMPHREY: Let me ask it this way, Your Honor.

Q (BY MR. HUMPHREY) To date, as I'm cross-examining you now, you have not prepared an expert report?

A That is correct.

Q And the declaration that you prepared, you prepared that for this litigation, correct?

A Correct.

Q And let me ask you has that declaration been submitted to peer review? Have you submitted that to any of your colleagues?

A No, I have not.

Q And let's talk about what you were tasked to do or what -- maybe better yet what you haven't done.

You're testifying about depreciation of the Bitcoin mining machines. You're not a financing expert, correct?

A Correct.

Q You're not a markets expert, correct?

A I have published on the economics of Bitcoin markets and the workshop on the economics of information security.

Q Okay, fair enough. You've published that article. Would you consider yourself a markets expert?

A Not markets in general, no.

Q You consider yourself a Bitcoin market expert?
A It depends on how you interpret that question.
Q I just interpret it as are you an expert in Bitcoin markets?
A I would say a qualified yes.
Q Okay. Very good.
And in terms of offering opinions as a market expert on the Bitcoin market, would you take into account the exchange rate?
A Oh, right. So this was the clarification that I was hoping to provide earlier.
So with respect to the Monarch machines, for example, I'm not saying that I failed to take into account the exchange rate and offer any excuses for it. Instead I'm saying that it would be inaccurate to try to factor in what the future exchange rate might do in terms of calculating the profitability of the Monarch machines.
Q It would be inaccurate to factor it in?
A Yes, that's correct.
Q In fact, you don't know -- you don't profess to know what the exchange rate will be in the future, do you?
A Not at all.
Q We'll talk a little bit more about that, but this research, you mentioned you've conducted in the Bitcoin space, you've conducted university research, correct?

A Correct.
Q And that has not been made available outside of the university research space until your involvement in this litigation; is that correct?
A Pardon me, are you asking about my published papers?
Q Well, I'm asking about your published papers. Your body of work has been in the university setting, correct?
A Yes. But it's been available to the public.
Q No. I'm not quarreling with you on that. I understand it's available to the public, but your research -- I'm not trying to trick you, Doctor.

What I'm getting at is that what you've done so far has not been submitted to a court of law until this case; is that fair?
A It has not been submitted to a court of law, that's correct.
Q Okay. Fair enough.

Now, your declaration -- well, let's do this. Let me show you a couple of exhibits first before we get to that.

MR. HUMPHREY: I'm going to ask, Your Honor, if I may approach the witness.

THE COURT: You may.
Q (BY MR. HUMPHREY) Dr. Narayanan, do you see that exhibit I placed before you?
A I do.

Q It's marked as Defendant's Exhibit 514, correct?
A Correct.
Q And that's -- well, why don't you just tell me, that's a Twitter --
A Correct.
Q And Arvind Narayanan, that's you, correct?
A Correct.
Q The handle there, @random_walker, is that your Twitter?
A That's correct.
Q Let me ask you, here you talk about -- we've talked about -- your direct testimony you mentioned the Bitcoin hash rate and how that impacts your declaration, and the growth of it is linear or exponential, correct?
A Correct.
Q And here in this Twitter chain you say the Bitcoin hash rate has grown linearly not exponentially for the past six months. Do I have that right?
A Correct.
Q Now, down below here, Doctor, I see another Twitter feed from you, do I have it right, that we have no good models for what to expect?
A Correct.
Q And that's your statement?
A Correct. May I clarify?
Q Well, let me -- just give me one minute here.

MR. HUMPHREY: Your Honor, again, I'd like to renew my motion that the testimony be stricken for the reasons that Dr. Narayanan in connection with hash rate has indicated that there are no good models for what to expect going forward, and for that reason it is unreliable and provides no assistance to the court.

THE COURT: Okay. Thank you. That will be noted for the record. The court again will take that matter under advisement.

MR. HUMPHREY: Thank you, Your Honor.

Q (BY MR. HUMPHREY) In connection with the exchange rate, I'd like to give you another exhibit. Let me approach.

Doctor, do you see this exhibit?

A I do.

Q It's marked Exhibit 515.

A Yes.

Q Okay. You'll see it's an article, U. researchers develop Bitcoin prediction market, correct?

A Yes.

Q This is January of 2014, right?

A Correct.

Q You remember being interviewed in connection with this article I put before you?

A Let me try to recall.

Q Okay. Well, actually why don't we in the interest of

time, I'll have you flip to the fourth page of the article.
A Is this the one that has a discussion?
Q Well, you'll see here if I refer you to the second paragraph, Narayanan suggests using the current Bitcoin exchange rate as a proxy. Do you see that?
A Correct.
Q Okay. All right. Now, in this article you were expressing a view on the Bitcoin exchange rate, correct?
A Not about the future behavior of the Bitcoin exchange rate.
Q No, no. I mean, you're addressing the Bitcoin exchange rate here, correct?
A Correct.
Q And we've addressed how it's not a factor in your declaration and your analysis here on depreciation using the hash rate, correct?
Let me just simplify it for you.
A Sure.
Q We've discussed the role of the exchange rate, correct?
A Yes, for the specific purpose of calculating the profitability or the value of a mining machine. I did not at any time say that the exchange rate is completely irrelevant for all purposes.
Q Okay. But it is irrelevant for purposes of your hash rate analysis?

A It is irrelevant for the purpose of the future profitability analysis of the Bitcoin mining machine.
Q And that's what when you say, Doctor, that people, consumers could just buy Bitcoin as opposed to buying mining machines, correct?
A If they wished to speculate on the exchange rate, correct.
Q And when we talk about speculating on the exchange rate, in this article here you are quoted as -- it's attributed to you, were Bitcoin to become a mainstream currency, its value would likely increase 10- or 20-fold he explained. Do you see that?
A Correct.
Q Okay. And do you recall, Doctor, what the exchange rate was around this time?
A I don't have it in my head right now.
Q Okay. Well, at least at a minimum up above the top page of that article you'll see there's a peak at $1,200 per Bitcoin. Do you see that?
A Correct.
Q So under your -- the position that you've listed here that its value could increase 10- or 20-fold, if that happened, and I'm not saying that it will, we don't know that, but if it happened, then a 20-fold increase, just rough math, a Bitcoin could be worth $20,000?

A So this is --

Q Let me just -- I'll give you a chance to explain in a minute. I just want to understand if you tell me if a Bitcoin using these, what you've said here, a 10- or 20-fold increase, and if you assume that the Bitcoin is at 12 -- you know, I'm actually not being accurate because it's 1,200. Let's assume 1,000. Okay, $1,000 a Bitcoin. It's just simple math, Doctor. I'm just trying to establish that if it's $1,000 and it experiences a 20-fold increase, a Bitcoin would be worth 20,000 -- it would be $20,000, correct, exchange rate?

A Correct.

Q That's the math I wanted to just establish. Okay.

That's volatility that nobody knows about in the future, correct?

A Correct.

Q Now, you said that -- I heard you comment on an article about a Bitcoin being worth a million dollars in the future, right?

A Uh-huh.

Q Someone has made that prediction, correct?

A Someone has made that prediction.

Q And I've heard what you said about it, but in fact here you've mentioned the possibility of if it's a mainstream currency, it could increase 10- to 20-fold because that's what you said here, correct?

A That is almost the opposite of what I'm trying to say here.

Q Oh, it is?

A What I'm trying to say here is that given that if this highly-implausible situation happens that Bitcoin becomes a mainstream currency, that its value would increase a lot, means that the market currently believes that the probability of Bitcoin becoming a mainstream currency is very, very low. That's exactly what this paragraph says.

Q And that's a different answer than the question I'm asking. I haven't tried to pin you down on whether it will or will not become a mainstream currency.

What I'm getting at, Doctor, is if it increases 10- to 20-fold, then the price of a Bitcoin based on market data we know as a historic peak, it could reach $20,000 per Bitcoin?

A If, yes, uh-huh.

Q Okay. Again, in terms of the -- did you ever ask the FTC if you could interview any of the customers of BF Labs?

A I did not.

Q Okay. Did you ask to see any data on customer purchase history?

A I asked for data on volume of orders, but I was told that that was not available.

Q Okay. I heard you mention at one point in your

testimony that the calculation performed -- well, the chip and how this works if I heard you correctly -- correct me if I'm wrong, but I heard you say that this application is only for mining Bitcoins; is that correct?

A Mining Bitcoins and other cryptocurrencies that use the same mining function.

Q All right. Have you ever considered whether there are alternative uses for this technology?

A I have, yes.

Q Okay. And are you -- is it your testimony that there are not alternative uses?

A It is my testimony that that would be technologically infeasible, and I have in fact in other contexts discussed this with other Bitcoin experts of why a mining machine could be repurposed -- an ASIC mining machine in particular can be repurposed for uses other than cryptocurrency mining.

Q Okay. Very good. Have you discussed with any banking or financial institutions their use of the technology?

A I have not.

Q Could you, Doctor, see that the proof-of-work concept could be applicable in the financial services industry?

A I'm having a very hard time doing that.

Q Is that right?

If you were to talk to a financial institution that was actually using it in their practice, would that surprise

you?
A For cryptocurrency mining or for other purposes? If they were using it for normal banking purposes, that would be very surprising. I would say that that is, as far as I know, not technologically possible.
Q Okay. And you did as a part of your work here, you didn't ask to discuss any issues with the defendants or their use of the technology outside the realm of Bitcoin mining, correct?
A I did not specifically ask for that.
Q Okay. Now, your testimony today, and I don't want to simplify it to a degree where it's not accurate, but your testimony today is, let's see if we can agree on this, your testimony today is that these mining machines when they're delayed in their delivery, that impacts a consumer; is that fair?
A That is fair, yes.
Q That's the idea behind your testimony, correct?
A Yes.
Q The delays impact depreciation, impacts the consumer, correct?
A Correct.
Q And, again, that impact does not account for the price volatility in the Bitcoin market, what could happen to Bitcoin prices, correct?

A So --
Q Let's focus on the hash rate, fair?
A Fair.
Q Okay. Now, in looking at the hash rate, let me ask you this: Do you know if you add people in the hash rate -- add people to the network, the hash rate goes up, do you know what that does to the price of Bitcoin?
A That depends on human factors, and it's not possible to predict mathematically.
Q Okay. Let me ask you this: You have predicted the depreciation and that depreciation being the harm to consumers in this case.

So when a customer wants the equipment and there's a delay, that results in the harm you've discussed, correct?
A I'm not making any statements about harm. That seems to be a legal concept, and I'm not qualified to talk about that. I'm merely talking about depreciation numbers.
Q Fair enough. But in terms of what you are talking about, you're talking about depreciation having a negative impact on consumers, correct?
A I'm not saying anything about impact on consumers at all. I'm merely calculating the mining revenues that consumers would be able to realize using the mining equipment based on when they're able to start operating it.
Q Well, I heard you say that consumers are purchasing

space heaters in your direct testimony.
A I did not refer to these machines as space heaters. I said that if the point of the mining machine is that it can mine Bitcoins that might appreciate in value in the future, they might achieve that same impact by purchasing, A, a space heater; and, B, purchasing Bitcoins on a Bitcoin exchange that would allow them to do both of those things.
Q Okay. Let's set that aside for a moment.
Here's what I want to talk to you about. In terms of what you said in your declaration, you've looked at the hash rate and you've made calculations that the machines depreciate to the point of obsolescence through delays, correct?
A Correct.
Q Are you aware, Doctor, that the FTC filed this lawsuit September 19th, 2014?
A I am aware.
Q Okay. And you understand that -- have you reviewed enough of the evidence to understand that Butterfly Labs was delivering machines as of that date?
A Yes.
Q Okay. And have you read enough of the evidence to understand that Butterfly Labs through the filing of the lawsuit is not allowed to deliver machines --
A Yes.

Q -- to consumers?
A (Witness nodded head.)
Q Do you understand that we're now here on November 24th, so little over two months later, where customers have not had the ability to get their equipment, correct?
A Correct.
Q And they've been delayed in receiving their equipment, correct?
A Correct.
Q And your depreciation and obsolescence that you described in your direct testimony, that's impacting those consumers who are waiting on equipment, correct?
A Correct.
MR. HUMPHREY: No further questions.
MR. GRIFFIN: Your Honor, I have a very few questions if that's all right with the court.
THE COURT: Sure.
CROSS-EXAMINATION BY MR. GRIFFIN:
Q Are you a miner?
A I'm not a miner.
Q Why not?
A That seems a strange question. There are many things that I am not.
Q Okay.
A I'm not a chef either.

Q You made it pretty clear that the difficulty of mining has increased over time, correct?
A Correct.
Q Therefore, the capacity of new models of mining equipment must increase by large amounts to stay ahead of the curve. Do you agree with that?
A Correct.
MR. GRIFFIN: That's all.
THE COURT: Okay. Mr. Ashe, do you have redirect?
MR. ASHE: Very small number of questions, Your Honor, or at least I hope small number.
THE COURT: All right. Just if you all didn't know, typically the court gives you two bites at the apple.
MR. ASHE: I understand that.
THE COURT: I'm just saying that so it can set the tone so if you call for a third, I cut it off after that.
MR. ASHE: I understand.
REDIRECT EXAMINATION BY MR. ASHE:
Q I just want to clarify a few things.
I just want to clarify the FTC did not ask you to testify as a market expert, did we?
A No, not at all.
Q And we did not ask you to testify as to consumer expectations, did we?
A Not at all.

Q We asked you simply to calculate for a certain number of machines what their -- how many Bitcoins in theory they could produce or they would mine on one day versus the number of machines that they theoretically could generate at another date; is that correct?

A Correct. As well as some future projections for the Monarch.

Q That's correct. Now, on those future projections, I know that Defendant's Exhibit 514, the Twitter one, Bitcoin hash rate had grown linearly and not exponentially. When we were talking about -- let me step back.

The calculations that you ran for the BitForce machines, as I recall, were all based on historical difficulty numbers; is that correct?

A Correct.

Q And the Monarch machines up until the current date were all based on historical rates of difficulty?

A Correct.

Q So there was no assumptions as to the growth of the difficulty for the BitForce machines or the Monarch up until the present date?

A Not at all.

Q Okay. So there really is, as my daughter would say, it's just plug and chug into the formula?

A Correct.

Q Okay. And it's really just the Monarch going forward where you said you had to make some assumptions?

A Exactly. And I was very aware that there was a significant amount of uncertainty among the experts in the field, which is why I provided a variety of calculations, including linear growth as well as exponential growth. And even more than that, constant or nongrowth of the Bitcoin hash rate.

Q And as I recall, when you testified if the hash rate growth was linear, you still said a Monarch would not break even?

A That's correct.

Q Okay. So even linear wouldn't break even.

I want to turn your attention briefly to this other article that you were shown, U. researchers develop Bitcoin prediction mark. I don't think you were able to fully answer the question. I think you were beginning to say that were Bitcoin to become -- as it said, were Bitcoin to become a mainstream currency, its value would increase, but then you say -- or the article attributes to you that investors believe that's not a likely --

A That is correct. So what I was trying to explain to the interviewer in this paragraph is that what the market data suggests is that market participants do not believe that this is likely because, and here's the argument, this is a standard

argument, if it is true that Bitcoin becoming a mainstream currency would lead to a 20-fold appreciation in the exchange rate, and if it is true that Bitcoin becoming a mainstream currency has, let's say, a 50-percent probability of success, then that would mean the current exchange rate factoring in that future unpredictability should be ten-fold higher, not what it is right now. And so I was using this in fact to argue that the market believes that Bitcoin becoming a mainstream currency is numerically very unlikely.

Q Okay. And then I think your projections on the Monarch in terms of when you theoretically could recoup your losses are really on a short term, you know, over a short term, and if this, you know, say that you -- to be speculative, if Bitcoin were to become mainstream currency, that would likely be much -- in the distant future than the short term given the way governments view the currency?

A I don't want to speculate on that. What I can tell from the data is that the market believes that Bitcoin ever becoming a mainstream currency is very unlikely.

Q Fair enough.

MR. ASHE: One second, Your Honor.

Thank you, Your Honor.

THE COURT: Mr. Humphrey, redirect -- recross.

MR. HUMPHREY: Your Honor, understood. I actually have no recross. As a housekeeping matter, I would ask at

this time that the court admit Defendant's Exhibits 514 and 515.

MR. ASHE: No objection, Your Honor.

THE COURT: Defendant's Exhibits 514 and 515 shall be admitted.

Let me ask you, Mr. Griffin, do you have any recross?

MR. GRIFFIN: No, Your Honor.

THE COURT: Okay. Thank you.

Thank you, Doctor. You can stand down.

THE WITNESS: Thank you, Your Honor.

(Witness excused.)

THE COURT: Could I have counsel approach?

(Counsel approached the bench and the following proceedings were had:)

THE COURT: Where are we at in terms of FTC --

MS. WONG: No more witnesses.

THE COURT: And where are you at? How many witnesses do you plan on calling?

MR. HUMPHREY: One witness, Your Honor. We have just one. Now, I'll tell you that Mr. -- we went through it last night. It's a couple of hours. I'd like to not do that I'll take -- you could shorten that. I'd like to propose that you entertain the possibility of him being on for approximately two hours, and that would be our -- we would put

Mr. Bourne on, and then we'd be ready to close.

THE COURT: Well, I guess my concern would be if I were to shorten that, how would I shorten it? Would you say, hey, Judge, if you're really --

MR. HUMPHREY: If you gave me a dirty look and I'd streamline it. I mean, that's kind of -- really it's an issue of we're going to see how it flows. I just want to let everyone know the dry one was a couple of hours.

MR. ASHE: We're prepared to be here tomorrow.

THE COURT: I know you're prepared for that. I'm joking.

MR. ASHE: It's up to you, Your Honor.

THE COURT: I'm willing to just hear what you all want to present. I think if there's a point where I get it, I'll just call you up and say, Mr. Humphrey, I get it, and I won't do it --

MR. HUMPHREY: I appreciate that.

THE COURT: Hey, we can move on or something.

MR. HUMPHREY: That would be appreciated.

THE COURT: We can do it that way.

Let me do this: Why don't we take a recess. If we take it to one, is that good for -- is that good for everyone?

I don't want to -- sometimes I assume but -- if we start at one o'clock.

Now, after we have that testimony, I'm sure at some

point you guys are going to argue to me, right?

MS. WONG: If it's helpful, we can do a closing, Your Honor.

THE COURT: Yeah. You know I don't know whether it's better now that I hear -- maybe I can ask questions, you know, hearing everything you say. I think that helps me so we -- I can take the full argument where you may be closing and I may want to interrupt just so I can be clear what the position is. I may turn to Mr. Humphrey or Mr. Griffin and say what do you all think.

MS. WONG: We don't have to do a closing. Whatever is most helpful to you.

THE COURT: I think you can -- I think the closing is fine in a sense. You can argue how you've shown, but I may stop you in the midst is what I'm saying, and I'm not trying to be rude. But it helps me to know what the ultimate issues are. You guys can direct me one way or the other.

MR. HUMPHREY: I think that's great. I do have a 24-page PowerPoint as part of my closing. I think it will be helpful. Again, if you don't think that's the way to go and you would rather ask questions, I'm willing to abandon that all the way.

THE COURT: Why don't we do this: I'll let you guys go in terms of your closing, but in the midst I may ask you to stop.

MR. GRIFFIN: Feel free to ask questions, Your Honor.

THE COURT: Same with you. I may stop you and I may see where you're going and may not need this. Hopefully we'll have some time to do this. That way when everyone leaves here today, I'm pretty clear on it.

Then you all think about you want me to -- and this is up to you. You've got a lot of exhibits. I know you want me to take notice of the papers filed, but if there's any specific exhibits like in particular this or that may not have been entered here, and I know I will consider it all, it would help to point my attention to it. Just kind of think about that and any proposed judgments. What do you guys think about that? You don't have to answer me now.

MS. WONG: A proposed stipulated preliminary injunction?

THE COURT: No. An order from FTC. I think in the end and I'm talking about this so we can -- we need to excuse you. I think in the end obviously I want to rule sooner than later, but I want to do so responsively and make sure I have the full -- I don't know if a proposed order would be helpful.

MR. HUMPHREY: It may be helpful to you.

THE COURT: Under ten pages. I don't know. You say, Well, Judge, you have it all here and look at my -- that's fine. I'm just trying to see the quickest way I can

responsively turn around considering everything I need to or every position.

MR. HUMPHREY: I'd say if after you hear the evidence and you decide that you'd like -- you could benefit from a proposed order, we could both prepare our own and submit them, at least guide you in some way.

THE COURT: Right. And which would be nice.

MR. HUMPHREY: Sure.

THE COURT: We can talk about time. I know time is of the essence obviously, but we could talk about that.

MR. HUMPHREY: Okay.

THE COURT: Why don't we take a recess till one o'clock, and you put on your evidence. Then we'll just go from there.

MR. HUMPHREY: Okay. Thank you, Your Honor.

THE COURT: Thank you. Mind you, I'm always open to suggestions. I don't have any best way to do anything, and typically I always try to get parties to agree. That helps me.

MR. HUMPHREY: I appreciate it. Thank you.

(The proceedings returned to open court.)

(A recess was taken.)

THE COURT: Now, the plaintiff rests, is that correct, in terms of the presentation of evidence?

MS. WONG: That's correct, Your Honor.

THE COURT: Mr. Humphrey, you want to call --

MR. GRIFFIN: Your Honor, now that the FTC has rested, I have a motion under Rule 52(c), judgment on partial findings. It's not a directed verdict because you give all the deference that you would if you made a decision after all the evidence is heard, but my suggestion is we've already talked about closing arguments, that we defer the argument on my Rule 52(c) motion until I renew a motion at the end of all the evidence.

THE COURT: That's fine.

MR. HUMPHREY: Your Honor, if I might, I'd like to also move under Rule 52(c), for it as well, to the proceedings --

THE COURT: That said, now, defense can call their witness.

MR. HUMPHREY: Thank you, Your Honor.

The defense calls Mr. Bruce Bourne to the stand.

BRUCE BOURNE, being duly sworn by the courtroom deputy, testified:

DIRECT EXAMINATION BY MR. HUMPHREY:

Q Good afternoon.

A Hi, Mr. Humphrey.

Q Would you please introduce yourself to the court?

A My name is Bruce Bourne. Last name is spelled B-o-u-r-n-e.

Q And, Mr. Bourne, are you a consultant to Butterfly Labs?
A Yes, I am.
Q Okay. And in the role of consultant, have you also served as the acting chief financial officer of Butterfly Labs?
A Yes.
Q In terms of your actual role at Butterfly Labs, would you tell the court a little bit more about that?
A Sure. I've been working with Butterfly since September of 2013. They initially engaged me strictly in the financial area. In very short order after beginning to work with them on financial issues, because of my background, they asked me to also participate in marketing, human resources areas, much more general management. So over the course of the last 12 to 14 months, I've gotten involved in pretty much every area of the company.
Q Okay. And before we dive into some of your -- the issues you'll be addressing today, I'd like to talk a little bit about your education, your work experience. Mr. Bourne, you have a notebook in front of you. If you would flip that open, you'll see an exhibit. There's a tab one, an Exhibit 501. Do you see that document?
A Yes, I do.
Q And can you please tell the court what is Exhibit 501?
A Exhibit 501 is my current resume.

Q Okay. Is that an up-to-date resume?
A Yes, it is.
Q Does that accurately reflect your work experience and your education?
A It does.
MR. HUMPHREY: Your Honor, at this time I'd move for the admission of Defendant's Exhibit 501.
MS. FRAZIER: No objection, Your Honor.
THE COURT: Defendant's Exhibit 501 shall be admitted.
Q (BY MR. HUMPHREY) Mr. Bourne, you have Exhibit 501 in your notebook. You also have it on the screen in front of you. I want to walk through that if we could. Did you attend college, sir?
A Yes, I did.
Q Where did you attend college?
A Florida State University.
Q The degree you obtained?
A I have a bachelor of science degree in accounting.
Q And did you graduate with honors?
A I did. I graduated summa cum laude.
Q Okay. Any other education in your background?
A Yes. I have a Master's in Business Administration.
Q And where did you take your Master's in Business Administration from?

A Harvard Business School.
Q And in terms of graduating from Harvard Business School -- let me ask you this first, give me a little description of what you studied at Harvard Business School.
A So at Harvard, Harvard is known as a general management MBA. It's not focused in any one particular discipline. It's a broad-based education in all aspects of business management.
Q Okay. And you graduated with distinction from Harvard Business School; is that correct?
A That's right. First and second year honors.
Q Okay. We've talked about undergraduate experience, Harvard Business School. Any other educational experience?
A Other than continuing professional education when I was in public accounting, so to maintain a CPA license, you had to have CPE credits just like your CLE.
Q Okay. Very good. Actually that's a nice transition into your work experience. Let's walk the court through that if we could.
Let's talk about after undergraduate work, let's talk about your -- you have military experience in your background, correct?
A That's right. I spent four years on active duty.
Q Can you describe the role -- your position, your role while on active duty?
A Right. I was a U.S. Army finance officer, started out

as a second lieutenant. I left service after four years having reached the rank of captain, and in -- at four years I had a variety of different jobs, but most of it revolved around the finance operations of the Army base that I was stationed at.

Q Okay. Let me actually, just so we're clear, flip to the page of your resume just so the court can follow along as we describe this work experience.

After the service in the military, you moved into private enterprise?

A Into public accounting actually. I was hired by Arthur Andersen when I graduated from college. They knew that I had a four-year military commitment, so I worked for Arthur for six months, went on a four-year military leave of absence, and then I returned to Arthur Andersen after the Army.

Q Okay. Tell the court what was it that you did at Arthur Andersen.

A So at Arthur Andersen I was an auditor, CPA. I concentrated primarily on real estate, finance, and manufacturing clients. So I performed audits. I did the type of work that they do at MarksNelson and Rubin Brown only at a larger firm.

Q Okay. And then after that experience -- that's from 1984 to 1988, correct?

A That's right.

Q And then you move on. Where is your next employment?
A So at Arthur Andersen, Delta Airlines was one of the clients that I worked on. I found the airline business to be interesting, and I got an opportunity from a company called Phoenix Airlines Services to join them as their corporate controller. In that role I ran the accounting function, payroll, payables, all of the typical finance functions.

I worked for the chief financial officer, and working with him, I did a lot of work around profitability analysis of airplanes, the setting of rates for different routes, a lot of -- it wasn't just the historical accounting role. It was also the forward-looking part of the business where we were planning purchases of aircraft, new routes, new price.

Q Okay. Very good. And then that's -- there's a position on here, Ziff-Davis, vice president, general manager, and special assistant to the CEO. Would you describe for the court -- let's talk first about how did that opportunity come to you?

A Well, I was at Phoenix Airline Services when I decided I wanted to get an MBA because I had at that point been working for about 11 -- 10 or 11 years mostly in accounting. And having worked for this chief financial officer, I really liked the forward-looking part of the business rather than the historical part. If you're an accountant, you're a historian.

I wanted to be more of an architect, building. So that's the point at which I applied to business school, was accepted, left, and went to Harvard.

Between Harvard's two-year program during the first year, you start to look for a summer type job, and in the course of my first year, I was approached by one of my classmates who asked me what I was planning to do and I told him. He said, Well, my family owns a business that my dad would be interested in talking to you about if you would consider coming to New York for a summer and working in the business. I said I was open to that.

Q Okay. Tell me a little bit about -- again, the court, focus on the court. Tell the court about your experience at Ziff-Davis, what you worked on, your role.

A Sure, okay. So as it turned out, the family business was a billion-dollar magazine publishing business, the largest computer magazine company in the United States. They had actually a holding company with the trade show company, newsletters, magazines. There was a TV aspect of it as well, product testing. So it was a pretty diversified business.

I went to work for Mr. Ziff for that summer, and into the next year, my second year of business school I continued working for him. Basically I was assigned the task of doing a strategic analysis of all of the different businesses they had either owned -- they had either started or

purchased over the last several years.

I worked on competitive analysis, how to evaluate these different businesses, which ones were similar to each other and could be grouped and managed as a group. Based on that work over the course of the summer, they invited me to continue working during my second year of business school on a reduced basis, and they offered me a permanent job to come back after business school, which I did.

Q Okay. Then you worked there up until 1995, correct?

A That's correct. When I went back after my second year of business school, I was assigned to the largest division. Actually I had a dual role. I was the general manager of the magazine publishing division, which was over $500 million a year in revenue, had international operations, domestic operations of probably 15 different publications. I also had corporate parent company responsibilities for corporate functions that served all of the divisions; payroll, purchasing, facilities management, telecommunications, that type of thing.

Q Okay. And then the next position on your resume, the SPL Worldgroup B.V., you see that, Mr. Bourne?

A I do.

Q Can you describe that to the court?

A I can. When I was at Ziff-Davis, after three years, the younger generation of family took over the business and

decided to sell it, and it was broken up along the business lines that I had described in my original work for the company. They broke the company up in to three or four different pieces, sold each one off, and since I was now part of a division and there was no longer a corporate umbrella organization, the -- my role diminished.

My role narrowed at that point. I could have stayed with Ziff but decided to move on. I had in the course of working for Ziff, which was in New York, been to California a lot. There were a lot of high-tech operations out there that the magazine business took an interest in.

So I took a job with a company, SPL Worldgroup, as the chief financial officer. Again, at Ziff I had worked for this CFO in part of my duties. This was my first chance to become a chief financial officer. So SPL was a rollup of about a dozen existing businesses. All of them were in the software development industry. They were established businesses that all decided to throw their lots in together under a parent company that would own and operate all of them collectively.

So this was -- it was called a rollup of different businesses under a parent company. In that role I was the chief financial officer. It was both managing the financial functions as well as blending a variety of different cultures. And this was in, I don't know, eight or ten different

countries where we had different offices. There were cultural differences. There were system differences. There were processes that were different, and all of that needed to be blended.

Q Mr. Bourne, when I look at the description of the SPL Worldgroup opportunity, I see planning, accounting, reporting, business development; is that correct?

A All of those. We also raised venture capital, created some joint partnerships with other companies. It was a fairly complex business.

Q Okay. Very good.

If you look at the next entry on your resume, the Autoland experience, can you briefly just describe that to the court?

A Sure. I was, again, the chief financial officer at Autoland. This was an established company that brokered automobiles, and this was in 1999, 2000. They were interested in doing the same business on the internet, so this was really about the launch of an entirely new sales channel which had to be built from scratch. It involved writing a plan, raising capital to finance that, hiring people. We built a call center and moved the business not completely online but replicated the existing physical business in an online setting.

Q And you dealt with strategic market issues at Autoland?

A It was. At that time selling cars over the internet was a pretty new idea.

Q Okay. Then you moved to UnitedHealth Group. Do I have that correct?

A That's right. I actually worked for a subsidiary of UnitedHealth Group called United Behavioral Health.

Q Okay. That's -- the Autoland work is from 2000 to 2001. I see UnitedHealth Group, 2002 to 2008. Can you describe for the court your work experience at UnitedHealth Group?

A Yes. I started out as the vice president of finance, again working for the CFO. In this case I had gone from Autoland being around $100 million a year in revenue to UBH which was $700 million. So a much larger business in the healthcare insurance industry, which was not an area I had experience in. They brought me in to basically build some structure around their financial reporting process, speed up the close process, improve the reporting, get better control over the finances, and help the business unit to report upstream to the division management.

Q Okay. And when I look at that --

THE COURT: Counsel, we probably -- the court will definitely note his resume, and to the extent during the testimony you want to refer back to it specifically. But I see he has quite a bit of history -- I mean, experience. So to the extent you want to refer back, that's fine. The court

will certainly review and I have been reviewing Defendant's Exhibit 501.

MR. HUMPHREY: We'll move along, Your Honor.

Q (BY MR. HUMPHREY) Mr. Bourne, let's do that.

Briefly before we move on from the resume, we talked a little bit about UnitedHealth Group. Then you move into a role as -- described as independent business consultant, correct?

A That's right, yeah.

Q Okay. And just generally can you describe very basically what that entailed, what you were doing, what the idea was behind that move.

A Sure. I have for the last six years worked in both financial and general management advisory roles with a variety of businesses ranging from two guys with an idea and not even a business plan up to established businesses that have been operating for 30 years. I've been hired to do planning, financial management, capital raises, basically anything that falls under the financial or general management area.

Q Okay. Again, we can revisit this as needed, I don't think we will need to, but you've been involved in business and strategic planning throughout your career, correct?

A I have.

Q And you've been involved in budgeting and forecasting throughout your career?

A Yes.
Q And how about financing strategy?
A To a lesser extent than the planning and budgeting, but, yes.
Q And how about venture capital?
A Yes. I have good exposure to venture capital.
Q Okay. Thank you, Mr. Bourne. Let's move on.

Tell me -- let's move on to this topic, why we're here today. Let's begin -- tell the court, if you would, about Butterfly Labs.

A Butterfly Labs is a three-year-old company started -- formed in 2011; first year of real operations, 2012. Peaked at over 100 people when we were in the heat of manufacturing the 65nm BitForce equipment. We've gotten down to about 45 people prior to the FTC coming in in September.

The company, as we've discussed this morning, makes a line of very high-speed, specialized computer equipment that is primarily used for mining Bitcoins, and it is a -- it's still an early stage company in a very innovative field within an industry that didn't exist five or six years ago.

Q Okay. And Mr. Bourne, how did you learn about Butterfly Labs?

A I was contacted by a person that I had done consulting work for in 1999, who was a friend of one of the founders of Butterfly Labs. He contacted me, said they were interested in

some financial help, and he recalled that I had done some good work for him and asked me if I would be willing to talk to somebody from Butterfly.

Q Okay. Did you talk to somebody from Butterfly?

A I did.

Q Who did you talk to?

A I talked to Jeff Ownby, who was one of the cofounders of the company.

Q Okay. And did you talk to anybody else?

A After speaking with Mr. Ownby, then I talked by phone with Sonny Vleisides, one of the other cofounders.

Q Okay. Can you just briefly tell the court about those conversations, your discussions before joining Butterfly Labs.

A Sure. The conversations were sort of two way. They were considering whether I was appropriate to come work with them in the areas that they thought they needed help. At the same time for me it was a little bit of vetting of the company as to whether I wanted to spend time working with them.

In the course of conversation I came to learn a little bit about Bitcoin, the innovations that they were doing, where they were headed, what their company policies were, and in my first conversation with Mr. Ownby, he informed me that his cofounder, Mr. Vleisides, had a conviction for a criminal issue prior to founding Butterfly Labs, but he wanted me to be advised of that up front.

Q Do you know if the company advises employees of that issue as part of their consideration of employment?

A Yes. Part of the hiring process is that that history is disclosed to anyone before they actually commit to become an employee of the company.

Q And obviously you did take on a role with the company, but, Mr. Bourne, would you summarize what you heard or what it was that caused you to lend your efforts to the company after having those discussions?

A I looked at everything I could find online about the previous issues that Mr. Vleisides had had, talked with Mr. Vleisides directly at length about it, let him know that as a former CPA and a person who made my living by advising companies, that I wasn't going to associate with a company that conducted itself in anything other than a very aboveboard manner. I was assured that they in fact were operating in a manner that was fair, square, and aboveboard.

In fact, in part of the conversation I asked, well, why did you guys name this Butterfly Labs because that doesn't say anything about what you do, and typically a company wants to be somewhat tied to the name. Mr. Vleisides described it to me as he had come off a very difficult part of his life and he wanted a fresh start, and that Butterfly Labs with the idea of metamorphosis was about a new start.

Q Okay. Thank you, Mr. Bourne.

You discussed earlier the products -- you referenced the products that Butterfly Labs makes. I'd like to take a closer look at that and just provide an overview to the court.

If you look at Exhibit 502 in your notebook, can you describe Exhibit 502, Mr. Bourne?

A Yes. This is four panels that show the four different generations of the company's products from early stage to the current product.

Q Can you just briefly walk the court through the generations starting with the first working through the fourth, just very briefly.

A Sure. Actually Dr. Narayanan referred to some of this earlier. The first generation miner, the field programmable gate array or FPGA single, was the initial product the company built. It's built out of existing components. Everything is off the shelf not custom designed other than the enclosure, and that was the first product.

The second generation was to take that same technology and put it into a much larger format that is much faster.

The third generation moved in to the ASIC chips, which is now a very specialty, custom designed, proprietary chip -- computer chip technology that forms the core of that machine, and then putting it into enclosure with cooling system, et cetera, and these -- the third generation starts to

step up to a much faster speed.

The fourth generation, the Monarch, is, again, based on ASIC technology, but the distance between the transistors on the chip has shrunk from 65nm to 28nm. That allows you to pack more transistors onto a chip, which makes the chip much faster and more energy efficient allowing you to run it at a higher speed.

Q Okay. Mr. Bourne, let's quickly -- we do have some hardware here today, correct?

A Yes, we do.

Q Just briefly I'd like to walk the court through that.

MR. HUMPHREY: We'll make it quick, Your Honor. I do think it's important that you see this and have a brief description.

May I approach, Your Honor?

THE COURT: You may.

MR. HUMPHREY: Thank you.

Q (BY MR. HUMPHREY) Mr. Bourne, let's take a look at that hardware. Exhibit -- what's been marked as Defense Exhibit 503A, do you see that? It's actually the chip.

A Okay. Thank you. Yes, I do.

Q And earlier we heard the court describe the -- his analogy to a car, and I think that's apt in that what is the engine of a car, can you describe the chip to a court?

A Right. This is the 65nm chip, so this is not the first

-- this is the third generation, the first specific application. This chip was a real innovation in Bitcoin mining. It increased the speed pretty dramatically from about 800 million calculations per second to 4 billion calculations per second or higher.

THE COURT: What is that in gigahertz? Isn't it --

THE WITNESS: In gigahash?

THE COURT: Gigahash.

THE WITNESS: So 800 million would be 800 megahash or 0.8 gigahash. 0.8 gigahash then up to -- this is a 4 to 5 gigahash, this chip right here. So this is the brains of the machine once we get to the ASIC versions.

Q (BY MR. HUMPHREY) Now, you did mention that that was the third generation. We do have what's been marked as Exhibit 503B. Would you describe that to the court?

A Yes. 503B, this is the FPGA. This is the first generation. Your Honor, you can see here these are the chips here, this one and this one. They're larger than what I just showed you, but they ran a lot slower, and this was not designed by the company. The company purchased these chips and then programmed them to do what the company wanted it to do.

Further, the company had to design the -- put in a circuit board that the chip is attached to and then bought off-the-shelf components and had that assembled onto the board

to control the power, to route the calculations and to some software.

Now, this, if I go to 503C --

Q Please do.

A This is the core of this machine here. So this is actually what was being sold was this eight -- well, 0.8 gigahash first generation machine which sold for about $600, this machine.

Q And so I'm going to oversimplify this, Mr. Bourne, but generally speaking a chip is placed on the board and the board is placed in a unit or an enclosure, correct?

A That's correct. You add -- you have to dissipate heat, so there's a cooling system in there as well.

Q Just describe, if you would, briefly how the cooling system operates.

A There's metal that's called the heatsink, which draws heat away from the chip or the printed circuit board, and there's a fan that blows across that like the radiator of a car to cool that chip.

Q And if you look at the next exhibit marked 503D.

A So now we're moving into the third generation, which is based off of this little 65nm chip. So this is the Jalapeno that was referred to earlier. The Jalapenos ran from 4 1/2 up to about 12 or 13 gigahash, so that many millions of calculations a second. So we went from 0.8 to 4 to 12

depending on how many of these chips were placed into this machine, and this machine sold for between $150 and $300.

Q And as part of that same generation, the 65nm, you just showed the court the Jalapeno, how about the single, Mr. Bourne?

A This is the 65nm single. This runs 60 hash. So this would run at a -- is the equivalent of about a dozen of these Jalapenos, and this sold for between $1,300 and $2,500.

Q I'm not going to attempt to place the MiniRig over by you, Mr. Bourne, but if you would, could you just point it out?

A Sure. It's the roll-on suitcase-sized machine you see over here on the table with the tablet glowing the display screen on the front. That machine ran at 500 gigahash or 500 million calculations per second, so it was eight times more powerful than the single. That sold for about $22,500.

Q Okay. So we looked at the third generation, we've looked at the Jalapeno, a single, and a MiniRig. Then we move into the fourth generation; is that correct?

A That's right.

Q And I'm going to hand you the fourth generation. While I do that, would you tell the court a little bit about the idea behind the fourth generation and how you move from the third generation in to the fourth generation.

A Sure. The fourth generation is based on, similar to

this chip, an ASIC special -- specially-designed custom hand-routed chip that only is intended to do one thing, this SHA-256 calculation. The idea was that by going to a 28nm technology, we could run it faster and more energy efficiently. In the Bitcoin mining world, speed and power efficiency are the two primary components that a manufacturer can use to sell its products.

Q And if you would, Mr. Bourne, just pick up that Monarch, and just quickly just demonstrate to the court the various parts of that unit, if you would.

A All right. So, Your Honor, you can't see them, but here and here, this is one printed circuit board. There's a chip here and a chip here. These chips get extremely hot. These copper plates are used to draw heat away from the chip which is away from the board. This, again, going back to the car radiator analogy, this is a radiator. This is a liquid-filled radiator with a fan, tubes that go to these little reservoirs. The copper draws heat away from the chip. The reservoir has liquid which absorbs the heat. That liquid is then circulated through this radiator which has air drawn across it by the fan to cool that.

This runs at 700 gigahash or 700 million calculations a second, so we've moved from 0.8 to 700, which is about 90 times faster in less than two years of elapsed time. That's really significant growth in technology in a

very short period of time.

Q And, Mr. Bourne, in terms of the technological developments, is it fair to say that it's been a race in the industry as in new technicoins and new technology, has it been a race to develop new technology, an ongoing race?

A Yes. We have now -- although Butterfly was one of the very first companies to create -- actually they may well have been the first company to create this application of an FPGA, the very first generation, to move beyond the CPUs and the GPUs that Dr. Narayanan referenced earlier to something that was faster and more energy efficient. They were the first to do that.

By the time we get to this generation now, there are a number of competitors in the marketplace, and each of them is trying to beat the other to the faster chip, the smaller node size, and more energy efficiency. I might add that I believe we are the last standing U.S. based manufacturer of this equipment.

Q Mr. Bourne, let's move away from the equipment. I thank you for your description. Let's talk about -- a little bit more about this lawsuit that the FTC has brought.

Do you understand, Mr. Bourne, what the FTC is challenging in this lawsuit?

A I believe I do.

Q Can you tell the court your understanding.

A It revolves around misrepresentation of delivery timeframes, the number of Bitcoins that the machine will mine, and then, lastly, there's an issue around taking preorder money from customers.

Q Okay. And so one of the things you hit on there is interaction with customers. Let's look at that issue a little bit. What I want to ask you about is in terms of interacting with consumers and customers, can you tell the court a little bit about how does Butterfly Labs do that?

A The -- well, we do a lot of online advertising. It's all basically online sales. We interact with customers through our website, through banner ads that are placed on other websites. We do have a customer service department where they take inbound e-mails. Not a lot of telephone calls. Even though it's considered a call center, it's really mostly inbound e-mails. Then we have an outbound newsletter. We have the ability to e-mail people. So we interact in a variety of ways, but the primary exposure of people to the company is the banner advertising that we do online.

Q Speaking of that, would you look at Exhibit 504. Is that a banner ad?

A Yes, this is a banner ad.

Q And there's one behind it. There should be two. That's also a banner ad?

A Yes.

Q Okay. And I just want to ask you in terms of the level of interaction with consumers how you interact just in terms of numbers. Can you give some description to the court of what that represents in terms of your interactions?

A Yes. The way this type of advertising works online is that a company like us would contract with generally Google or Facebook or in our case both to display these advertisements on their search pages. When someone searches for a particular term, they get a list of responsive information, and then there's usually some real estate at the top or side of the page where this ad is displayed. In terms of numbers, these -- not these -- necessarily these specific ads, but ads, these and others like them, as an advertiser, we get reports back from Google and from Facebook as to how many times those ads are served up in front of people. They go on further to say how many people click on the ad to go deeper and link to the company's website.

Google tells us that since the company started working with Google, these ads have been served up 400 million times. Facebook tells us 1.5 billion times. So in the vicinity of 2 billion displays of these advertisements to potential customers.

Q Okay. And in terms of that being -- so those numbers are mind boggling. But in terms of the level of interaction, that certainly, is it fair to say, is the primary level of

interaction with potential customers?
A Yes, absolutely by far. This is 99.9 something percent.
Q Okay. In terms of what this banner ad does, now, I see here it has the 50 gigahash on the banner ad, correct?
A Yes, it does.
Q And it has the Butterfly Labs' logo, correct?
A That's correct.
Q Picture of a machine?
A Yes.
Q And a button that you can click, order now; is that correct?
A Yes, that's right.
Q Is there any representation in that banner ad about profitability?
A No, there's not.
Q How about the number of Bitcoins that the machine will mine?
A Not on this banner ad.
Q Okay. How about the other one? There are two.
A Neither of those aspects appears on the second banner ad.
Q Okay. Today we've talked about what the case is about, and one of the things it's about is the representations on profitability or number of Bitcoins. I know there is delivery and preorders.

Now, in fairness, at one time the "order now" button, it did say "preorder now," correct?

A That's on some of the ads that were similar, and some served up similar to this, they would have said preorder.

Q Okay. Now, in light of the company's position -- let me just ask you this: The ones that I've shown you, they say "order now," correct?

A That's right.

Q And what is the company's intention moving forward on what banner ad would be used as part of the business?

A The company has discontinued the use of preorders and is not going to return to the use of preorders. Our ads in the future will say order or order now or something equivalent to that.

Q Okay. And so is it your testimony, Mr. Bourne, that the company will not going forward use banner ads that say preorder on them?

A That's correct. The company will not do that.

Q In fact, the company has not been taking preorders since --

A July. July 17th of 2014, we announced we were no longer taking preorders on the Monarch product. We have an upcoming product called the BitSafe, which we haven't looked at yet. With that one I believe we announced in March that we would not be taking preorders for BitSafe.

Q And you -- did I hear that right, Mr. Bourne, you announced in March of 2014, that you would not take preorders for the BitSafe?

A That's correct.

Q We've looked at the products. We've looked at the banner ads. Let's move into what we know, what we can tell the court about what consumers think of Butterfly Labs' products, and I'd like to also use one of the exhibits to do that. Exhibit 505, Mr. Bourne, could you take a look at that, please.

A All right. I see 505.

Q Can you describe what 505 is to the court?

A This is a pie chart that is an analysis of buyers who bought the latest generation of product, the Monarch 28nm, who also purchased the prior generation of product, the 65nm BitForce products.

Q Okay. And I see here a reference to sales from new customers, sales from repeat customers. Can you further explain what those represent?

A Sure. In terms of dollars that were spent, if you look at the total dollars we took in orders for our latest generation of products, 58 percent of the dollar value of those orders came from people who had previously bought our 65nm. They were people who came back to buy again from the company.

On the flip side, 42 percent of the dollars came from brand new customers who had not purchased our prior generation. That's based on dollar value. If you do the same analysis on a volume of orders, about one-third of the orders came from prior customers. Two-thirds of the orders came from new customers if you just count the orders.

The importance of that is that if one-third of the orders came from repeat buyers but almost 60 percent of the money came from those repeat buyers, the repeat buyer spends more per person than the new customer, which is an endorsement of any product.

Q And when you say, so we're clear, a repeat buyer, you're talking about someone -- a customer who has made a purchase, a previous purchase of a Butterfly Labs' product and is making an additional purchase going forward of more product, correct?

A That's correct.

Q Okay. We've been talking with this chart repeat customers, pleased customers.

Would you -- Mr. Bourne, you would acknowledge that there have been some customer complaints, correct?

A Yes, there have.

Q Okay. In fact, the FTC has cited to customer complaints as part of this lawsuit, correct?

A That's right.

Q Now, the next chart, Exhibit 506, does that address the

FTC complaints that have been provided to us as coming from the Sentinel database?

A Yes, it does.

Q And will you just briefly describe in Exhibit 506, there are a couple of it looks like three lines, a blue, red, and green. Would you describe what those lines represent to the court?

A Yes. If we focus strictly on the blue line for a minute, the blue line represents the volume of orders in terms of units ordered by month in 2013. So you look at the left-hand scale where it says units, and what this shows is that from January through April, the number of units that were ordered each month increased and peaked in April, which happened to correspond with a spike in the Bitcoin price.

And then the number of units that was ordered declined from that peak, sort of steadily declined a little bit each month down to October, and then there was a bit of a step up. In November we had a sale. We had a Thanksgiving sale on units, so there was a step up in November, and it stayed at about that level for December. So the blue line represents volume of units ordered per month.

Shall I move on to the red line?

Q Please do.

A The red line, which on my screen looks orange, this is the complaints that were registered in the FTC database by

month, and it's zero -- actually I think the first complaint was in about April. I can certainly see there's some in May.

So the complaints to the FTC began in about May, April, May, climbed a little bit, and then -- sorry. Started in April, May, and then climbed in the July, August, September timeframe, peaked, and then you can see that declined down to near zero on the left-hand scale -- sorry, on the right-hand scale to the end of the year.

So what that shows, if you just look at those two lines, is that our orders peaked in April, and the complaints peaked in September.

Q Okay. So we haven't talked about shipments yet. We've talked about the customer orders coming in, and then we've looked at the complaints that come in, correct?

A (Witness nodded head.)

Q Is that correct?

A Yes, it is.

Q Thank you. By the way, when we're looking at these complaints, these Federal Trade Commission complaints, this is 2013, correct?

A 2013, that's right.

Q And the lawsuit -- this lawsuit was filed in September of?

A 2014.

Q Okay. And then looking at this 2013 data involving the

2013 FTC complaints, can you describe what the green line represents, Mr. Bourne?

A The green line represents the number of units that were shipped in each individual month. Again, you look at the left-hand scale for units. First units were shipped in April, a few more in May, and then from June it started to -- the production ramped up and climbed steadily with a peak in November of approximately 15,000 units shipped, and at that point we had shipped all of the preordered units. So the number of units shipped in December dropped pretty dramatically, mostly because we had fulfilled our order book, and at that point we had moved into selling the next generation of equipment.

Q Okay. And when the products are delivered, as they're delivered even, what happens to the complaints?

A Well, it's pretty clear to see that the complaints were peaking -- were ramping up and peaking prior to the green line going nearly straight up. People were complaining about nondelivery right before the company started to deliver. In fact, we're -- ramped up its production and delivery. The first two bullet points over in the text box, what those communicate is that about 80 percent, actually over 80 percent of those complaints were submitted through October, but 80 percent of the shipments were between October and December.

And as you see, once the shipments start -- once the

units really get out in the marketplace, we're getting them in the hands of customers, the complaints to the FTC dramatically drop. And our understanding of the Sentinel database is that people went there to register a complaint but it's a static database. Nobody goes back to say, never mind, I got my unit or I got my refund. It just looks like hundreds of people complained, and there's no way to know what eventually happened.

We took that data, which the FTC provided to us, back against our customer list to see who had been shipped, who had been refunded.

Q Okay.

A Out of that our conclusion is that over 90 percent, 93 percent of all the complaints up through July of 2014, have been resolved through either shipment or refund.

Q Mr. Bourne, is it fair to say that the far majority -- that the great majority of complaints, FTC complaints that we've seen, they are tied to this red line in the graph, correct?

A The complaints are the red line, and they are tied to the fact that the green line is to the right of the red line.

Q And in fact the red line, the complaints -- in terms of overall complaints, you mentioned dealing with complaints through July 2014. Let me try this a little different way.

You mentioned dealing with over 93 of complaints

through July 2014. In terms of the number of complaints that would have -- that we would be dealing with appearing off of this chart, in other words, through 2014, can you put those in perspective in light of the complaints we're seeing on the chart?

A The number of complaints I believe dropped dramatically after these units were shipped out. There have been complaints in 2014, but it's -- I believe it's a relative -- 10 to 15 percent of the complaints were after that. This is tied to the prior generation of units.

Q And it's tied to the preorder generation of units?

A Yes.

Q Okay.

THE COURT: Let me ask this question: So what you're suggesting is as of July 2014, you have refunded to all those complaints or all the consumers have either been refunded or received?

THE WITNESS: Going -- Your Honor, looking back as of July 2014, the vast majority of them were shipped to, and a much smaller percentage were refunded. But practically all of the people who ordered that generation have been either shipped or refunded, and by practically all, I would say there's fewer than 100 orders where people moved, we couldn't confirm a shipping address. We've reached out to them multiple times to see if we can confirm either their shipping

address to get it to them. There are certain countries which turns out won't allow our --

THE COURT: What unit are we talking about again so I can be clear?

THE WITNESS: The 65nm, the BitForce, those that you see down there. Not this one. This is the Monarch. This is the new -- I'm sorry. You can't see that.

THE COURT: No, that's fine.

THE WITNESS: These are the ones we're talking about. There were approximately 44,000 of these units that were sold and shipped. Sorry. There were about 44,000 that were shipped, and out of those -- that's the shipped portion. In addition to that, we refunded I believe $5.8 million of orders for this type of product which were subsequently canceled and refunded.

THE COURT: Okay. Thank you.

MR. HUMPHREY: Thank you, Your Honor.

Q (BY MR. HUMPHREY) We've looked at the complaints, we've looked at the orders coming in, the complaints and then the shipping.

Let's turn, Mr. Bourne, if we can, to the -- so we know there were delays, correct?

A Yes, there were, yes.

Q There were delays in from the time of the order to when the product was fulfilled and shipped?

A Yes. Unfortunately, in some cases there was a long delay, and it was delayed beyond when the company estimated it would originally start to deliver their products.

Q Okay. Let's look at the cause of the delays if we can. I'd ask you to turn to Exhibit 507. Will you describe briefly, Mr. Bourne, what is Exhibit 507? What does it represent?

A Exhibit 507 is a line chart that by week, starting in March of 2013, shows the number -- the blue line shows the number of chips we received, the little chips that are the brains of the unit, that's the left-hand scale which is in tens of thousands, and then the red line against the right-hand scale is the number of units shipped for each week. This compares those two over time.

Q Okay. Now, in making this comparison, Mr. Bourne, there's a reason for why you made the comparison between the chips being received and units shipped. Can you explain what the relevance is or what it means that the correlation, if you will, between the receipt of the chips and the shipping of the units?

A Yes. There are really two primary purposes for this chart. The first is to illustrate that until the company has the chips that are the brain of the unit, you can't build the unit, and this chart shows that we didn't really get -- we only started receiving these chips in April of 2013. Prior to

April of 2013, the company could not have built a single machine because it had no chips to build them with.

As the number of chips received, the blue line climbs, we had more and more parts available to build our machines. The red line tracks the blue line with a delay, but the conclusion here, what it illustrates is that as the company had the critical component it needed to build its machines, it built those machines, not only built them, but the red line is shipped.

So there is a delay between receipt of chips and shipment of machines, but the pattern of these two graphs is the same or nearly identical. The delay in between, once you get a chip, you still have to build the printed circuit board, assemble all of those components onto it, attach the cooling system, put the enclosure around it, and at that point is when it gets shipped. So there will be a delay between receipt of chips and actually having and shipping the finished goods.

Q But certainly the production lag analysis that's present in Exhibit 507, Mr. Bourne, it doesn't -- am I correct it demonstrates that upon receipt of chips, the company made immediate efforts to complete production and immediately ship?

A The -- I joined the company in September, which is when the blue line was really just starting to go up and the red line was just beginning to go upward, and the efforts that the company made, they brought in new staff. They went to a

contracting agency and brought in I think 20 contractors to help assemble these machines. Every space in the company's office -- there's a dedicated manufacturing area. But people were moved out of offices to allow more manufacturing to go on inside of the offices.

Stuff was -- parts were -- and finished goods were stacked up out in the hallways. Every available square foot of office was used. They went to use of overtime, six-day-a-week manufacturing, scheduled post office and FedEx I think to come twice a day instead of once a day to pick up things.

In fact, there's a note here that the total shipping costs for all of these units was about $1.9 million, which was more than the $1.7 million we paid everybody who worked there last year for the entire year. So there were extreme efforts made to build and ship those units out.

Q Let me stop you there. You said that the shipping costs paid by the company exceeded payroll costs for 2013?

A It did by a couple of hundred thousand dollars.

Q Okay. And after looking at this chart, Mr. Bourne, and the explanation you've provided, did Butterfly Labs delay shipment to customers?

A No. The company was building and shipping as fast as it could possibly ship.

Q And we've heard about burn-in testing as part of some of

the complaints that have been involved in this case, correct?
A Yes, we have.
Q Let me ask you first, Mr. Bourne, you may need to describe the production process, but let me ask you this question. In terms of the production process and where the burn-in testing fits and the identification of a product to a customer, can you explain how that works to the court?
A I can. Before any unit becomes part of the red line, meaning it's a shipped unit, it's been burn tested. So the testing occurs in between the blue line and the red line as part of the manufacturing process. Chips come in, boards are manufactured. The components are populated onto the board. It's put into an enclosure, and then it goes to testing.

The testing period, you know, it was as short as the company could make it and still be able to be sure that the vast majority of the units shipped were going to work properly and --

THE COURT: Let me ask you could you do that -- did it have to be live? And then my follow up, if it was live, did it have to be broadcast over the network? Is there a means and a method in which it didn't have to be broadcast? Are there some more commercial things that allows it not to be broadcast? I think some of the testimony I've heard that someone in charge of software can create something that can burn-in live and not be broadcast over the network. So to the

extent you can kind of fill the court in on that.

THE WITNESS: I'll give you an accountant's view of that; not an engineer's view.

THE COURT: Okay.

THE WITNESS: The company concluded that the testing off the live network would not be sufficient. There were a couple of things around this. There is a test network, but the capability of these machines outstrips the test network. We have, I believe, an e-mail from one of the core developers of the -- Bitcoin is software. It's digital. So there's a set of core developers who work on Bitcoin.

We have an e-mail from one of those core developers saying do not put ASICs onto the test network. They are too powerful. The testnet can't keep up with it. It will not -- you'll blow it up essentially. So that's one issue.

A second issue is that the test software, there's some aspect of the testing where this chip is running at full speed, and whatever part of the complex puzzles it's trying to solve, someone else far away solves that so that the Bitcoin network comes to your miner and says stop working on this, it's already been solved. So you go from 100 miles an hour to 0 suddenly, and you get a new piece of work and you're supposed to restart and go straight back up to 100.

The test software, the BFGMiner that was referred to earlier, apparently does not do that. So you can't test that.

That's a very common occurrence on the live network. So the company's conclusion is that if it were able to use test software, it would not give an appropriate picture of what happens in the real world. It's an academic exercise. It's theoretical, not real.

And as a result, what would happen is that a larger percentage of the units that were sent out to consumers would come back as defective, larger percentage than what happens if you test on the live network.

THE COURT: So you decide because of that very reason to test live?

THE WITNESS: Yes. And it's more focused on customer service than it is on accumulating Bitcoins because we want our equipment to be seen as totally reliable, can be counted on to work.

THE COURT: So you can handle that 100 to 0 back to 100, that's why you would test live?

THE WITNESS: Yes. That and other aspects. But that's one aspect.

THE COURT: Okay. And I guess the aspect that came up in testimony is doing that live, could you still prevent it from being broadcast so you would have the ability? That's my question, and you may not -- and that's fine.

THE WITNESS: I think I can answer that. And the answer is no. You can't do it -- the only way to get that new

piece of work is to broadcast it live to the network so the network can say this has been solved, here's your next piece of work. So you can do that proof of work, you have to be given the next one, and unless you're on the live network, you can't be given that next one.

THE COURT: Okay. Thank you.

MR. HUMPHREY: Thank you, Your Honor.

Q (BY MR. HUMPHREY) Let me make sure the record on this point -- I want it to be in the record, and I can't remember where we left off. I don't want to go backwards, but let me just revisit this one issue.

In terms of the burn-in testing, I was asking you, Mr. Bourne, about describing the process and where that happens and when a product is identified to a customer. Could you describe that to the court, please?

A I can. Unlike, you know, if we -- the point at which we identify these units to a customer is when it's ready to go into a box and we have a shipping label put on it and sent out the door just like if you see the, you know, Amazon warehouse where the box is going down the conveyor belt and people are pulling things off the shelves and putting them into the box, and that's the point at which it belongs to the consumer, where it's identified to a specific consumer. We manufacture these in, you know, by the hundreds per day. When we were at the peak of shipping, we actually shipped over a thousand per

day.

We would build these and they weren't built, you know, this one for Joe and this one for Sue and this one for Bob. They were built as many as you could build, and then our -- these were all built, tested, ready to ship out. And the customer service department would say, well, here's the next 50 people in the order queue, print a shipping label for each one, take one of these identical units, and put it into these boxes and ship them out to those various people.

Up to that point, up until it was tested, it wasn't finished, and until it was finished and ready to go out, it wasn't identified to -- I mean, immediately ready to go out, it was not identified to a specific consumer.

Q And by immediately ready to be identified, you're saying ready to ship to a specific customer?

A Same day. I mean, going into the box with the label, sealing the box, and putting it over here for Federal Express or the post office to pick up.

Q How did you determine who would be in line or the next customer that would be -- the product would be shipped to?

A Based on the order in which -- based on the sequence in which the customer orders were received actually in which they were paid because if someone submitted an order but didn't pay for it until several days later, they fell lower in the queue than someone who placed an order right behind them but paid

immediately. So we did it based on the paid date of the order.

Q And I've referred -- I've heard that referred to as the queue, the order queue; is that correct?

A That's right.

Q Okay. Are you -- is Butterfly Labs going to take preorders from customers going forward?

A No.

Q Does the business need preorders?

A No.

Q You say no. In your view why is it that the company doesn't need preorders to go forward?

A We have -- thinking back on that pie chart of repeat buyer behavior, we have customers who have previously purchased and used and are happy with the products. We would expect that those customers would come back and buy again. We believe that the company is effective at marketing its products, has good, quality products that are thoroughly tested and are reliable when you send them out.

So we believe that that past history, the actual performance of the machines would lead to those sales. The other aspect of it is that the company is large enough now to be able to manage itself. We've already prepurchased parts that are required to build thousands of new units, so we've already invested the funds in building the components to

manufacture the machines that would be sent out. So we don't need to take preorders.

Q Okay. Thank you, Mr. Bourne.

You understand that the FTC is claiming that a preliminary injunction would be in the public interest?

A Yes.

Q Okay. And as part of the public interest -- you know that there were customer complaints, correct?

A Yes.

Q And in fact in addition to the -- some of the Sentinel complaints we looked at earlier, we've seen -- you've seen declarations of customers who are complaining that have been submitted by the FTC; is that correct?

A Yes, I have.

Q And in fact is one of those very declarations in your notebook and marked as Exhibit 508?

A Yes. 508 is a declaration from a customer who was not happy with his outcome.

Q Okay. And that -- you've seen that declaration because it's part of the FTC's papers in this case; is that fair?

A I have.

Q Have you reviewed this declaration?

A Yes.

Q And Mr. Lefebvre, he has some not-too-kind things to say in the declaration, fair?

A I'm sorry, can you repeat?
Q I absolutely can. He has some not-too-kind things to say in the declaration; is that fair?
A Yes, it is fair.
Q Okay. Let's talk a little bit, though, about Mr. Lefebvre's order in connection with this lawsuit. Okay.
Mr. Lefebvre, he's complaining about the failed delivery of a unit, correct?
A Two units.
Q Two units?
A Yes.
Q Can you describe what he's complaining about briefly to the court?
A He placed two separate orders, one for a 600 gigahash machine. He refers to it as a card. And then later he placed an order for a 300 gigahash card or machine, and those -- the dates we have for his orders are different from the dates that he references. But he describes a September order and an October order, neither of which had been delivered by the time he executed this on September 25th.
Q Okay. So this was executed on September 25th and the lawsuit was filed September 19th, 2014, correct?
A That is correct.
Q Okay. Tell me if the -- Mr. Bourne, based on Mr. Lefebvre's records with the company and your review of

this, tell me what would have happened with Mr. Lefebvre's order had the FTC not filed the lawsuit that they filed?

A Our practice with the Monarch machines is that when we're ready to ship a machine to a customer, we e-mail them and ask them sort of -- this is your final answer, do you want us to ship the machine you ordered, or would you like a refund, or would you like the machine you ordered and a rebate because we are actually making rebates.

So with Mr. Lefebvre, we e-mailed him to ask that question, and on September 17th he responded to that e-mail and selected that he would like to have his original machine -- I'm sorry, he would like some of the upgrade that we offered him, that machine, the upgraded machine to be sent to him, and the remainder of his dollar amount of his order rebated to him.

Q Can you tell me what was the company's plan for that request?

A He responded on September 17th, and on September 18th his order was sent from the customer service area to the shipping area to have a machine pulled from a rack, placed in a box, and sent to Mr. Lefebvre.

Q And can you tell the court where that stands today?

A Yes.

Q As far as you know.

A That information was transmitted on the 18th and would

have been processed on September 19th, but on the 19th the FTC came to Butterfly Labs and closed the company down.

Q And is it your testimony, Mr. Bourne, that had the FTC not come and closed the company down, that Mr. Lefebvre would have received his unit through shipping of that unit that day?

A We would have shipped it on the 19th, on the 19th of September.

Q Okay. Now, let's just -- that's one customer, but let's talk a little more globally about the shipping status on other Monarch orders. Can you describe the status of that to the court?

A Yes. The company has not shipped a Monarch since September 18th of 2014. All orders have been -- anything manufactured is still sitting at the facility not sent out, and we have not tested any new units, which means there are no new units ready to be shipped out beyond the ones that were built and tested by the 18th of September.

Q Okay. And the company was shipping Monarchs prior to September 19th, correct?

A Yes, it was.

Q And the company was processing customer orders with requests for refund order confirmation, rebate, et cetera, correct?

A Yes.

Q Okay. And how about the refunds, was the company

processing refunds prior to this lawsuit?

A The company had paid over $12 million in refunds during 2014.

Q And just generally -- understand this may not be possible, but just generally if you can, Mr. Bourne, describe the status of the refunds to customers for the court.

A At this point refunds are on hold and have been since September 19th.

Q So no refunds are being made to customers?

A That's correct. We are recording for those customers since the 18th of September who have e-mailed the company and said I want to request a refund. We have logged those, just like we were doing before, but we have not disbursed any funds.

THE COURT: Okay. I'm just not clear on something.

So what you're suggesting or at least what I thought I heard with respect to that particular machine is that most of the refunds or those machines were shipped to customers. I guess what I want to know ultimately is how many refunds are there outstanding? You said to the one. I know you were talking -- let me try and be clear here.

For the machine, I think the one in Exhibit 506, you were saying refunds have been made or the machine has been shipped to consumers except for some that you --

THE WITNESS: Right. With a few exceptions. That

covers this generation so it's --

THE COURT: I'm talking about other generations beyond that.

THE WITNESS: Beyond that --

THE COURT: What are we looking at? Are those what we referred to in 2014, where you have paid that, is that the Monarch?

THE WITNESS: This is the Monarch and that's right.

THE COURT: So you're saying up to this point of September, $12 million in terms of refunds have been paid?

THE WITNESS: Against this -- orders for this machine.

THE COURT: Okay.

THE WITNESS: Yes, sir.

THE COURT: Okay. Thank you. I just want to be --

MR. HUMPHREY: Absolutely, Your Honor. Any further inquiry?

THE COURT: No, I don't think so. I apologize again.

MR. HUMPHREY: No, no. Please don't.

Q (BY MR. HUMPHREY) Let's just go ahead and address that, Mr. Bourne. Let's give an accurate, full picture of refunds provided. Will you provide the court -- maybe it would be best if you just simply provide an overview of the refund efforts of the company, refunds provided, total amounts to the

court.

A For the history of --

Q For the history of --

A For the history of the company.

So the first two generations of product, the FPGAs, which started off small and then got to suitcase size, for those, the company when they introduced the basic product, which is the third generation, the company took trade-ins of these units. Anyone who had purchased this unit was able to trade that in for full-price credit against a new piece of equipment. So they got all of their money credited back to them.

Then we went to the third generation, which are the ones like this, the Jalapeno, the single, and the MiniRig. For those in round terms, the company took about 35 or 36 million dollars of orders. It shipped $30 million of product, and it refunded $5.8 million against that line.

For the Monarchs, we've taken, as you know, our accounting is not complete, but between 28 and 30 million dollars of orders for Monarch. Out of that, we've refunded $12 million and there is between --

THE COURT: How many shipped? How many -- like we did, 36 million orders, 30 million shipped, 5.8 refund. So let's talk the same -- in the same way about the Monarchs. 28 million orders.

THE WITNESS: 28 million orders, let's say $12 million refunded, and out of -- oh, sorry, you want the shipped first?

THE COURT: I probably could calculate it but I just want --

THE WITNESS: We've shipped -- I say we shipped at least $2 million worth of those orders. We have a remaining unserved queue of about 14 million and then $12 million of refunds. So we're back to our 28. All right.

THE COURT: Okay.

Q (BY MR. HUMPHREY) Let me round this out real quick, Mr. Bourne, just to close the refund issue out. The company was making refunds as of September 18th, 2014?

A Yes, we were.

Q Had been doing so for some time, correct?

A Yes, correct.

Q And intended to do so going forward, correct?

A Correct.

Q And the need for those refunds and looking forward -- looking forward in the company's operations and the need to provide refunds on a looking-forward basis, tell me in view of the return rate of products, how does that fit into the company's plans going forward, the returns and satisfying -- I'm sorry, not returns. Satisfying refund requests, how does that look going forward?

A Up until September 19th, the company was later than it had projected or estimated or wanted to be with shipping these products, and our experience up until September 19th was when we went to a purchaser, immediately when we were ready to ship their product and we said to them one last time do you want a product or do you want a refund, about 50 percent of people took product, and 50 percent of people took refund. It was 52 percent, 48 percent, but let's call it a 50/50. At that time it was 50/50, refunds versus shipments.

Given that the company has been closed for the last two months, and, as Dr. Narayanan testified, the network difficulty has gone up, other competitors have continued to develop their products and we have not, we don't know when we reopen that process whether we're going to stick to the 50/50 experience of the past or whether 90 percent of people are going to say give me a refund because this product is now two months older than it was when you closed your doors.

So I can't exactly quantify, but I can say our historical experience with this product up until the middle of September was 50 percent refund, 50 percent shipment.

Q And let's just talk -- beyond that, Mr. Bourne, in terms of operating going forward with an order in-stock basis, not the preorder model, explain the refund issue in connection with that.

A Yes. It should be fairly simple. If someone places an

order, it will mean we have the goods built and on the shelf, and we should be able to ship immediately. So with mining equipment, if someone receives their equipment, mines with it, and then sends it back to you, that's one way to game the system. I'm expecting when if you place an order up to the day we ship it, you can request a refund, and you'll get it.

After we ship your equipment, if it's defective, we'll repair it or replace it, but we wouldn't be offering refunds after we shipped the unit because it's a machine for mining.

Q Well, in terms of offering refunds after that and tied to returns for faulty equipment or claims that it doesn't work like it's supposed to, what's been the company's experience in terms of customers returning it because it hasn't worked as promised?

A We've had a very low return rate on our equipment. The 65nm BitForce equipment has approximately now a 3-percent return rate.

Q And so, in other words, Mr. Bourne, is it your testimony that the machines that you manufacture and sell do what you represent they will do?

A Yes, they do. When we advertise, we advertise the speed that the equipment will reach. If you dig deeper beyond the order page, you'll find technical specifications that talk about power consumption for the machine within a range. All

we promise, all the company has committed to is to sell machines that hit certain performance specifications in terms primarily of speed. In fact on those banner ads we looked at, the only number you saw was the speed that it will hash at.

Q Okay. Very good. Let's move in to the next exhibit, and that, as you'll see, is Exhibit 509. It's entitled Temporary Receiver Eric Johnson's First Report. Do you see that, Mr. Bourne?

A I do.

Q Can you just tell the court briefly your understanding of what that is?

A This is the receiver's initial report, which was I believe submitted within ten days of the September 19th date. It was an initial assessment. It was a report of the receiver about actions he had taken and an initial assessment of some of the different aspects of the company. It was mostly about actions that had been taken. It was also -- contained recommendations to the court about how to move forward.

Q And there have been two reports issued, correct?

A This was the first of two reports.

Q Okay. This is -- in some portions this has redactions; is that correct, Mr. Bourne?

A Yes, it does.

MR. HUMPHREY: And acknowledging this is a redacted version of the first report, at this time, Your Honor, I would

move for admission of the redacted Exhibit 509.

MS. FRAZIER: No objection.

THE COURT: Defendant's Exhibit 509 shall be admitted.

Q (BY MR. HUMPHREY) Mr. Bourne, just quickly on Exhibit 509, looking at page 13, you'll see that there -- let me ask you there are a number of recommendations made in this report, correct?

A Yes.

Q And that's the temporary receiver's recommendations for the things that he proposes doing going forward; is that correct?

A Yes.

Q Okay. And you see in J there's a recommendation?

A I do.

Q And is that the recommendation as to evaluating whether the business can be operated lawfully and profitably?

A Yes. The last line of that section is about recommending a process for evaluating lawful-and-profitable operation.

Q Okay. You certainly, Mr. Bourne, you read this first report at or around the time it was provided?

A I did and when it was originally issued.

Q And when it was originally issued, that was before the stipulated interim order was entered, correct?

A Yes, it was, as I recall.
Q As part of the interim order process, did you -- was it your view that there would be an evaluation consistent with -- well, let me ask you, this says the temporary receiver at this point in time is unable to make a good-faith determination about whether the business can be operated profitably and lawfully, correct?
A Yes.
Q And then it says that the temporary receiver recommends a process for making that evaluation, correct?
A Yes.
Q And I just, Mr. Bourne, want to clear up for the record, make it clear for the record, rather, that no process has been recommended for -- to you -- do you know of a process that's been recommended for evaluating the company in terms of profitable-and-lawful operations?
A Not specifically. I mean, as part of the stipulated order, we delivered a business plan.
Q Understood. And then the second report followed that, correct?
A That's correct.
Q And I'll show you that second report, but do you know, Mr. Bourne, does the second report make any reference to profitable-and-lawful operations?
A As far as I know, it does not.

Q Does it make any reference to an evaluation of profitable-and-lawful operations?
A No.
Q Does it propose any process for an evaluation of profitable-and-lawful operations?
A No.
Q And just quickly, again, on page 16, if you would, of this first receiver's report, again, there's a reference to whether -- an assessment by the temporary receiver of whether BF Labs can operate lawfully and profitably, correct?
A Can you restate?
Q I can. On page 16 you'll see actually the section header, Section 7.
A I see it.
Q Temporary receiver's assessment of whether BFL can be operated lawfully and profitably. Do you see that?
A I do.
Q And we were just talking about that, but what I want to focus on, Mr. Bourne, is there's a reference in that first paragraph of that section. The recommendation of a restraining order remaining in place balancing the need to protect consumers with the preservation of the going concern value of BF Labs. Do you see that?
A I do see that.
Q It says BFL to be clear. But you see that, correct?

A Yes.
Q Mr. Bourne, in reference to the preservation of going concern value, was that something that you had read heading into the interim period?
A Yes.
Q And you had reviewed this again before you agreed to the interim period?
A Yes.
Q Okay. Now, I want to ask you in terms of preservation of the going concern value of BF Labs, Mr. Bourne, based on your education, your experience, your extensive involvement in business operations, as part of the receivership, do you believe that the going concern value of Butterfly Labs is being preserved?
A No.
Q And can you explain why that is?
A The going concern value for a business is largely tied to its market presence, its relationship with vendors, with customers, with employees, its standing in the competitive environment, and in our case here for the last two months the company's been closed. We haven't marketed. We haven't interacted with customers. We have had vendors who have either complained or flat told us they would not work with us.

We've lost key employees. So -- and we have not worked on continuing in a significant way manufacturing or

development of new products, so in the sense that essentially the company's been shut down largely. To the outside world we have not interacted. If -- to the extent there have been operations, it's been largely within the company except for paying bills. We have paid vendor bills, and we've certainly paid our staff to the extent that they've worked. But the going concern value of a company is highly dependent on going, and we have not been going.

Q And how does that compare to a liquidation value or a prospective liquidation value of a company?

A So on a liquidation basis you're essentially looking at the hard assets of the company, you know, desks and chairs, and equipment, inventory, bank accounts, anything that is salable for a dollar. The liquidation value is on a -- for a going concern company, the liquidation value is lower than the going concern value, but the thing that is the difference is that goodwill with customers, it's your relationship with suppliers, it's your employee base. Those sort of soft things that can't necessarily be sold are the key difference between going concern and liquidation.

Q And as we referenced, the temporary receiver did issue a second report, correct?

A Yes.

Q And do you see that marked in your notebook as Exhibit 510?

A I do.
Q And is that in fact the temporary receiver report, second report that you referenced earlier?
A I recognize it as that.
Q And it indeed also has a few redactions throughout, fair?
A It does, yes.
Q Okay.
MR. HUMPHREY: With that, Your Honor, I would move for admission of Defendant's Exhibit 510.
MS. FRAZIER: No objection.
THE COURT: Defendant's Exhibit 510 shall be admitted.
Q (BY MR. HUMPHREY) Quickly, Mr. Bourne, just to get this in evidence as well, Exhibit 511 you'll see is the business plan for Butterfly Labs; is that correct?
A Yes, that's correct.
Q And the business plan also has a few select redactions, fair?
A One moment. The copy I have, unless it's further back, can you direct me to any redaction?
Q I can. I'm actually looking for one right now.
A I'm sorry. Yes.
Q Page 12, for example.
A Yes, page 10 also. So, yes, there are some redactions

in the copy I have.

Q Okay. But acknowledging the redactions, this is a copy of the business plan prepared by Butterfly Labs during the interim period, correct?

A Yes.

MR. HUMPHREY: In light of that, Your Honor, I'd move for the admission of Defendant's Exhibit 511 as well.

MS. FRAZIER: No objection.

THE COURT: 511 shall be admitted.

MR. HUMPHREY: Thank you, Your Honor.

Q (BY MR. HUMPHREY) Mr. Bourne, could you tell the court why you agreed to an interim period in this case?

A The management team agreed to the interim period primarily so that after the initial ten-day shutdown, we could get back to serving customers, shipping product, making the refunds, and bring our workforce back to work. People had been out of work for two weeks at that point. We wanted to get back to operating the business.

Q And you knew that there would be a business plan aspect to the interim period, fair?

A Yes.

Q You did submit a business plan and this is it, right?

A Yes. We submitted it on time.

Q What were you trying to demonstrate, Mr. Bourne, through the submission of the business plan?

A Well, we wanted to fulfill the requirement to submit it under the order we agreed to. We wanted to document the various opportunities that are in front of the company and how the company management viewed those opportunities, what we intended to do with the business both in terms of growth and operations going forward. We really wanted to in a structured way get down on paper what was the collective thinking of the management team in addition to be able to put together a document that would guide us going forward for conducting our business after the interim period.

Q Okay. And did -- Mr. Bourne, just briefly can you describe the process for how the business plan was prepared?

A The entire management team participated. Different people took responsibility for different sections and did the initial drafting of their section. One of our management team members acted as the correlator and editor to get it into sort of a single voice, and I was the primary content editor.

Q And the efforts of the business plan, you understand that those efforts and this very business plan will be subjected to scrutiny beyond this lawsuit, correct?

A I do.

Q You understand that there's other pending litigation against the company; is that correct?

A I am aware of that.

Q And this is the laying out, bearing the soul of the

company in the business plan; is that fair?
A It was a hard thing to write knowing it would be public.
Q Okay. And that it would be used in further litigation probably against you?
A Yes.
Q Okay. Now, having issued the business plan, the temporary receiver then issues a second report, and we've had that admitted into evidence. Briefly Exhibit 510, can you tell me, Mr. Bourne, what was the -- you've reviewed the second report, correct?
A I have.
Q What was the company's reaction, the individual defendants, Mr. Vleisides and Ms. Drake, and what was the reaction to this receiver's second report?
A There was a high degree of disappointment that the business plan we had been -- had worked on sincerely and with a great deal of effort over a very short period of time was deemed not financially feasible; that the -- it appeared that any aspect of the business plan that wasn't guaranteed, couldn't be tied to a pre-existing commitment on the part of someone to buy or for us to be able to manufacture, that it -- those were discounted or were disregarded, and that it really went from -- we were disappointed that it wasn't about lawful-and-profitable operation. It appeared to be more about liquidation of the company.

Q Okay. And just let's go through a couple examples of that. The -- page 10, if you would.

A All right.

Q You'll see in the first full paragraph there's a reference to a financial services industry initiative. You see that?

A I do.

Q Understanding there's some redactions around that, Mr. Bourne, could you just briefly describe the nature of that financial services initiative.

A It's the U.S. financial services industry, an opportunity that the company has to sell its equipment into a nonBitcoin, completely mainstream industry for a different application of the technology with a very large existing financial industry participant.

Q And it says here that it does not appear -- the initiative does not appear to be reasonably attainable in the near term. Do you see that language?

A I do.

Q Do you agree with that?

A No.

Q What is your view, Mr. Bourne?

A Our information from this financial industry participant is that they are imminent in launching the initiative that would involve use of our equipment. There is not a contract,

but everything we're hearing from them is that this is a near term likelihood for them. Then there will take some time to negotiate a deal, but since our equipment would be at the core of what they plan to do, my expectation is that that will be a very near term following.

Q And there's some criticism in here of loaning unpatented technology without agreement of -- concern about reverse engineering and providing it otherwise to competitors. Did you see that in the report, Mr. Bourne?

A I did and I do.

Q What was your reaction to seeing that in the report?

A None of our technology is patented. This very same technology has been sold to thousands of people, and this particular financial services industry participant is not in the business of reverse engineering, producing mining equipment, producing SHA-256 equipment. It would be out of character for a company like this to reverse engineer it, to make it themselves, or to hand it off to a competitor. It just doesn't seem within rational behavior for a company of the size and reputation that this one is.

Q And the equipment that you provide to customers, theoretically that could also be provided to competitors and reverse engineered, correct?

A Yes.

Q There's a reference to a lack of written documentation

in connection with this financial services opportunity. Mr. Bourne, are you aware of any written documentation of the opportunity?

A Yes, I am.

Q Okay. And just we'll look at that in a minute, but briefly describe what you're aware of in terms of written documentation.

A There's multiple e-mails between the point of contact at this financial services industry participant and a member of our client service team, one of our management team members.

Q And in here, finally, there's an indication that a request made by Butterfly Labs to not independently -- for the FTC to not independently confirm this initiative or opportunity, if you will. You see that in there, Mr. Bourne?

A I do.

Q Tell me -- you made that request, correct?

A I did.

Q That was during your deposition, the -- not yours, but the Rule 36 deposition of Butterfly Labs that you were the corporate rep?

A I recall it.

Q Let me ask you, Mr. Bourne, why is it that you made that request? Was it to hide this from the FTC or --

A No, certainly not. I've been in business for nearly 30 years, and there are always opportunities and there are

opportunities to lose opportunities. And there aren't a lot of really potentially significant things that come along for a small company that can make all the difference for that company in terms of size, in terms of ability to enter a new market. And those opportunities, they're few and far between, and they can be fragile. So to the extent that anybody or anything interferes with that, I'm -- personally I'm sensitive to that, and on behalf of the company, I was and remain sensitive to that. So my request was strictly around preserving the likelihood that that opportunity would come to fruition. It was not to hide anything.

Q Were you trying to hide it from the temporary receiver?

A No.

Q In fact, did you voluntarily disclose the opportunity to the temporary receiver without even being asked?

A Yes. I mean, we -- it was part of our business plan. We submitted it.

Q And even going back before that, inquiries -- there were a number of inquiries from the temporary receiver. You made an effort to respond; is that fair?

A Yes.

Q Now, a couple other small points in this second business or the second receiver report. If you'll turn to page 16. We can hit on this quickly, Mr. Bourne. You mentioned the liquidation versus going concern value, and you'll see on page

16 there is a discussion of liquidation. Do you see that?
A I do.
Q Okay. Is that part -- let me just -- we mentioned the second report and the references to the liquidation issue, liquidation value. Tell me what your reaction was to seeing this in the report.
A Having throughout my business career participated in developing business plans, budgets, forecasts, and in cases where I've been the chief financial officer, often reviewing the work of others and challenging that, in my experience most people try to sandbag a plan. They try to put low numbers in so that their targets would be low and it would be easy to get -- to reach those targets, and typically a person reviewing a plan is pushing for more. I know that's been my role largely as a CFO.

This plan is not oriented that way. It is almost the opposite. It seems to be more oriented towards what you're stating you can achieve, I don't believe you can, these aren't realistic, and, therefore, the plan is not a good plan. And in the alternative, the fallback is what could we get to -- for selling off the hard assets.
Q Okay. And the page 18, the last page I'll have you look at, Mr. Bourne, in the second report, there's a reference there to proposals and aggressive pursuit of a new business model and a lack of additional capital. Do you see that?

A I do.
Q That's an observation regarding management team and corporate oversight; is that correct?
A It is in the section, yes.
Q What was your reaction, Mr. Bourne, to seeing the note on the aggressive pursuit of a new business model and the lack of additional capital in the receiver report as criticism?
A It is a -- the business model going forward is what we're using today, which is no preorders, making refunds. There are some new business lines in this business plan, but they are all things that are being worked on with the exception of the 16nm. That actually would be something new. But it's consistent with past performance of the company continually developing new products.

So the aggressive pursuit of a new business model, I would -- aggressive in the sense that the company's embraced it but not aggressive in the sense of unrealistic pursuit of a new business model. And in terms of financing, we within the short period of time that we had to prepare this plan, going out and seeking financing under the cloud of an FTC closure wasn't very realistic to go out and actually secure financing.

So with time, financing external could be achieved. Financing internally through operating profitably is another way to finance business. There isn't -- there isn't an easy way to say there isn't financing in this business plan and,

therefore, this business plan is not realistic.

Q Mr. Bourne, you understand as part of the stipulated interim period you've been around a number of professional -- hardworking professionals, fair?

A Yes.

Q And this isn't a simple case; is that fair? There are complex parts to it. Bitcoin mining, Bitcoin mining equipment, Bitcoin in general is a newly-emerging technology, lots of issues, novel issues, new issues. Is that fair?

A It's a complex industry, and this equipment is complex to assemble, to design, and then manufacture involves, you know, dozens of different vendors that make parts that are assembled into this.

Q Okay. And recognizing that this is, you know, an issue I want you to address for the court, the first report is issued, the second report is issued. You issued your business plan, and we have some information today about the cost of the temporary receivership to date.

I just want to get your reaction, Mr. Bourne, to the -- your concerns if you have them about what that means going forward for the future of the company, what the first and second, third quarter have resulted in and where things stand right now.

A The -- we went into the interim period thinking that we were going to operate on a limited basis but that that

involved making and shipping equipment to customers, making refunds -- well, in fact not refunds because that was precluded in the interim order.

We didn't end up doing that, so it was disappointing that we haven't. The whole staff is disappointed that they haven't been able to come back and do with our customers what we had done before. The business plan I think was a good effort at putting together a road map for the near term future, and it was disappointing that it wasn't accepted, deemed realistic.

The cost of the receivership, when I -- when I saw that, I thought, wow, for a 60-day period, this is a lot of money. Then I realized it was not for a 60-day period, it was for a six-week, 42-day period. If you extrapolate from that period to today, we're at a million dollars. What occurred to me when I realized that is that a million dollars is hundreds of customer refunds.

It is 60 percent of all the payroll we paid our entire staff for all of 2013, and it is more money than our business plan projects to make next year. So I think it's already been -- it's been -- it's going to be a burden for the company to carry that.

Q Okay. Mr. Bourne, just a few --

THE COURT: What do you mean a burden to carry that exactly?

THE WITNESS: To bear that cost.

THE COURT: On an ongoing or bear the costs just up to this point is what you're saying?

THE WITNESS: Up to this point. And if it were to continue, that burden would not get lighter.

THE COURT: Right. Okay.

Q (BY MR. HUMPHREY) You said, Mr. Bourne, earlier that the business plan, we've discussed the business plan, it was an effort to describe the future of Butterfly Labs, and it was an effort to describe to the court the future of Butterfly Labs; is that fair?

A Yes.

Q And is BitSafe a part of that future?

A Yes.

Q Okay. I'm going to ask for leave to approach, hand you an exhibit. While I do, would you just explain to the court what is the BitSafe opportunity?

A So all morning we've been talking about mining equipment, but there's a larger opportunity for people who have Bitcoins whether they've mined them or they've purchased them, and essentially this BitSafe is a -- it's a digital wallet. It's a hardware wallet for storing Bitcoins and for spending Bitcoins.

So the way it works today is that people go online, they create what's called a software wallet, and your Bitcoins

are directed into this wallet. To the extent that's -- that software wallet exists on the internet, it's subject to being hacked and your Bitcoins stolen. It happens a lot.

This is a way to take your Bitcoins offline, carry them around in your pocket, and to the extent you go to a vendor who will accept Bitcoins, to use this, to spend those Bitcoins or transfer Bitcoins between you and I directly without having to be at home at your computer.

So this is -- whereas mining has a large but relatively finite market of people who are interested in being miners, this would be salable to practically anybody who wanted to use Bitcoins, whether they were interested in mining or not.

Q Mr. Bourne, we have a couple more items just to address here before we close out.

But Defendant's Exhibit 513, would you look at that, and in light of discussions about the future, are there any other opportunities you'd like to make the court aware of at least for today's purposes about the future?

A Exhibit 513 relates back to the financial services industry opportunity we were talking about, and this is written documentation of interaction between that financial industry participant and Dave McClain, who is a member of our team, and it talks here about that entity wanting to do an SHA-256 transaction verification proof-of-concept project. So

this is what we were referring to when we looked at -- when we talked about that subject a few minutes ago.

Q Okay. And this has redactions on it, correct?

A Yes, it does.

Q But in light of those redactions, otherwise, is this letter of intent, it's addressed to you, correct?

A You meaning Butterfly Labs?

Q Well, it's to Dave McClain and your name is on it as well?

A Yes, yes, that's right.

Q So this is the letter of intent you've referenced earlier involving this financial transactions opportunity, correct?

A It's -- I don't think I call it letter of intent by name, but it is the written documentation.

Q Okay. Fair enough.

MR. HUMPHREY: With that, Your Honor, I'd move for admission of Defendant's Exhibit 513.

MS. FRAZIER: No objection.

THE COURT: Defendant's Exhibit 513 shall be admitted.

Q (BY MR. HUMPHREY) Looking at Exhibit 513, Mr. Bourne, a couple of questions. Do you see a reference in there to the first phase is to bring the machines in for burn-in period?

A I do see that.

Q Is that Butterfly Labs saying there will be a burn-in period?

A No. This is the entity on the other side saying that they are going to have a burn-in period with our machines.

Q Did that surprise you to see that?

A No.

Q And why is that?

A It's standard with electronic equipment.

MS. FRAZIER: Objection. I don't believe that Mr. Bourne has the technical knowledge to say what type of burn-in testing that this would be or it's testing at all. It might just be a term of art that's used in the communication.

THE COURT: Is that his expertise?

MR. HUMPHREY: His expertise is he has an expertise in the industry. He has industry experience.

THE COURT: He has industry expertise. We talked about the burn-in in particular because he suggested to me when I asked questions. I don't know if it's in this particular -- I think industry, yeah, there's no doubt he has -- I'll sustain it, but I --

MR. HUMPHREY: Okay. Fair enough, Your Honor. We'll move on.

THE COURT: Yeah.

Q (BY MR. HUMPHREY) Mr. Bourne, in -- when there's a discussion about the SHA-256 transaction verification, do you

see a reference there to whether this is for part of the transactions, few transactions? What's the reference there, Mr. Bourne?

A It says the goal of the proof of concept is to create justification for SHA-256 transaction verification on all of this institution's financial transition -- it says transitions, but it actually should be transactions.

Q Okay. Fair enough. Finally, there is a reference in this letter to the proprietary nature of some of the details of the project, correct?

A Yes.

Q And that's not -- again, that's not something that you wrote, the company wrote. That's coming from this financial services industry company?

A That's correct.

Q Okay. We've already talked about whether the company will realize preorders going forward. Preorders, the preorder model, that was used by Butterfly Labs' competitors, correct?

A It has been used by most of Butterfly Labs' competitors that I'm aware of.

Q Okay. So that was the industry you were competing in at the time, correct?

A Yes.

Q And, again, are preorders a part of the company's future?

A To clarify, not with respect to consumers.
Q Good clarification. What do you mean by that?
A Well, in the event that this financial industry participant wanted to buy a thousand machines, we would ask them to prepay for at least some portion of that, but that would be a nonconsumer transaction.
Q Okay. And how about representations about the amount of Bitcoins generated or profitability or return on investment, is that a part of the company's future?
A It's not a part of the future, and it hasn't been part of the past. The company before I came to work for Butterfly, in my due diligence process, I asked about, well, how do you sell, what do you sell based on, and I was told by Mr. Ownby and Mr. Vleisides that we sell based on the performance of our machines, the speed and the energy consumption. We do not -- we stay completely away from advertising a specific number of Bitcoins or a dollar return because the company can't control that.
Q Okay. And is it fair to say, Mr. Bourne, you have optimism for the future of Butterfly Labs?
A I have less optimism now than I had two months ago, but, yes, I still think there are bright opportunities in front of the company that are realizable.
Q Okay. And you know that the temporary receiver and Rubin Brown, the consultant for the temporary receiver, they

don't share that optimism about the future; is that fair?
A Based on the reports, I would say, yes, that's fair.
Q And based on your education and experience, do you agree?
A No.
Q And why is that?
A I've been part of a lot of different organizations, whether as an employee or a consultant, and I have seen or participated in a number of them growing very dramatically over short and longer periods from $700 million to $2 billion in one case and from $10 million to over $100 million in another case. So when you have realistic plans, you set people targets, you give them incentive to work hard to achieve those, it doesn't always come together, and there is some degree of risk. But generally business is based on some degree of risk taking.

It's not -- in large part it's not guaranteed. Yes, there are long-term government contracting companies that have kind of an assurance, but in general, business is about taking calculated, reasonable risk and doing the best you can to mitigate that going forward.
Q And, Mr. Bourne, there was a reference in the evidence earlier in FTC's case about bitcoinx. Are you familiar with that issue, website?
A Yes.

Q There was a discussion about the role of bitcoinx during Mr. Fast's testimony. Let me ask you, Mr. Bourne, what is your understanding, having worked with the company, about the role of bitcoinx and representations about calculating profitability, return on investment?

A The company has several website properties that are used as a way to funnel people who are interested in Bitcoin to advertisements about the company's products, so it's really a marketing tool. The calculator is something that exists for consumers or other potential buyers for that matter to input their assumptions about a variety of different parameters, to experiment with under different scenarios what their experience in mining Bitcoins might be.

Q Are you concerned, Mr. Bourne, about the issue of representations -- let me ask you this way. Is it important to the company that it have bitcoinx calculator available to support or encourage sales of the products the company offers?

A Not at all.

Q And why is that?

A We don't sell. I mean, if you look at -- you look at any of the advertising for the company, none of it references how many Bitcoins you'll make. We had a competitor who ran an ad that said easy money. You don't say -- you will not see that from Butterfly Labs. We don't advertise anything other than this machine will do 50 gigahash per second for an

example. So we don't need -- haven't needed in the past assertions of profitability to be able to sell the equipment.

Q Okay. Mr. Bourne, are you concerned -- based on what you know about the company and the people at the company, are you concerned about the destruction of evidence in this case?

A No.

Q Are you concerned about the dissipation of assets in this case?

A Not as a result of any action by Butterfly Labs.

Q And in fact, Mr. Bourne, on the very first day of this receivership, September 19th, 2014, Butterfly Labs voluntarily surrendered a Bitcoin wallet for approximately $10 million; is that right?

A Closer to 11 on that day, I think, but, yes.

Q Okay. Fair enough. And in terms of just giving the court a description of -- what that means in terms of needing someone to come in and account for assets and secure assets, what does it mean that the company surrendered that Bitcoin wallet in that amount on that day?

A I mean, I think it's a demonstration of good faith, that we intended to cooperate fully at that time, and up to that point weren't -- weren't hiding assets. And given that we are already under various levels of scrutiny for other legal issues, we don't -- we haven't done anything to hide that kind of thing in the past and have no intention to do so going

forward.

Q In fact, you've circulated a preservation notice in connection with other litigation at the company, correct?

A I have.

Q What's the level of cooperation been on that?

A My belief is it's been 100 percent. I certainly personally talked to each member, each custodian who received that, and talked to them about it, worked with your firm to develop that and make sure that we handled it properly. So as far as I know, we have complied with both of the two notices that we circulated.

Q Okay. And in closing, couple last questions, tell the court what you think of the Butterfly Labs' management team.

A I think very highly of the management team. I've worked with a lot of different groups, and this group is dedicated to innovating within the industry. They want to be leaders in the industry. The company's reputation and the way it's portrayed in the press and publicly is not something that the management team is happy with. Their focus in bringing -- frankly, in bringing me in and at least one other member of the management team, who's an outside consultant, is an effort to try to right the ship in terms of operating in a more structured fashion, in a more corporate fashion, in a way that will enable it to progress going forward, and I respect the management team a lot for taking those steps.

Q And how about in particular Mr. Vleisides?
A I like working with Sonny. He's an interesting guy. He's a humble guy. He does not hide his past when in most cases I would think it would be something people wouldn't want to talk about, and he just wants to build products. He is a guy who comes up with all kinds of ideas. His -- what he wants his role in the company to be is just to focus on what can I do next, what new creations can I make that people might get some usage out of.
Q Are you concerned about from what you know Mr. Vleisides or Ms. Drake dissipating assets or destroying evidence?
A No. I've worked with both of them for over a year, and I haven't seen any indication that either of them would do that.
Q Finally, Mr. Bourne, on the topic of the receivership that's been in place, if the receivership were to continue in this matter, what's your position -- your -- what's your position on going forward? Would you work with the receivership? How does that play out for you?
A I'm -- as we said before, I'm a consultant to the company and currently on a contract that expires tomorrow, and we haven't been doing what I -- we haven't been doing what we were doing up to September 19th, and we haven't been doing since then what I thought the company or I were going to be doing. As it's currently structured --

THE COURT: How did you not know that on this stipulated interim order? How did you not know what you would be doing? That's set forth, what you would be doing.

THE WITNESS: Okay, Your Honor. The stipulated order says that we would be able to ship equipment. We would be doing limited operations. We were going to have a conversation about burn-in testing which would allow us to if we satisfied the receiver, we would be able to then manufacture and test new equipment ostensibly for continued shipment.

So my perception of it was that it would be more outward-facing activity and that my role would be a little more oriented towards decision making and coordination with the receiver as opposed to seeking approval to do things and justifying things that the management team wanted to accomplish around communicating with employees, communicating with customers, or conducting its manufacturing operations.

THE COURT: So is the suggestion that the receiver took this and turned it with their particular -- you know, I find it hard. There is some consultation of the court in terms of -- there could be a report out there that you don't disagree that the court maybe suggested they take a conservative approach, but that business plan and what the court has to determine have really nothing to do with each other. Would you agree or not? You made some kind of --

sometimes business and the law don't necessarily agree on certain things.

THE WITNESS: Yes.

THE COURT: But my point is this: What the court has to respond to may not even affect the business plan or anything subsequent to that if I make some finding based upon the law as I believe it to be.

THE WITNESS: With respect to the issues today?

THE COURT: Yeah, yeah.

THE WITNESS: Your Honor, I think that's right. I'm not an attorney by any means, but I would agree that your finding about preliminary injunction and whether that was warranted does not --

THE COURT: With respect to the direct issues here. Now, what the receiver did is partially as an arm -- he's acting as an arm of the court, and the court wanted some certain information back from him so the court can have it and rule in a reasonable and responsible way. That may not necessarily agree with a business plan. I understand that.

Ultimately the court can make a decision notwithstanding that, and depending on what I do, you could have -- not issue a preliminary order and you're off on your way, correct?

THE WITNESS: I believe that's correct, Your Honor. I believe Mr. Humphrey was asking me what my role would be

going forward and whether I was interested or willing to continue working under the current structure.

THE COURT: Maybe that's better addressed with Mr. Humphrey. I think we're going far afield. We're starting to -- we're too far.

MR. HUMPHREY: Fair enough.

THE COURT: You know what I mean?

MR. HUMPHREY: I do. If we don't need to address that now, if it's premature, I just -- Your Honor, it's in the interest of a record of the focus of the receiver should have been going forward, but, Your Honor, I appreciate your position.

THE COURT: Mr. Bourne, I appreciate your position, and I understand what your position is with respect to it.

Can I ask one question though? Was there a way to proceed in a manner that you want to proceed and still protect maybe the refunds? Could you see that, some limited form where you could proceed how you want to proceed? Could you see that?

THE WITNESS: I believe --

THE COURT: Is there a --

THE WITNESS: I believe there is, Your Honor.

THE COURT: Where you can see you wouldn't -- growing concern value, you would be able to do, Mr. Bourne, expertise in terms of this company and run this company or

assist in running this company, but yet ensure the other? Is there a way to do that?

THE WITNESS: I believe so, yes.

THE COURT: Without this receivership or kind of what's in place now?

THE WITNESS: Yes.

THE COURT: You would rather that have been the case two months ago probably?

THE WITNESS: Yes, I would.

THE COURT: I just want to be fair to you.

THE WITNESS: Your understanding is correct.

MR. HUMPHREY: Your Honor, you have been fair with him, and with that I'll -- that's all the questioning I have.

THE COURT: Let's take a quick break, maybe 15 minutes. I'm assuming, Ms. Frazier, you're going to be doing cross-examination.

MS. FRAZIER: Yes, Your Honor.

MR. GRIFFIN: I'll have one question.

THE COURT: All right. Mr. Griffin, I appreciate the fact that you're very courteous and raise your hand.

MR. GRIFFIN: I can do it later.

THE COURT: We'll do it later and I'll follow up with you. Let's take a 15-minute recess.

(A recess was taken.)

THE COURT: Okay. Thank you.

BRUCE BOURNE, previously being sworn, resumed the stand:

THE COURT: Mr. Griffin.

MR. GRIFFIN: Thank you, Your Honor.

CROSS-EXAMINATION BY MR. GRIFFIN:

Q Mr. Bourne, can you please describe Mr. Ghoseiri's role in the company.

A Mr. Ghoseiri is -- he's one of the cofounders of the company. He is the principal engineer of the chip design and printed circuit board design.

MR. GRIFFIN: Thank you. That's all I have.

THE COURT: Okay. Thank you.

MR. HUMPHREY: Your Honor, I'm sorry. As a housekeeping matter, I did want to take up just a couple of the exhibits on the exhibit list. Defendant's Exhibit 502, the chart -- generation chart; Exhibit 504, the banner ad advertising samples; 505, the repeat customer behavior chart; 506, the FTC complaints chart; and 507, the production lag analysis chart, we would move at this time that those be admitted into evidence as well.

THE COURT: Any objections?

MS. FRAZIER: We have objections to the admission of Exhibits 505 to 507. We don't have the underlying data for any of these numbers, and so we don't think that they're sufficiently reliable to be admitted into evidence at this point.

THE COURT: What do you say to that?

MR. HUMPHREY: I would say we haven't been able to engage in full-blown discovery. These have been prepared in the stipulated interim period using a way to illustrate his testimony too, Your Honor, but I do think that it gives -- it fulfills his testimony in explaining it and putting it into context. I think it's an important part of the record.

THE COURT: Okay. Well, why don't we do this, Ms. Frazier, I'm going to admit all the exhibits, even 505, 506, 507, over your objection, but I'll allow you to question him with respect to that and give it the weight it deserves.

MS. FRAZIER: Certainly, Your Honor.

THE COURT: Ms. Frazier, cross-examination.

CROSS-EXAMINATION BY MS. FRAZIER:

Q Good afternoon, Mr. Bourne.

A Hello, Ms. Frazier.

Q So prior to your time at Butterfly Labs, you never worked for a chip manufacturer, did you?

A No, I did not.

Q And you're not a software engineer?

A No.

Q Or a computer scientist?

A Correct.

Q So your knowledge of the chip manufacturing process has come from your experience working at Butterfly Labs?

A Yes.
Q And Butterfly Labs advertised that initial product delivery for the 65nm products would occur in October of 2012; is that correct?
A The initial advertising occurred or that was the projected delivery date?
Q Initial projected delivery date.
A It was the initial projected delivery date.
Q And that announcement was made in June of 2012?
A I believe that's correct. I wasn't with the company until September of '13, but I think that's right.
Q So September 2013 would have been about 11 months after the initial product delivery was promised, correct?
A It was scheduled for, estimated. I don't believe it was promised.
Q Oh, sure. But announced, let's just say announced?
A I would agree with announced.
Q So you have no firsthand knowledge of complaint -- consumer complaints during that 11-month period prior to your tenure at Butterfly Labs?
A Other than reviewing the records, correct.
Q And no firsthand knowledge of consumer refund policy?
A Firsthand knowledge, no.
Q And no firsthand knowledge of the cause for the delays in delivery of the 65nm products?

A I was not at the company at that time so not firsthand knowledge.
Q And also no firsthand knowledge of whether the projected delivery dates were in fact reasonable?
A That one's a little harder for me to say.
Q But you weren't there during that time to observe the production process?
A I was not.
Q Sir, during your time at Butterfly Labs, you haven't been based in Kansas City?
A No. I travel here extensively.
Q So you're based in San Francisco; is that correct?
A With apologies to the Royals fans in the room, yes, I am.
Q Well, they skunked the Orioles.
A Good point.
Q So prior to the entry of the temporary restraining order, you weren't in the office every day to observe what was going on?
A No.
Q You were there maybe a few weeks out of a month?
A Yes, two to three weeks a month.
Q And currently you're doing consulting work for Butterfly Labs, correct?
A Yes.

Q And Butterfly Labs is your only client?
A They are currently.
Q So if the company were liquidated, you would lose your only client?
A I would.
Q So you testified earlier that you -- you're the acting chief financial officer in addition to doing other management duties at the company, correct?
A Yes, I did.
Q So it's your job to oversee the bookkeeping function at the company?
A Yes.
Q When the TRO was executed, the company's books and records weren't up to date, were they?
A No, they weren't.
Q And the receiver brought in Linda Freeman and another member of her team and from MarksNelson to bring the books up to date?
A We had engaged Linda Freeman and her team from MarksNelson to bring the books up to date prior to entry of the receivership.
Q And when was that?
A They completed the 2013 accounting on I believe August 29th of 2014, and the following week I had a meeting with the MarksNelson people and our internal staff accountant as well

as an external person that I was engaging to help us bring 2014 current. So the first week of September was when we launched into 2014 accounting.

Q But 2014 accounting is not up to date at this point?

A It's up through September 30th, I believe. They've brought it to September 30th at this point.

Q And in your capacity as acting CFO, you oversaw Linda Freeman's work for the company?

A Yes.

Q And she's not an auditor, is she?

A She's a partner at the CPA firm, so I don't -- her primary practice is a tax practice.

Q But not auditing?

A As far as I know, no.

Q So she didn't audit the company's financial statements?

A No. The company has no audited financial statements.

Q And she didn't conduct compilations?

A Correct.

Q And she didn't conduct an internal control review?

A No.

Q And so during your time at Butterfly Labs, none of these activities have been performed; is that correct?

A That is correct.

Q So as -- even though you're an acting CFO, you don't have sole signatory authority on the company's financial

accounts?
A I don't have any signatory authority on any of the company's accounts.
Q So defendant Vleisides has signatory authority, though, correct?
A He does.
Q And Dave McClain?
A Yes.
Q And Darla -- or, I'm sorry, Jody Drake?
A Yes.
Q So they could use corporate funds for nonbusiness purposes and you couldn't stop them from doing that?
A I would say that's true.
Q So I'm going to turn your attention to the declaration that was submitted as a part of I believe it was the supplemental evidence, Document No. 155-3. It was the declaration that you submitted on behalf of the company.
A Am I supposed to have a copy of that?
Q It's not necessary right now.
A Okay.
Q Just letting you know.
A All right.
Q So you testified in paragraph 19 of the declaration that most of the purposes -- I'm sorry -- most of the purchases referenced in the FTC's TRO application were valid business

expenses?
A I'm sure that I did.
Q But day care expenses for defendant Vleisides' children wouldn't be valid business expenses, would they?
A No, they wouldn't.
Q And nor would the purchase of an Audi A8 for $66,000 be a valid business expense?
A I would disagree with that.
Q On what basis?
A On the basis that lots of small or large privately-held companies -- lots of companies of any size own corporate automobiles.
Q But defendant Vleisides is a primary driver of that vehicle?
A He is.
Q And payments to install a sauna at a residence aren't valid business expenses either, are they?
A Not in a residence.
Q So the company started out with $8,000 of capital; is that correct?
A That's my understanding. I wasn't there at the time.
Q So the rest of the corporate assets or the rest of the company's money came from consumer preorders; is that right?
A Yes.
Q And the company has made hundreds of thousands of

dollars in shareholder loans?
A Yes.
Q In fact, there are about like maybe a little bit over $600,000 in shareholder loans outstanding at this point?
A That's correct.
Q And the recipients of those loans include defendant Vleisides and also defendant Ghoseiri, correct?
A Yes.
Q So money from consumer preorders funded those loans to defendants Vleisides and Ghoseiri?
A Yes.
Q And the company purchased a home in December of 2012?
A It did.
Q So that house was purchased with money from consumer preorders?
A Yes.
Q Okay. And so just to get the timeline straight, December 2012, that's about two months after the initial October 2012 projected shipment date for the 65nm machine?
A That's right.
Q And the house is characterized in financial statements as corporate housing; is that right?
A It is.
Q But only defendant Vleisides and his family reside there?

A Reside there on a permanent basis, correct.
Q And defendant Vleisides hasn't paid rent to live in that house, has he?
A No, not to the company.
Q Okay. And the company pays for renovations and improvements to the house?
A Yes.
Q So let's talk a little bit about the -- about what's happened with the temporary receivership. You've cooperated with Rubin Brown, the accountants that were retained by the temporary receiver, correct?
A To the extent that they asked for anything, we either provided it or answered, yes.
Q And so as part of the cooperation or that cooperation, you opened the company books and records to Rubin Brown?
A Yes, we did.
Q So any financial information that they wanted from the company, they would have had access to?
A I believe so.
Q And so this would have included access to Fishbowl, the company's inventory tracking system?
A That's -- that's not part of what I consider the books and records of the company, which for me being an accountant would be the general ledger and accounting system, but I do believe we gave them access to Fishbowl as well, which is our

inventory system.

Q So they did have access to the Fishbowl system?

A I believe they did, yes.

Q And how about Magento?

A Yes.

Q And that -- just to clarify for the record, that tracks customer orders, sales, and refunds?

A That's right.

Q And they also had access to Quickbooks?

A Yes.

Q And that's the company's general accounting system?

A Yes, it is.

Q And then there were also some Excel tracking spreadsheets that they -- sorry. Excuse me, I have a cold.

They also had access to Excel tracking spreadsheets that the company used for recordkeeping purposes?

A Yes.

Q So if I could turn your attention to Defendant's Exhibit 510 on page 3.

A Page 3?

Q Uh-huh, yes.

A All right. I'm at page 3.

Q Are you there?

A I am.

Q Okay. Great. So that -- there's a discussion or, I'm

sorry, there's a table on page 3 regarding company inventory balance; is that right?

A Yes. The one table on the page is about inventory.

Q So it shows three different numbers for the inventory balance, right?

A It does.

Q So the company's internal bookkeeping systems don't have consistent numbers across the board for how much inventory the company currently has?

A The Quickbooks and Fishbowl are the recordkeeping systems, and those two numbers are about $1.3 million apart. The business plan is not one of the company's recordkeeping systems.

Q Right. Thank you for the clarification.

And then the previous page of the exhibit, page 2, there's a chart at the bottom, and that chart illustrates consumer liability balance.

A Uh-huh.

Q And that also -- that also reflects differing numbers for consumer liability balances between the company's financial reporting systems?

A It does.

Q And in fact isn't it a difference of over a million dollars?

A Yes, it is.

Q So I want to talk a little bit about refunds. In your declaration, and I'm specifically referring to paragraph 10 of your declaration, you state that all BitForce and earlier BF Labs customers who wanted a refund received one if the customer was qualified under the sale terms and timely and properly requested the refund. So I'd just like to delve into that statement a little bit more.

So this would exclude customers who did not qualify under the sales terms?

A Yes. That's -- yes, it would.

Q And it would also exclude customers who did not ask for a refund in the time set forth by the company?

A Can you -- since I don't have a copy of that in front of me, could you reread that section for me?

Q Certainly. Let's see, all BitForce and earlier BF Labs customers who wanted a refund, received one if the customer was qualified under the sale terms and timely and properly requested a refund.

THE COURT: Counsel, if you'd wait one moment, can we just provide the witness so he can see if we have a copy of that he can review.

MS. FRAZIER: Oh, yes.

THE WITNESS: Thank you.

Q (BY MS. FRAZIER) Here you go, Mr. Bourne.

A Thank you.

Q So, I'm sorry, you were referring to paragraph 2 -- I'm sorry, paragraph 10 on page 2.
A All right. I'm at paragraph 10. All right. So I see the part you're referring to.
Q Right. So this statement about all BitForce and Butterfly Labs customers receiving a refund if they qualified, that would exclude customers who did not ask for a refund in the time set forth by the company?
A Yes. If I can expand on that, the timely --
Q Sure.
A -- here refers to up to the point where the unit was shipped, so if someone had received a shipped unit, their recourse after that was limited to repair or replacement of the unit. I think I discussed that earlier today. So that's what the timely refers to.
Q So if the customer received a shipment and decided they didn't want the machine anymore because -- for whatever reason, they couldn't return it to the company --
A They could --
Q -- for a refund?
A For a refund, that's correct, under -- in the BitForce, if you go to the earlier one that says BitForce and earlier, the FPGAs were returnable for 100-percent credit towards the purchase of the next generation.
Q Right. But the FPGAs, those are not the machines that

are at issue in this lawsuit?
A All right.
Q So there are some categories of customers who may have requested a refund but did not receive one?
A Yes.
Q So instead those customers would have been shipped a machine?
A Yes.
Q So your shipment figures include shipments to customers who may not have wanted the machines?
A Yes.
Q And I would like to turn your attention now to Defendant's Exhibit 506.
A All right. I'm at 506.
Q Okay. So just to clarify for the court, these percentages over on the table on the side, these all are percentages regarding the number of complaints that you received from the FTC, correct?
A This is referring to the complaints the FTC received from consumers and provided to us upon our request.
Q So this chart doesn't reflect the total number of customers that ordered machines from Butterfly Labs?
A No, no, only the ones who registered with your Sentinel database.
Q Okay. So where it says over 93 percent of all

complaints through July 2014 have either been shipped their products or received a refund, that only refers to your analysis of the complaints that you received from the FTC's consumer Sentinel database?

A Yes. And the title on this slide refers to FTC complaints 2013, and that's what the date is limited to.

Q And this chart -- and in compiling the information for this chart, no one inquired with the customers who received the machine as to whether or not they were satisfied with those?

A I don't believe so.

Q And the chart doesn't reflect complaints from other sources such as PayPal or complaints that the company may have received?

A It does not.

Q So if we could turn back to your declaration, paragraph 7 specifically.

A Seven?

Q Yes. And I just wanted to clarify something. It says -- it refers to 28,252 devices having been shipped?

A Yes.

Q What is encompassed in that 28,252 figure, is it all 65nm ASICs, or does it include other things?

A It would be strictly 65nm ASIC machines.

Q And to arrive at this figure, you relied on the

company's internal financial reporting systems?
A This would be more the ship station Magento and then manual tracking sheets that they have. Almost all of the shipments go through one of those systems, but every once in a while there's either the system's down, there has to be some sort of -- we're shipping it to some country that that software doesn't handle, so there has to be a manual process, and those are tracked in a separate spreadsheet. So it's the compilation of those.
Q Okay. But Magento would have been something relied upon?
A Yes.
Q So turning your attention to paragraph 15 of your declaration, there you state that each one of the first three generations of product was shipped within six months of the projected date.
A Yes.
Q But there are four generations of equipment?
A That's right.
Q So the last two of those, the third and fourth generations, are the ones at issue in this case?
A All right.
Q So the fourth generation would be the Monarch?
A That's right.
Q So the Monarch wasn't shipped within six months of the

projected date?
A The Monarch is the fourth generation, and that sentence refers to the first three.
Q Now, paragraph 11 of your declaration regarding Cloud Mining, you testified that all sold contracts are still in force and are being delivered?
A Yes.
Q But in fact according to the business plan, which was submitted as an exhibit, there are $1.354 million worth of contracts that have yet to be fulfilled; is that correct?
A That's what the business plan says and that is correct.
Q So all sold contracts are not being delivered?
A Well, there's a difference in that paragraph 11 of my declaration refers to Nimbus Mining, which was offered from January 2014 until June, and that is separate from the Cloud Mining, which is the unfulfilled order queue.
Q Okay. So $1.354 million of the current generation of Cloud Mining are unfulfilled at this point?
A That's right.
Q Okay. And how many customers or how many contracts are being fulfilled under the Nimbus Mining system?
A You know, I don't actually even know. It would be -- I'll say it's in the hundreds, but I'm not sure if it exceeds a thousand.
Q Okay. So prior to the FTC's lawsuit, it wasn't really a

secret that Butterfly Labs had major shipping delays with its products?

A No.

MR. HUMPHREY: Let me object; vague and ambiguous, confusing, misleading.

THE COURT: Well, he responded. I'm going to overrule at this time. You can ask your next question.

Q (BY MS. FRAZIER) Sure. You said yes?

A I said no.

Q Oh, I'm sorry, yes, you said no.

Prior to the FTC lawsuit, Butterfly Labs had been sued in two class actions, correct?

A Yes. I'm sorry. I want to retract that answer. We were sued in -- there's one putative class action suit which has not yet been certified. There's another individual lawsuit.

Q So one class action and one individual lawsuit?

A Yes.

Q And are you -- and you're aware that the class action lawsuit has been covered in the press?

A I am.

Q And you're also aware that the press has covered the individual lawsuit by plaintiff Meisner? That's been in the press as well, correct?

A It has been.

Q And prior to the FTC bringing its lawsuit, Butterfly Labs was being investigated by the Johnson County DA's Office, correct?

A Yes.

Q And before the FTC sued Butterfly Labs, that action had not been made public?

A The Johnson County DA, you're asking me?

Q Yes, I am.

A It had not been made public as far as I know.

Q And in fact that lawsuit wouldn't be public or that law enforcement action wouldn't be public now except for the fact that Butterfly Labs itself disclosed it in the pleadings in this case?

A That I think supposes that we hadn't reached any sort of agreement with the Johnson County DA and publicized as a result of that.

Q But the way it made its way into the press under the current circumstances was that Butterfly Labs disclosed that as part of the pleadings in this case?

MR. HUMPHREY: Object; calls for lack of foundation. Calls for speculation.

THE COURT: I'll sustain that.

Q (BY MS. FRAZIER) So turning back to your declaration, paragraph 30.

A 3-0, 30?

Q Yes.
A All right. I'm at 30.
Q So in paragraph 30 you assert that Butterfly Labs is currently prevented from competing to be first to develop and release new mining equipment?
A Yes.
Q And this would be the 16nm machine?
A Yes. That would be the next generation.
Q But Butterfly Labs isn't planning to develop the 16nm chip itself, is it?
A Given our current cash situation, no, we're not.
Q So you would be planning on purchasing that chip from a chip manufacturer?
A We would purchase the chip. We would have to design and develop the circuit board and the remaining components that go around the chip.
Q And that technology at this point hasn't been developed?
A That's right.
Q And paragraph 33 of your declaration, this mentions the stigma to which BFL employees have been subject and the association with an employer accused of criminal activity.
A I see that.
Q And this isn't a criminal action, is it?
A Thank you for clarifying. That was my lack of understanding of that aspect of it, but thank you.

Q No problem. And but defendant Vleisides has been accused and convicted of mail fraud, which is a federal felony?
A Is there a question?
Q You testified to this earlier as part of your due diligence that you performed when coming to work with the company.
A I did. I'm just not sure what -- if you're asking me a question.
Q Sure. So -- and you testified that informing employees of that history is part of the hiring process?
A Yes.
Q Okay. So already Butterfly Labs' employees are already associated with an employer that has some type of a criminal history?
A If you extend that to Mr. Vleisides' individual conviction to the company, I would say yes. What I was referring to here was the employer as the employer was the company itself.
Q And the media in fact has covered the story about defendant Vleisides' supervised release, hasn't it?
A It has.
Q So if I could turn your attention now to Defendant's Exhibits 504 and 505.
A All right.

Q Oh, I'm sorry, actually just 504 at this point.
A Okay.
Q Okay. And these are the banner ads that you testified about earlier?
A Yes, they are.
Q So when somebody clicks on one of these ads, they're directed back to the company website; is that correct?
A Yes, it is.
Q And these aren't the only advertisements that the company has ever issued about its products?
A No, they are not.
Q And in addition to advertising, the company communicates to interested customers over e-mail?
A If we communicate by e-mail, they're already a customer. We don't solicit new customers by e-mail unless they've signed up -- well, we don't even solicit them by our newsletter, so we don't use e-mail to communicate with anyone in general who's not either already a customer or has signed up for our e-mail newsletter.
Q What about a customer who already was a customer but was thinking of, you know, purchasing the next generation of product, you would e-mail those people, right?
A Certainly we would respond to an e-mail from that person.
Q And what about prospective customers who have questions

about the products?
A To the extent that a prospective customer contacted us generally by e-mail, we would respond to that e-mail.
Q Okay. So turning your attention to Exhibit 505, Defendant's Exhibit 505.
A Okay. I'm at 505.
Q About the repeat customers.
A Yes.
Q You didn't calculate these figures yourself, did you?
A No, I did not.
Q And these numbers would have come from company financial reporting systems like Magento?
A Yes.
Q And at this point it's unclear whether the numbers in Magento are actually accurate and up to date?
A Are you asking?
Q Yes.
A It's -- they're substantially correct, but I can't say they are precisely accurate.
Q And at some point Butterfly Labs offered its customers an upgrade program where they could upgrade from the 65nm machine to the 28nm machine?
A It -- we called it a transfer program, but I assume that's what you're referring to.
Q Yes, it is. Thank you.

A Sure.
Q So the transfer program, are customers who opted into the transfer program included in the repeat customers?
A I don't know the answer to that.
Q So they could have been included but you're not sure?
A They could have been included but I'm not sure.
Q So if they were included in these figures, then some of these repeat customers would be people who actually didn't receive the 65nm machine but opted to upgrade to the 28nm machine instead?
A If they're included in both, that is correct.
Q And this chart doesn't account for people who requested refunds from the company, does it?
A People who received refunds from the company?
Q Received or requested refunds.
A Well, if someone ordered and got a refund in the 65nm, I don't think they're included, but, again, I -- that's an astute question, and I don't know the answer to it.
Q Or, for example, a customer who ordered the 65nm machine and then upgraded to the 28nm machine and then decided they wanted a refund?
A I believe -- I think this does -- this is based on orders, not on refund or shipped status. I think it's tied back to people who ordered regardless of what the eventual outcome was.

Q All right. So let's talk about the opportunity with the financial institution that you testified to. Do you speak directly with the point of contact at the financial institution?

A I do not.

Q So what you know about this is derived secondhand from what Mr. McClain told you?

A Yes. And what I saw in the e-mail that was addressed to me.

Q You haven't visited the financial institution's premises?

A Not in connection with this. I have visited that financial institution in the past.

Q So there's no independent verification as to how the machines are being used at this point?

A No. We're relying on the truthfulness of our contact.

Q And so as we earlier discussed, you don't have a computer science background, so you can't offer a technical opinion on whether the use of the machines for this purpose is feasible?

A I cannot offer a technical opinion. I can tell you they tell us this is what they're using them for.

Q And the contact at the financial institution is not someone in the financial institution's purchasing department?

A No.

Q It's someone in the IT department?
A That's my understanding, yes.
Q So if this were to go forward, there would have to be a formal vetting process to determine whether or not Butterfly Labs is the appropriate vendor for these types of machines?
A That's correct. Now, my understanding is to some extent that process has already -- we've been set up in their system as a vendor, but they have not issued a purchase order.
Q And your understanding is based on what you heard secondhand from Mr. McClain?
A Yes.
Q There isn't any written confirmation that the company has received that it's been set up as a vendor in the financial institution system?
A Not that I've seen personally, no.
Q And the -- and Exhibit 513, which is an e-mail that we've been referring to, that's dated November 9th, 2013, which is over a year ago; is that correct?
A Yes, it is.
Q So I'd like to talk about your testimony about the company's testing procedures.
A Okay.
Q Earlier you testified that the company couldn't test on the testnet because the machines were too fast.
MR. HUMPHREY: I will object, Your Honor, that this

goes beyond the scope of the FTC's lawsuit. I understand that they'll say it was in direct, but I do want to lodge the objection that the FTC's lawsuit is that it's focused on misrepresentations to customers, and it should not include a discussion of burn-in testing or questioning of the witness on those topics.

THE COURT: Ask the question again. What were you trying to ask?

MS. FRAZIER: I was just recounting that he had testified that the machines were not tested on the testnet because they were too fast. He test -- since he testified to that earlier.

THE COURT: Yeah. I'm going to overrule the objection only because he testified to it, but I will tend to agree. I'm going to overrule and you can answer that question.

MS. FRAZIER: Your Honor, if you don't think that it's relevant or instructive, then I don't have to pursue that line of questioning.

THE COURT: Well, I've let some things that are not relevant or instructive to my ultimate determination go on, so I was going to do it here only because I've allowed it. I've tried not to interrupt the best I can.

MS. FRAZIER: That's fine. I will forego that. That's fine. I understand.

That's all I have, Your Honor.

THE COURT: Okay. Thank you. Any redirect?

MR. HUMPHREY: No, Your Honor.

THE COURT: Okay. Any redirect, Mr. Griffin?

MR. GRIFFIN: Oh, I'm sorry, no, Your Honor.

THE COURT: I always forget you. Now you --

MR. GRIFFIN: Now I forgot.

THE COURT: You forgot to raise your hand. That's fine.

May this witness -- you can stand down.

Thank you, Mr. Bourne.

Any further evidence?

MR. HUMPHREY: Not at this time, Your Honor, no evidence. Presentation. We would renew our motion made earlier at the close of all the evidence and ask that the case be dismissed at this point pursuant to that but understanding the court's earlier position.

MR. GRIFFIN: On behalf of Mr. Ghoseiri, I have nothing further.

THE COURT: All right. Thank you.

Why don't we -- I'm going to take about a five-minute recess. Then we'll come back out. What the court will do at that time is intend to gather my thoughts and some questions I may have and have you address the court so I can ask those questions -- ask and get those questions answered,

and then we'll just go from there. Good enough?

MR. HUMPHREY: Very good.

(A recess was taken.)

(Court adjourned.)

REPORTER'S CERTIFICATE

I certify that the foregoing pages are a correct transcript from the record of proceedings in the above-entitled matter.

_____ _____

Date Registered Merit Reporter