

*** CONFIDENTIAL PROTECTIVE ORDER MATERIAL ***

Transcript of Jonathan D. Putnam, Ph.D.

Date: October 3, 2024
Case: Affordable Wire Management, LLC -v- CCABH, Inc. (PTAB)

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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AFFORDABLE WIRE MANAGEMENT, LLC,

Petitioner,

v.

CAMBRIA COUNTY ASSOCIATION FOR THE BLIND AND HANDICAPPED, INC.,

Patent Owner.

_____

Case IPR2024-00178

Patent 11,349,291 B2

and

Case IPR2024-00139

Patent 10,177,551 B1

_____

* CONFIDENTIAL PROTECTIVE ORDER MATERIAL *

Deposition of JONATHAN D. PUTNAM, PH.D.

Boston, Massachusetts

Thursday, October 3, 2024

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Deposition of JONATHAN D. PUTNAM, PH.D., held at the offices of:

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Pursuant to notice, before Michelle Keegan, Registered Merit Reporter and Notary Public in and for the Commonwealth of Massachusetts.

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** Documents quoted on the record are transcribed as read **

P R O C E E D I N G S

JONATHAN D. PUTNAM, PH.D.,

having been satisfactorily identified and duly sworn by the Notary Public, was examined and testified as follows:

EXAMINATION BY COUNSEL FOR

PETITIONER AFFORDABLE WIRE MANAGEMENT, LLC

BY MR. DIXON:

Q. Good morning, Mr. Putnam.

A. Good morning.

Q. Thanks for coming in this morning.

You've been deposed before. Right?

A. Yes.

Q. I'm just going to go over some ground rules that you've probably heard a number of times. But you understand that depositions are taken in a question-and-answer format?

A. Yes.

Q. Do you understand that you're under oath today as if you were testifying before a judge or a jury?

A. I do.

Q. Is there any reason that you cannot give truthful and accurate testimony today, such as medication?

A. No.

Q. At any time during the deposition if you need a break, please let me know. I'd just ask that you finish my -- if there is a pending question, you finish your answer to my question before we take that break. Is that fair?

A. Sure.

Q. If you don't understand one of my questions, can you please ask me to rephrase and I'll do my best to make it more clear? Otherwise, I'll assume you've understood the question if you provide an answer.

A. I will.

Q. Your counsel may object from time to time. But unless he instructs you not to answer, do you understand that you must give an answer to the pending question?

A. Yes.

Q. Because your testimony is being recorded

by a court reporter, it's important that we allow sufficient time for a question to be completed or an answer to be given. So I'd just ask that we speak clearly and try not to interrupt each other.

And I also ask that you provide verbal answers, so no head nodding or anything like that that won't show up on the transcript. Is that fair?

A. Sure.

Q. Did you prepare with your attorneys before this deposition?

A. Yes.

Q. For approximately how long?

A. Four, five hours.

Q. When did the preparation occur?

A. Yesterday.

Q. Did you meet with your attorneys in preparation for the deposition at any other time than yesterday?

A. No.

Q. About how long did you spend preparing your declaration in IPR2024-139?

A. Which one is the '291 and which is the '551?

Q. Would it be easier if I refer to them as '291 and '551 IPRs?

A. I can probably memorize two numbers. As long as we're clear. I don't have my report in front of me, so I don't remember which one is which.

Q. So I'll give you your reports in a moment.

A. Okay.

Q. But for clarity, the 139 IPR relates to the '551 patent and the 178 IPR relates to the '291 patent.

A. Okay. So with that clarification, are you asking me about the 178 or the 139?

Q. The 139.

A. So the question is how many hours did I spend preparing that declaration?

Q. Correct.

A. Well, of course by that time I had already prepared the 178. So I don't remember, off the top of my head, but it probably would have been

fewer than 20.

Q. About how long did you spend preparing the 178 declaration?

A. Well, again, I don't have the records in front of me. I would say -- I'd be guessing. I would guess something like 100 hours.

Q. Did you have any assistance in preparing either of your declarations?

A. Yes.

Q. Who assisted you in preparing your declarations?

A. The project manager is a woman named Awo, A-W-O, Bos, B-O-S. And then there were several analysts who put together the exhibits.

Q. Did anyone else help you prepare your declarations in these matters?

A. Other than counsel, no.

Q. From time to time I might refer to Cambria County Association for the Blind as "CAB." Is that fair?

A. Sure.

Q. And from time to time I may refer to

Affordable Wire Management as "AWM." Is that fair?

A. Sure.

Q. So I'm handing you two documents that are both marked Exhibit 2044.

(Exhibit 2044, previously marked, is not attached to the transcript.)

Q. Do you recognize these documents, Dr. Putnam?

A. Yes.

Q. What are these documents?

A. These are copies of the declarations that I filed in the 178 and 139 IPRs.

Q. Does Exhibit 2044 in the 139 IPR reflect your complete opinions in that proceeding?

A. As of the date it was filed, yes.

Q. Does Exhibit 2044 in the 139 IPR reflect your complete opinions in that proceeding as of today?

A. I can't think of anything that has changed in my opinion since then, so I would say yes.

Q. So sitting here today, you wouldn't

supplement Exhibit 2044 in the 139 IPR?

A. Well, I would obviously answer that question in consultation with counsel. But on my own, no.

Q. Similar question for Exhibit 2044 in the 178 IPR. Does that reflect your complete opinions in that proceeding as of today?

A. As far as I know, yes.

Q. Sitting here today, would you supplement Exhibit 24 -- 2044 in the 178 IPR?

MR. FLYNN: I should have made this objection, but I'll make it now. Just object to form.

A. Again, I wouldn't make the decision unilaterally. I have no present intention of supplementing it.

Q. Have you previously opined on secondary considerations?

A. Yes.

Q. How many times have you provided an opinion on secondary considerations?

A. Well, I don't have my CV in front of me,

but I would -- I'd say probably maybe half a dozen, something like that.

Q. In those half a dozen matters, did you opine on commercial success?

A. Yes.

Q. In those half a dozen matters, did you opine on any other secondary consideration?

A. Not to the best of my knowledge.

Q. Are you offering any technical opinions today?

A. No.

Q. Are you offering any legal opinions today?

A. No.

Q. You use the term "coextensive" in both of your declarations. Is that right?

A. Yes.

Q. What does it mean for a product to be coextensive with a patent?

A. Well, I don't have an opinion about this. It involves analysis of claim language.

I would say that my understanding is reflected in the summary of the case law found in

Paragraph 16, and in particular, in Footnote 17 in the Fox Factory case for the Federal Circuit.

What we do require is that the patentee demonstrate that the product is essentially the claimed invention.

So I guess as a layperson, that would be my understanding.

Q. Do you have an understanding of what it means to be essentially the claimed invention?

A. Well, I guess -- well, my understanding is that there's some -- there can be a question of the role played by other features in the product and that the question is whether those other features are critical to the product.

But this isn't something that I've studied. And as I said, it's not part of my opinions.

Q. If you'd go to Paragraph 6. I believe the same language appears in both of the declarations, and this under the header "Scope of Assignment."

MR. FLYNN: Mr. Dixon, are we referring specifically to one or the other or both at the

same time at this point?

MR. DIXON: At this point, I'm referring to both at the same time. And I believe the language I'm about to point to Dr. Putnam is identical in both declarations.

MR. FLYNN: Thank you.

Q. So, Dr. Putnam, in the first sentence of Paragraph 6 in both declarations, you state that you've been asked to examine the commercial success of CAB products that are coextensive with U.S. Patent Numbers 11,349,291, the '291 patent, and 10,177,551, the '551 patent, as a factor for secondary considerations supporting the patents' nonobviousness. Is that right?

A. Yes.

Q. How did you conclude that CAB's products are coextensive with the '291 patent and the '551 patent?

A. I didn't conclude that. That's based on -- an assumption based on -- and which I'm relying on the testimony and opinion of Dr. Kern.

Q. Do you rely on Dr. Kern for the assumption

that CAB's products are coextensive with both the '291 patent and the '551 patent?

A. Yes.

Q. Let me clear up the record, I think.

Do you rely on any other experts for the assumption that CAB's products are coextensive with both the '291 patent and the '551 patent?

A. Oh, I'm sorry. Okay. Yes. Thank you. I think for the '551 it's Dr. Phinney is the technical expert.

Q. So I just want to make sure I understand exactly what you're saying.

Do you rely on Dr. Kern for the assumption that CAB's products are coextensive with the '551 patent?

A. Well, my understanding is that the division of labor is -- between the '291 and the '551 is that Dr. Kern is the technical expert for the '291, and Dr. Phinney is the technical expert for the '551, but that may not be correct.

In Footnote 17, I think it's the same. Let me check. No.

Okay. So in the 178 IPR, Footnote 12, it says that I rely on the testimony of CAB's technical experts, plural, to establish a relationship between the claimed feature and the patented invention. That's Footnote 13 in the declaration filed in the 139 IPR.

And so as I said, what my opinion of what it means to be coextensive is a lay understanding. I don't know whether that reliance is separately on either expert individually or whether it's a joint -- that I'm relying on them jointly because it's just something that I take for granted in my own analysis.

Q. Do you rely on any other individual for your assumption that CAB's products are coextensive with the '291 and '551 patents?

A. I don't believe so. No.

Let me just supplement my previous answer with -- by referring you to Paragraphs 26 and 27 of each of the two declarations.

And that's where I express the individual reliance on the experts. But in Paragraph 26 of

the 178 declaration, Footnote 25 says -- it refers to the declaration of Dr. Kern. Footnote 26 refers to the declaration of Dr. Phinney. And those are submitted in the 178 and 139 IPRs respectively. And the corresponding footnotes in the 139 declaration are Footnotes 26 and 27.

Q. So you relied on Dr. Kern for the assumption that CAB's products are coextensive with the '291 patent. Is that right?

A. Yes.

Q. And you relied on Dr. Phinney for the assumption that CAB's products are coextensive with the '551 patent. Right?

A. That's correct.

Q. Did you assume that all products -- CAB products are coextensive with the '551 patent?

MR. FLYNN: Object to form.

A. Well, CAB sells a number of individual parts which together constitute a system. And so these are system claims.

So I guess I would say that in this particular context the phrase "all products" is

ambiguous.

Q. Do you have a more clear statement about whether you think any particular products are coextensive with the '551 patent?

MR. FLYNN: Object to form.

A. Well, as I said, throughout my declarations I referred to two different systems sold by CAB, the standard system and the integrated system. Each of those systems comprises a number of parts, and the patent claims claim a system.

So I guess I would say that if one defines CAB's products as systems that comprise individual components, then my understanding is the '291 system claim is coextensive with the standard system that CAB sells, which comprises a number of parts.

But one can't, as I understand it, break it down further than that for the purpose of analyzing coextensiveness.

Q. So in Paragraph 25 -- and this looks to be identical in the two Exhibit 2044s that we're

looking at right now. Please let me know if that is incorrect.

But in Paragraph 25, you mention the standard system introduced in 2014 and an integrated system introduced in 2018.

Is the integrated system the other system you were referring to in your previous answer?

A. Yes.

Q. Is the '291 patent coextensive with the integrated system?

MR. FLYNN: Object. Beyond the scope.

A. Yeah. As I said, I don't have a separate opinion about coextensiveness. I'm just relying on the technical experts.

So I would defer to, I guess, given your question, both Dr. Kern and Dr. Phinney since it seems to imply opinions that both of them have expressed.

Q. In rendering your opinions in this matter, did you assume that the standard -- sorry. Strike that.

In rendering your opinions in this matter,

did you assume that the integrated system was coextensive with the '291 patent?

A. I think what I said was that I assumed that the -- in Paragraph 27 of the 178 IPR, I assume that the additional features of the integrated grounding are claimed in and are coextensive with the inventions claimed in the '551 patent.

So that says nothing about the integrated system being coextensive with the '291 patent. And since I don't have an opinion about coextensiveness myself, I would say I have no opinion.

Q. So in rendering your opinions in this matter, you did not assume that the integrated system was coextensive with the '291 patent?

MR. FLYNN: Object to form, mischaracterizes the testimony.

A. Well, the integrated system is something that is added on top of -- as it's sold, it is added on top of the aboveground cable management system.

So you need aboveground cable management in order to take advantage of the integrated grounding features.

So all this is to say is that I didn't make an assumption about the coextensiveness of the integrated system with the '291 patent because I don't think it's necessary, in my opinion.

Q. Did you make any assumptions in rendering your opinions in this matter that the integrated grounding system practices the '291 patent?

MR. FLYNN: Object to form.

A. I guess I would say my understanding is that it does, but I don't think I've been asked that question specifically.

Q. And when I say whether the integrated grounding system practices the '291 patent, do you understand that to mean that the integrated grounding system meets all the limitations recited in the claims of the '291 patent?

MR. FLYNN: Object to form.

A. I understand that's the definition of "practices."

Obviously this is, you know -- whether a system practices the claims of a patent is not something that an economic expert should have an opinion about. I would say that's my understanding, but obviously I would defer to the technical experts for any opinion.

Q. So you testified that it is your understanding that the '291 -- sorry. Let me strike that question.

So you testified that it is your understanding that the integrated system practices the '291 patent. Right?

A. Yes.

Q. What is the basis for your understanding that the integrated system practices the '291 patent?

A. Well, again --

MR. FLYNN: I'm just going to object to being beyond the scope.

A. Yeah. This is, you know -- these are not part of my opinions. My understanding is that the integrated system is an aboveground cable

management system with -- having certain integrated grounding features.

And so as an aboveground cable management system, it practices the claims of the '291. And as an integrated grounding -- having added the integrated grounding features, it also practices the features of the '551.

Q. Is it your opinion that sales of the integrated grounding system demonstrate commercial success of the '291 patent?

MR. FLYNN: Object to form.

A. Yes.

Q. Do you base that opinion that sales of integrated grounding systems -- strike that question.

Is it your opinion that sales of CAB's integrated grounding system demonstrate commercial success of the '291 patent because you are assuming that the integrated grounding system practices the '291 patent?

MR. FLYNN: Object to form.

A. That's my understanding. Yes.

Q. Who do you rely on for your understanding that the integrated grounding system practices the '291 patent?

A. Well, I guess I would say that it's sort of all over the case.

So for example, in Paragraph 30 of the 178 declaration, it says that CAB's integrated grounding system augments these cost-saving benefits, which are the benefits conferred by the '291 patent.

So the integrated grounding system accomplishes all -- offers all the benefits of the standard system and then provides further benefits and in particular further cost savings.

So the benefits advertised for the standard system are also advertised for the integrated cost system with the exception of the benefit highlighted in Paragraph 32, which is the integrated grounding option.

And this is the way the product is sold and advertised. And so -- and that's made clear in -- as it says, for example, in Footnote 31, the

Bowman declaration and the Smith declaration.

So I guess my assumption is that the integrated grounding system offers the benefits of the '291 patent because it practices the claims of the '291 patent.

But I don't think I've seen a claim chart, and I haven't -- nothing about my opinion depends on the existence of a claim chart.

Q. Do you know if Mr. Bowman has been offered as the technical expert in this matter?

A. No. I think he's a fact witness.

Q. Do you know if Mr. Smith has been offered as the technical expert in either of the two matters?

A. No. Again, I think he's a fact witness.

Q. Are you aware of any opinions by any of the expert witnesses in these expert matters stating that the integrated system practices the '291 patent?

MR. FLYNN: Object to form.

A. I don't typically read -- unless it's pertinent to my opinion, I don't typically read

the claim-level analysis of technical experts.

And so "I don't know" is the answer.

Q. Are the advertised benefits of a product necessarily the same as the limitations of a patent claim?

MR. FLYNN: Object to form.

A. Well, I'm sure that calls for a legal conclusion. I'm also sure that it varies from case to case. So without more -- I would need more information in order to answer that question about this case. And having gotten that information, I would say I'm not qualified to offer an opinion.

Q. So a few responses ago, you testified that the benefits advertised for the standard system are also advertised for the integrated system, with the exception the benefit highlighted in Paragraph 32, which is the integrated grounding option. Is that right?

A. Yes.

Q. Do you know if the benefits advertised for the standard system that are also advertised for

the integrated system are limitations in the '291 patent?

MR. FLYNN: Object to form, calls for a legal conclusion, beyond the scope.

A. Well, just to take a for instance -- yeah. I guess I would say in terms of what I actually can express an opinion about, which is the economics, one of the benefits advertised for both systems is that rodents don't nest in cabling.

As far as I know, there's no mention of rodents in the claims of either the '291 or the '551. So my guess as a layman is that the benefits that are conferred by the two systems don't correspond to individual claim elements because there would be an exception.

Q. If CAB's products are not coextensive with the '291 patent, would that change your opinion?

A. I think I address this point in Paragraph 28 of the 139 declaration.

My understanding is that coextensiveness simply creates a rebuttable presumption of nexus.

So Paragraph 28 says that even if it is

not determined the features claimed in the '291 patent are coextensive with the standard system and/or that the features claimed in the '551 patent are coextensive with CAB's integrated system so as to establish a presumption of nexus, the analysis set forth below confirms ample evidence of actual nexus in the case of each patent.

And so my opinion concerns actual nexus, not the presumption of nexus, and would be unchanged if there were no such presumption.

Q. Did you include the substance of Paragraph 28 in your declaration in the 178 IPR?

A. No. I mean, in other words, it's a logical statement that my opinions as to nexus are unchanged, whether there is a presumption or not.

A presumption is not something that an economist has an opinion about. So this just clarifies that while I understand that the products are coextensive with the systems -- with the patents -- let me state that again.

While I understand that the systems are

coextensive with the patents, that is -- that understanding is not necessary to my opinion, which concerns actual nexus.

Q. Why did you decide to include Paragraph 28 in Exhibit 2044 in the 139 IPR?

A. I think to avoid confusion about the scope of my opinion. As I've said I think now three times, I don't have an opinion about coextensiveness. I'm relying on the technical experts for that.

If for some reason technical experts are wrong, that doesn't change the analysis that I did.

And so I think Paragraph 28 just anticipated the question that you asked me, which is would my opinion change if the patents weren't coextensive with the systems. The answer is no.

Q. But you don't explicitly say that in the 178 IPR. Right?

A. That's right. It's just implied.

Q. Where is it implied in Exhibit 24 of the 178 IPR?

MR. FLYNN: Objection, asked and answered.

A. It's implied by the fact that I rely on others for an opinion about coextensiveness. I express -- which creates a presumption of nexus.

I express no opinion about that presumption. I express opinions about actual nexus.

And so logically, since there is no -- since an opinion about actual nexus doesn't depend on a presumption of nexus, there is no logical relationship between the two. And so if the premise turns out to be untrue, the conclusion nevertheless remains.

Q. Do you have an understanding of whether a product needs to practice a patent to have nexus to the evidence of commercial success?

A. Well, again, I think this calls for a legal conclusion.

But going back to Footnote 17 of the 178 IPR and the corresponding text in the body, I would say my understanding is reflected in Paragraph 16, Subparagraph B.

The product, quote, is the invention disclosed and claimed in the patent, with a footnote to WBIP versus Kohler and Fox Factory versus SRAM, in which the Federal Circuit said what we do require is that the patentee demonstrate that the product is essentially the claimed invention.

If you're asking a more nuanced question than that, then the answer is "I can't help you."

Q. So it's your understanding that to show nexus the product is the invention disclosed and claimed in the patent?

MR. FLYNN: Let me have one second to read that question.

Object to form.

A. As far as I know, what we're talking about is not nexus but the presumption of nexus.

Q. So I'm asking specifically about nexus. Is it your understanding that to show nexus you must show that the product is the invention disclosed and claimed in the patent?

MR. FLYNN: Object to form, beyond the

scope, calls for a legal conclusion.

A. Again, we're way outside my expertise.

But I would say that the closest statement of the law that seems to be on point is in Paragraph 16, Subparagraph C, which says that the proponent of a party trying to demonstrate secondary considerations must establish a nexus between the evidence and the merits of the claimed invention.

That's the closest I can get.

Q. If a product -- strike that.

If a patent claims Limitations A, B, and C and a product consists of B, C, and D, is it possible to show nexus between that product and those limitations?

MR. FLYNN: Object to form, calls for a legal conclusion, beyond the scope.

A. And in addition, my understanding is that one doesn't establish a nexus to individual claim limitations, particularly in the context of a system claim.

So I appreciate you're asking me a

hypothetical, but in addition to the fact that I'm not a lawyer and don't know how to answer questions like this, my understanding as a layperson is that it's not an accurate description of how one establishes nexus, since that question looks to the invention as a whole and not to individual claim limitations.

Q. If a limitation in a claim is not present in a product, can that product have a nexus to the invention as a whole?

MR. FLYNN: Same objections, beyond the scope, calls for a legal conclusion.

A. Now I think I'm drawing a line. I don't know.

Q. What components are included in CAB's standard system?

A. Well, as Appendix 3 says, customers who demanded the standard system demanded products that fall in four categories: [redacted]

[redacted]

[redacted]

And then depending on their requirements,

they may have picked different items within those categories.

Q. If a standard system is missing one of these components, for example an [redacted], is it still a standard system, to your understanding?

MR. FLYNN: Object to form.

A. Well, I think there's -- I think the question is what does the customer demand versus what does CAB supply.

If, to take your example, the customer purchases [redacted] from a third party, that would still be a demand for the system even if CAB didn't supply the [redacted]

So I would regard the customer's selection of that system as evidence of the success of the system.

Q. If you'd turn to Appendix 2.2 under "Notes and Sources," you decided to exclude [redacted]. Is that right?

A. Yes.

MR. FLYNN: Object to form.

Q. Why did you decide to exclude [redacted]

[redacted]

A. Well, I think to be conservative and to focus on the components that are -- that constitute the claimed system.

Q. How did you come to an understanding that [redacted] aren't part of the claimed system?

A. Well, this is, again, getting outside my expertise. But my understanding is that a [redacted] doesn't have multiple cable surfaces.

Q. Did you also exclude [redacted] because they don't have multiple carrying surfaces?

A. Among other things, yes. But this -- the larger point is that what I'm trying to do is, in reliance on people who understand both the system and the claim language, I'm trying to assemble sales information about the components of the system. And I believe that the system does not comprise these three categories of components.

Q. Who did you rely on for your understanding

that [redacted]
aren't part of the claimed system?

MR. FLYNN: Object to form and further to the extent that the question calls for information that is protected as attorney work product.

A. Yeah. In other words, I asked for information on system sales. The systems comprise various parts, as Appendix 2.2 shows.

So in consultation with counsel, who understands the relationship between the systems and the claim language, I received information on the categories of sales that are listed in Appendix 2.2.

I didn't, you know -- from an economic point of view, the only stipulation is that we not overstate sales of the systems by including extraneous components so that the board has an accurate picture of the system sales over time.

I didn't go through and, you know, conduct a claim-level analysis and say why should [redacted] be included or excluded. I wanted to just choose a conservative

representation of what it means to sell a system.

Q. Did you rely on any of CAB's technical experts for your understanding that [redacted] aren't part of the claimed system?

A. I didn't speak with them about that. No.

Q. If a customer decided to purchase [redacted], wouldn't its purchase of those three other components evidence the success of the system?

MR. FLYNN: Object to form.

Q. Let me ask a better question.

So earlier we talked about a situation where a customer purchases all the components of the standard system without an [redacted]. Do you recall that?

A. Purchases from CAB without an [redacted].

Q. Correct.

A. I do recall that.

Q. If a customer doesn't purchase one of the

carrier hangers that you identify as part of the standard system, would that still evidence success of the system?

A. When you say "doesn't purchase," if you mean doesn't purchase from CAB, I think that's a pretty important qualification.

A customer -- in other words, one could demonstrate commercial success even if CAB didn't sell any parts to a customer. It depends on what the customer demands.

So if a customer demands the system, then that is evidence of success regardless of how they source the system.

So when you say if they didn't -- if the customer didn't purchase the hangers, the critical question is do they purchase the hangers from somebody, whether that's CAB or somebody else.

As far as I know, there's no fact pattern that conforms to what you're implying, which is that they purchase [redacted] from CAB but source the hangers from somebody else.

To the best of my knowledge, that doesn't happen. But if they purchase [redacted] from somebody else, there would still be demand for the system, then yes, it would be evidence of commercial success. And I would have undercounted the -- that success because the records wouldn't reflect the customer's purchase of the hangers from a third party.

Q. If a customer purchases [redacted] from CAB but doesn't source [redacted] from anyone, is that evidence of commercial success for the system?

A. Well, I guess I would say I don't have an opinion, but more practically I'm not aware of any customer doing that. I don't know why they would do that because without [redacted] you can't suspend the cables.

Q. If a customer purchases [redacted], does that evidence commercial success for CAB's standard system?

A. Well, again, I'm not aware of any -- of

that fact pattern actually occurring. So I haven't thought about it.

Q. If a customer purchases [redacted], would that evidence commercial success for CAB's standard system?

A. Again, I'm not aware of any customer who does that, and I haven't thought about it. As far as I know, it's a hypothetical question with no concrete application.

Q. So I'm handing you an exhibit marked Exhibit 2056.

(Exhibit 2056, previously marked, is not attached to the transcript.)

Q. I believe this exhibit is identical in the two IPRs.

Do you recognize this exhibit?

A. Yes.

Q. You cite to this exhibit in your report. Right?

A. Yes.

Q. On the first page about a third of the way

down, do you see the name [redacted]

A. Yes.

Q. And the associated invoice number for that is [redacted]?

A. Yes.

Q. And Invoice Number 1[redacted]. Right?

A. Yes.

Q. What are those three components?

A. [redacted].

Q. And looking at Exhibit 2056, do you see any other components as part of [redacted]

A. No.

Q. So this is an instance of a sale of [redacted] Is that accurate?

MR. FLYNN: Object to form.

A. Yes, but it's also not included in my sales exhibit. So okay.

Q. Did you include the sales of the [redacted]

[redacted] in Appendix 2.2?

A. I'd have to go back and look because the Exhibit 2.2 doesn't depend on this data set, data source.

Q. And Exhibit 2.2 relies on Exhibit 2046. Right?

A. That's right.

(Exhibit 2046, previously marked, is not attached to the transcript.)

Q. I'm handing you Exhibit 2046 right now. I apologize for the size of it in advance.

So if you compare Exhibit 2056 and 2046, [redacted]. Is that accurate?

Do you need a moment?

A. Where are you looking?

Q. So let's look at Exhibit 2056 for a moment. So if we go back to that [redacted] Do you see that?

MR. FLYNN: Actually, I'm sorry, I'm having trouble finding it.

A. There's four rows. It's the first of those rows. Is that correct?

Q. So the [redacted], invoice that we were discussing before is about a third of the way down the page.

And you see the fifth column over says "material"? And for that first line of the [redacted] invoice it lists [redacted] as the material number. Do you see that?

A. Yes.

Q. And [redacted]?

A. Yes.

Q. So if we go to Exhibit 2046 now, on the very first page there's a header that says [redacted]" Is that right?

A. Yes.

Q. And the first part number is [redacted]. Is that right?

A. Yes.

Q. And it says [redacted]"?

A. Yes.

Q. So is it a fair assumption to say that this sale in Exhibit 2056 is reflected in Exhibit 2046?

MR. FLYNN: Object to form.

A. Without tracing it through, I would say no. The larger question is what is the system that the customer bought, not what is on a particular invoice.

And so whether that particular invoice is included in Exhibit 2046, I have no idea. I wouldn't begin to comment on that without going through and looking at an invoice level. And then I would also have to look at a customer level to see what else the customer bought.

Q. Did you ask for customer-level information in analyzing CAB's sales data?

A. No. Well, in other words, we do have customer-level information for 2018, which is reflected in Exhibit 2056. But for the entire period, I asked for summary information because that was what was necessary to produce my exhibits.

Q. You're not aware of any evidence that [redacted] purchased any other components other than the three identified in [redacted] [redacted] [redacted] Is that right?

A. Well, it's fair to say that I have not studied what [redacted] bought, full stop, because this analysis is not based at the customer level.

So I'm not aware of customer-level information in general except for Exhibit 2056.

This invoice also doesn't include messenger wire, for example. So I don't know what the customer demanded in the way of the system.

As we've said, what really matters is whether the customer demanded the system. And formally, I couldn't tell you that without actually going and talking to the customer and asking them what else they bought in addition to what's reflected on this particular invoice. There's no reason for that customer to give me that information.

So I think at a formal level, your question is impossible to answer.

Q. So without speaking to the customers themselves, we have no insight into whether they've purchased the integrated system?

A. No. That's completely false. CAB sells systems. Whether any particular invoice reflects a sale of a complete system is something I don't have an opinion about and I also don't care about. They advertise and sell systems. Those systems comprise components. I added up the sales of the components in order to determine what system sales were.

Your question is a customer-level question about what else the customer might have bought and whether that included one- or two-carrier hangers and whether that should be included or not. That system should be included based upon purchases that we agree are not in evidence.

So the answer to your question is, as to that customer, I have no idea.

As to CAB's system sales, I've got a very good idea, and those are reflected in the sales in Exhibit 2046.

Q. Is it your position that every single system CAB sells practices the '291 patent?

MR. FLYNN: Object to form, beyond the scope, calls for a legal conclusion.

A. Well, in addition, it doesn't matter because let's say that they -- we already talked about this. Let's suppose that they -- the customer sourced their end pier kits from a third party. What matters is customer demand for the system.

I would have counted in this hypothetical the mid pier kit, the messenger wire, and the hangers. That means I would have undercounted sales to that customer of the end pier kits, which means that I would have undercounted CAB sales and therefore understated its success.

In other words, I would have been conservative. And that's fine with me.

Q. Well, let's suppose this [redacted] entity only ever [redacted]. Would those be practicing sales?

A. It's a hypothetical question. I have no idea.

Q. You just presented a hypothetical and performed an analysis based on that hypothetical. I'm asking an extremely similar hypothetical, only instead of assuming the customer purchased a component, I'm asking you to assume that the customer has not purchased a hanger with multiple cable carrying surfaces.

MR. FLYNN: Object to form.

Q. So given that hypothetical, is it appropriate to allocate sales based on a system that does not practice the patent to the commercial success of that patent?

A. Well, as far as I know, I didn't do that because I asked CAB to give me sales information of standard systems and integrated systems. So that's what I understand is reflected in 2046.

If you think maybe it doesn't, then it would be good to talk to a fact witness about that. But as far as I know, there's no need to answer your hypothetical question because it

doesn't apply to the facts of this case.

Q. If you'd turn to page 5 of Exhibit 2046, it identifies [redacted]. Right?

A. Yes.

Q. You've already testified that [redacted] don't practice the invention. Right?

MR. FLYNN: Object to form, mischaracterizes the testimony.

A. That's -- again, that's my understanding. You asked why were they excluded. The answer is, that's my understanding of the reason.

Q. So CAB gave you sales information for systems that are broader than what is claimed in the '291 patent. Right?

A. No. They gave me sales information that included [redacted], which I excluded.

Q. Do you think it's equally as possible that this [redacted] purchase order in Exhibit 2056 practices or does not practice the '291 patent?

MR. FLYNN: Object to form.

A. I'm not in the habit of attaching probabilities as to whether a product practices a

patent since I, A, have no basis for the probability and, B, don't offer opinions about whether products practice patents because I'm not either a technical or a legal expert.

So there's at least three reasons why I can't answer your question.

Q. If [redacted] never purchased a carrier having multiple -- sorry. Strike that.

If [redacted] never purchased a hanger having multiple cable carrying surfaces for use with the components that they purchased from CAB, wouldn't that be an overcount of the practicing sales for the purposes of commercial success of the '291 patent?

MR. FLYNN: Object to form, asked and answered.

A. In addition, it's something that we'll never know. We don't know what [redacted] purchased.

I think -- I mean, if we go back to [redacted] there's a relative handful of [redacted].

So if they were -- let's just assume that

those kits were erroneously included. It would make no substantial difference in my opinion whatsoever.

But as I said, we have no way of knowing what [redacted] did, so it's going to be one of those things that can't be verified. Even if we assume that the answer to your question is they shouldn't have been included, if they didn't purchase multisurface carriers, we'll never know the answer to that question.

So then the question becomes, well, how wrong could we be in the conclusions if they were erroneously included? And the answer is it would make absolutely no difference to my opinion.

Q. If [redacted] did not purchase multisurface carriers, do you agree that the sales of [redacted] should not be included as evidence of commercial success for the '291 patent?

A. I don't have an opinion. I think it calls for a legal conclusion. As far as I know, it has no practical application. But you're talking

about an edge case. And if I were going to try to answer that question, I would talk to a lawyer.

Q. How do you know that's an edge case?

A. Well, because -- you know, getting back to the level at which I actually care about the data, we asked CAB to produce sales information for standard and integrated systems. We excluded components of those systems that don't have multisurface carriers.

You're saying, well, there might be a system that was purchased which had single-surface carriers as well as other components. And those other components shouldn't be included if the customer never bought a multisurface carrier.

So we don't know whether the customer ever bought a multisurface carrier. We can't answer this question. But the point of it is we excluded it, to the extent we're able to, all the components that might have corresponded to that system.

And the larger point is that CAB sells multisurface carriers and systems having

multisurface carriers. So the intent was to capture the systems that practice the claims of the patent. And whether that is done perfectly given the limitations of the data, I don't know. But whether it's done substantially perfectly, I think the answer has to be yes.

MR. FLYNN: We've been going for about an hour and a half. Can we take a break?

MR. DIXON: Yeah.

(Recess, 11:06 a.m. to 11:21 a.m.)

BY MR. DIXON:

Q. So, Dr. Putnam, before the break we were talking about an instance where a customer might purchase end pier kits, mid pier kits, and no multisurface carriers. Do you recall that?

A. Yes.

Q. You called that an edge case. Right?

A. Yes.

Q. How can you call that an edge case if you have no insight into how customers are actually purchasing individual components of the systems?

A. Well, the answer is, if you look at the

relative sales of, for example, one-carrier hangers, what you're talking about is a -- my understanding is an unusual case, given the way these are marketed. Because one of the main purposes of aboveground cable management is to separate and organize the cables.

So while it's true that CAB sells one-carrier hangers, you're talking about a system sale that comprises exclusively one-carrier hangers to the exclusion of other hangers and then drawing the inference that the other components shouldn't be included.

So if you look at the sales of one-carrier hangers, it's less than $2 million compared with sales of multisurface carrier hangers in the tens of millions of dollars.

So there just can't be that many sales of systems that are comprised end pier kits, mid pier kits, messenger wire, and one-carrier hangers to the exclusion of other hangers because there's so few one-carrier hangers sold.

Q. CAB has had sales of one-carrier hangers

every year from 2016 through 2024. Right?

A. Yes.

Q. Do you know whether or not a system that uses one-carrier hangers needs more or less hangers per foot than a system that uses multiple -- multisurface hangers?

MR. FLYNN: Object to form, relevance.

A. I don't -- I've never asked that question. In other words, since we excluded one-carrier hangers, I didn't see any reason to ask any question like that about them. So the answer is no.

Q. So it's possible that for every hundred feet of messenger wire sold, it may only require ten hangers?

MR. FLYNN: Object to form.

Q. But for --

MR. FLYNN: Sorry.

Q. I'll restart. I apologize for --

MR. FLYNN: I should have waited.

Q. -- the nature of the way I was formulating it.

It's possible for every hundred feet of messenger wire sold it may only require ten hangers, one-carrier hangers, but it could also require a hundred two-carrier hangers?

MR. FLYNN: Object to form, relevance, beyond the scope.

A. Yeah. In other words, all of this is in the context of a system that is -- exclusively has one-carrier hangers. I'm not aware of any such system.

But as to, you know, the requirement -- I'm an economist. So as to the requirement of, you know, how many carriers -- hangers per foot are sold in the various systems, that's obviously not something that I specify.

And given the limited number of one-carrier hangers, as I said, my opinion is not -- which are excluded, my opinion is not going to be changed as to the systems that are sold with multiple-surface carriers or hangers because they constitute the vast majority of the systems being sold, if not all of them.

Q. Assuming there are systems that use one-carrier hangers exclusively, we don't know whether the amount of messenger wire used for those one-carrier hanger systems is the same amount of messenger wire used in a two-carrier hanger system using the same number of hangers?

MR. FLYNN: Object to form.

A. I mean, you're asking me fundamentally an engineering question. I don't know why I would know this. And so -- and you're asking about a system that as far as I know doesn't exist.

So the question is better directed at somebody who can answer a hypothetical question about a hypothetical system.

Q. I guess the ultimate question is, can you draw any inference about the number of mid pier kits sold based on the number of one-carrier hangers sold?

MR. FLYNN: Objection, relevance.

A. You know, I don't -- I guess I would say this. In the context of systems that are designed to -- that are largely, if not exclusively,

designed to carry multiple types of cables, I'm not sure what the purpose of a one-carrier hanger is. That's not really my job, particularly since I've excluded sales of those hangers from my analysis.

Your -- you seem to be driving at some sort of relationship or proxy such that maybe a certain number of mid pier kits should be removed based on the hypothesis that they were sold as part of an exclusively one-carrier system. As far as I can see, there's no evidence of such systems and therefore no evidence that any mid pier kits should be excluded.

So my recommendation would be that if you thought that there were such systems and you thought that such a relationship existed and you wanted to subtract some mid pier kits from the totals that I've reported, then a good thing to do would be to talk to a fact witness about whether these systems exist, and somebody with enough technological expertise to opine about the relationship between one-carrier hangers and mid

pier kits. But I'm not that person.

Q. And you didn't ask those questions in formulating your opinions in this matter. Right?

A. No, because I don't think that one-carrier systems exist.

Q. Whether or not you ultimately agree with the inference that a cable ring system exists, isn't that [redacted] purchase order that we discussed in Exhibit 2056 some evidence that an exclusively ring-based system exists?

MR. FLYNN: Object to form.

A. It's an evidence of what it is, which is [redacted] bought three parts at a particular time. Whether that constitutes the system that [redacted] purchased is something that I haven't investigated and that, as far as I can see, the jury is still out on.

So that's not enough evidence for me to say, gee, I need to completely change the entire data collection strategy and look at this at a customer level. Because, you know, it's possible that lurking out there, there are one-carrier

systems.

This is not how CAB makes its money. This is not what it advertises to customers. I don't need to do a detailed forensic investigation of how every single customer bought every single system and what their purchases were over the entire nine-year period of the data in order to satisfy myself that the hypothetical situation that you're imagining never existed. I think that's an unreasonable demand.

And no, to answer your question, I don't think that one purchase order is evidence of a system that shouldn't have been included.

Q. I'm handing you an exhibit marked 1006. I believe this exhibit is only Exhibit 1006 in the 139 IPR.

(Exhibit 1006, previously marked, is not attached to the transcript.)

Q. Have you seen this exhibit before?

A. It's not referenced in the documents that I relied upon, so I'm going to say no.

Q. Do you recognize the name Bill Brooks?

A. Yes.
Q. How do you recognize the name Bill Brooks?
A. He's the author of the white paper that was in various versions that CAB sought to have written.
This appears to be the original version of that, then.
He is the author of the white paper, just to finish my answer, that CAB solicited as part of its development of the standard system back in 2014 and its efforts to educate prospective customers about the advantages of the system and overcome their skepticism.
Q. So on what says it is page 3 of 17, it's the -- it should be the cover page of this white paper.
A. Yes.
Q. Do you see the image in the background?
A. Yes.
Q. Is that representing multisurface carrier hangers?
A. That calls for either a technical or a

legal opinion or both. And I am neither, so I have no opinion.

Q. What do you think is hanging off of the messenger wire in that image?

A. A hanger.

Q. How many surfaces do you see there supporting the cable?

A. Well, you know, I mean, I appreciate that you're trying to ask me what appears to be an intuitive question.

But since the number of surfaces is a claim term, I'm just not going to answer questions about terms that are disputed. I see cables. I see a hanger. I see a messenger wire. That's what I see.

Q. If you'd turn to page 15 of this exhibit, do you see the image on this page?

A. Yes.

Q. Exhibit 1006 in the 139 IPR identifies these as cable rings and saddles. Is that accurate?

A. That's what it says.

Q. So it's fair to assume these are cable rings?

MR. FLYNN: Object to form.

A. It's fair to assume that that's what Mr. Brooks called them.

Q. Wouldn't you say that this is evidence of a system not using hangers with multiple cable carrying surfaces?

MR. FLYNN: Object to form, beyond the scope, calls for a legal conclusion.

A. You know, I'm an economist. You're asking fundamentally questions that are phrased in terms of claim language. And I just do not -- will not answer questions about issues beyond the scope of my report.

Q. Is this a hanger system that purports to include cable rings?

MR. FLYNN: Same objections.

A. For purposes of this case, I have -- I don't have the slightest idea.

Q. Exhibit 1006 in the 139 IPR identifies this system as having cable rings. Right?

MR. FLYNN: Object to form.

A. If you're referring to the caption of Figure 6, it refers to cable rings. Yes.

Q. And you've determined that cable rings should be excluded from practicing sales. Right?

A. In consultation with counsel, of course, because it requires a technical and legal opinion. Yes.

Q. So in this example here, shouldn't you also exclude the sale of the messenger wire?

MR. FLYNN: Object to form. Object to foundation, beyond the scope, calls for legal conclusions, calls for technical conclusions. Stop.

A. Yeah. I guess -- the short answer is, I don't know. Talk to a lawyer about that.

Q. When did CAB begin selling its standard system?

A. According to Paragraph 25 of the 139 IPR declaration, CAB introduced the standard system in 2014.

Q. Appendix 2.2 only lists sales from 2015 to

2023. Why is that?

A. Because the sales in 2014 were negligible and because 2015 is the first full year of sales.

Q. Why did you exclude 2024 from sales of these components?

A. Because it's only a partial year. The idea was to compute -- one of the ideas was to compute the compound average annual growth rate.

Q. What components are included in CAB's integrated grounding system?

A. Well, again, according to Appendix 3, there are -- the categories of components are [redacted]

Q. Do you know if each of these components are necessary for CAB's integrated system to practice the '551 patent?

MR. FLYNN: Object to form and to the extent it calls for a legal conclusion.

A. Yeah. I guess I would say, here as elsewhere, practicing the claims of the patent is outside my expertise. So I don't know.

Q. Do you know if the [redacted] are different between the standard system and the integrated system?

A. I know based on Appendix 3 that they have different part numbers.

Q. If products have different part numbers, does that mean that they're different?

A. Well, typically products have different part numbers because they differ in some dimension. But since differences are or could be a disputed fact in this case and you haven't specified the difference, I'm going to say I don't know.

Q. So on page 18 of your declaration in the 178 IPR and page 19 of the 139 IPR, you state in both of these Paragraph 25s that the principal difference between the two systems is that the integrated system also uses the messenger wire not just to support the cable hangers and electrical cables but as the system's equipment grounding conductor. Is that right?

A. I'm sorry. You were referring to page 18

and --

Q. Just to clarify, page 18. And I'm realizing now they have different page numbers between the two exhibits, the exhibit page numbering and the actual declaration page numbering. It's Paragraph 25 in both declarations.

A. Okay. I was on the wrong page. Could you reask your question?

Q. Yes. You state in both Paragraph 25s of your declarations submitted in these matters that the principal difference between the two systems is that the integrated system also uses the messenger wire not just to support the cable hangers and electrical cables but as the system's equipment grounding conductor. Is that right?

A. Yes.

Q. How did you come to that understanding?

A. Based on the way the products are advertised and sold, the declarations of Mr. Bowman and Mr. Smith, and the declarations of Dr. Kern and Dr. Phinney.

Q. You don't cite any of those exhibits in support of the statement in Paragraph 25. Right?

A. Well, right, because I'm not offering this as an opinion. This is just meant to be sort of introductory exposition that lays the foundation for the economic analysis that I'm going to do later which discriminates between these two systems.

Q. Do you know if the messenger wire that's used in the '551 system is -- sorry. Let me restart that question.

Do you know if the messenger wire that's used in the integrated grounding system is different than the messenger wire that is used in the standard system?

MR. FLYNN: Object to the extent that it's beyond the scope of Dr. Putnam's report.

A. Well, my understanding as a layperson is that the integrated system uses a messenger wire as a grounding conductor and that a wire that's used as a grounding conductor is different electrically from a wire that is simply used as a

support system. But beyond that, I have no understanding.

Q. CAB's solar products line consists of hundreds of different products. Right?

MR. FLYNN: Object to the form and to the extent that this is outside the scope of the declaration.

A. Yeah. I guess I would say if that's what you're representing to me, I will take it as a representation. I haven't looked at, quote-unquote, CAB's solar product line.

Q. What do you understand Exhibit 2046 to be?

A. It summarizes sales of four categories of parts which are end pier kits, mid pier kits, messenger wire, and hangers, which together are demanded as part of the claimed system for standard systems and integrated systems.

Q. Do you know whether Exhibit 2046 represents exclusively sales of solar products?

A. Well, I have to say that I don't understand what that means. How are you defining "solar products"?

Q. Do you know whether the parts identified in Exhibit 2046 are exclusively used in solar applications?

MR. FLYNN: Object to form.

A. Well, I think that's the -- I guess I would say that's my understanding.

On the other hand, these are what are called aboveground cable management systems. So the source of the -- the source of the electricity going through the cables is -- derives from a photovoltaic cell I don't think makes any difference. That's my lay understanding.

So no, I don't know how the customer may have -- what each customer's individual application would be. Basically, these are cable systems sold to the solar industry, but I can't verify the source of electricity for every single part number.

Q. Do you know if CAB sells products to any other industry other than the solar industry?

MR. FLYNN: Objection, relevance.

A. Well, yes, in Paragraph 12 of the 178

declaration, it states that CAB develops products that are implemented in industries including mining, solar, utilities, shipbuilding, and many others.

Q. Do you know if the products identified in Exhibit 2046 have been sold to any of the -- let me rephrase that question.

Do you know if the products identified in Exhibit 2046 have been sold to any customers in the mining, utilities, shipbuilding, and other industries?

MR. FLYNN: Objection, relevance.

A. I would say that, A, it can't be ruled out and, B, I don't think it matters.

The target customer is somebody in the solar industry. If somebody in the solar industry wanted to buy cable management products but they weren't in solar, I have no reason to believe that CAB wouldn't sell it to them. But that's not the target market.

Q. If CAB made sales to individuals outside of the solar industry, would those sales -- let me

rephrase that question.

If CAB made sales to individuals outside of the solar industry, would you still attribute those sales to commercial success of either or both of the '291 or '551 patents?

A. I don't see why not. A sale is a sale for commercial success purposes.

Q. Do any one of the components -- strike that question.

Do you have an understanding of whether any one of the components identified in Exhibit 2046 can individually practice the '291 patent?

MR. FLYNN: Object to form and to the extent that it calls for a legal conclusion.

A. Well, I mean, I think -- again, this is -- practicing a patent is a legal and technical conclusion.

What you're asking is if a component of a system can practice a system claim. And my understanding as a layperson is that's a contradiction of terms, so no.

I'm just an economist.

Q. So if you look at [redacted] on page 4 of Exhibit 2046, do you see the top chart that [redacted]?

A. Yes.

Q. Do you know what the units are for those quantities sold?

A. No.

Q. For the purposes of your opinions, do you assume that all [redacted] listed in Exhibit 2046 are able to form -- let me restart that question.

For the purposes of your opinions, do you assume that all [redacted] listed in Exhibit 2046 in association with other components are able to form a standard system?

MR. FLYNN: Object to the form of the question. I think object to the form to the extent that it calls for a technical or legal conclusion.

A. Yeah. I have to say, I don't actually -- I'll have the same objections, probably. But as a

threshold matter, I don't actually understand the question.

Q. So in Appendix 3 of your report, you identify several part numbers for each category of product. Is that accurate?

A. For these six customers, yes.

Q. So for example, you identify, under [redacted]

[redacted]?

A. Yes.

Q. How do you know that those specific [redacted]

[redacted]

[redacted]

[redacted]?

MR. FLYNN: Same objections. There have been some questions and answers in between. I suppose I should restate the objections. Form and to the extent that it calls for a technical and legal conclusion.

A. I'm not aware of any use of an [redacted]

[redacted] other than in a standard or integrated system. So I have no reason to believe that -- except maybe for as a replacement or a repair part or

something like that, the sale is anything other than as part of a CAB standard or integrated system.

Q. Do you know if [redacted] practices a limitation of the '291 patent?

MR. FLYNN: Object to form and to the extent that it calls for a legal conclusion.

A. Well, that would be a good question for Dr. Kern but not for me.

Q. In your declarations, you assume that it practices, though. Right?

A. I assume that the standard system is the system claimed in the '291 patent. But that's a -- A, an assumption based on technical testimony and, B, it is not an assumption about individual limitations.

Q. So you would rely on Dr. Kern to determine whether or not a given end pier kit product number -- let me rephrase that question.

So you would rely on Dr. Kern for his opinion on whether a given [redacted] the '291 or '551 patent?

MR. FLYNN: Objection, form, mischaracterizes the testimony.

A. Yeah. I don't know what it means for a component of a system to practice a system claim, so I don't think the question is well posed.

But if it were well posed, it is true that I would rely on Dr. Kern for any such opinion.

Q. If Dr. Kern expressed no opinion regarding whether, for example, [redacted] practices the '291 patent, would that change your opinions in this matter?

MR. FLYNN: Objection to form.

A. Well, as I said, my understanding as a layperson is that it doesn't make sense to say that a component practices a system claim, so it wouldn't surprise me under those circumstances that Dr. Kern didn't express that opinion.

But the larger point is that what's required of Dr. Kern in order to establish that the systems as they are sold practice the claims of the patent is something I don't have an opinion about because, A, his opinion is a technical

opinion and a legal opinion and, B, the standard of what's required of him also is a legal opinion. And I just know nothing about this.

Q. If Dr. Kern expressed no opinion regarding whether [redacted] is a part of the standard system, would that change your opinions regarding whether commercial success should be attributed to the standard system?

MR. FLYNN: Objection to form.

A. I don't see how. I mean, in the first place, [redacted] is listed as being part of an integrated system, not the standard system.

So it wouldn't surprise me that Dr. Kern, whose focus is the '291 patent and the standard system, expressed no opinion about it.

So I can't think of any reason why my opinion would change based on his silence on a subject that he wasn't asked to opine about.

Q. If Dr. Phinney expressed no opinion regarding whether [redacted] was a part of the integrated grounding system, would that change your opinion regarding whether

commercial success should be attributed to the '551 patent?

MR. FLYNN: Same objection.

A. Again, I don't see why. I mean, I don't have an opinion about what's required of Dr. Phinney in order to establish that the integrated system practices the claims of the '551 patent.

So his silence on a part number is not something I care about. What I care about is his conclusion that the system practices the system claim.

Q. Aren't you relying on Dr. Phinney to identify what components of the system practices the system claim?

A. Well, I'm relying on Dr. Phinney. So let's just start there. As to -- I'm not even sure that it makes sense to say what components of a system practices a system claim.

The components of a system together constitute the system. And the question is whether the system practices the system claim.

But as to whether Dr. Phinney has been successful in demonstrating that the system practices the system claim and whether his analysis of the components is legally sufficient or not is something that I have absolutely no opinion about. It calls for a legal and a technical and another legal conclusion. It's just way over my head.

Q. If it turned out that [redacted] was unable to practice one of the limitations of the system claim like a [redacted], wouldn't you want to know that for the purposes of your opinions?

MR. FLYNN: Objection to form, asked and answered multiple times in various ways in various forms.

A. Well, and -- I'm just the economist. And so the question is, should I count sales of the [redacted] as part of sales of the system?

As far as I know, the answer is yes. You seem to be suggesting that there's some reason why I shouldn't do that. I have no idea what that

reason is on technical grounds.

You haven't actually suggested any reason. So in the absence of a reason not to count the part, I'm going to rely on the combination of consultation with counsel, the technical expert opinion, and the representation of the client that this part is part of a sale of an integrated system which practices the '551 claims.

Q. So I'm handing you Exhibit 2064 in the 139 IPR.

(Exhibit 2064, previously marked, is not attached to the transcript.)

Q. Do you recognize Exhibit 2064 in the 139 IPR?

A. This is Dr. Phinney's declaration.

Q. If you'd go to page 117, Paragraph 304. Sorry. 314.

MR. FLYNN: Did you say page 117?

MR. DIXON: Yes, although I'm realizing now that once again there's different page numbers. Let me clarify exactly what page number I'm referring to and paragraph.

Q. Do you see in Exhibit 2064 in the 139 IPR on page 117 of 135 in the lower right corner, Paragraph 304 of this declaration?

MR. FLYNN: Wait a second. Okay. I'm there.

Q. Dr. Putnam, do you see that Dr. Phinney lists exemplary CAB product part numbers that constitute its integrated grounding system, include [redacted]

A. Yes.

Q. Does Dr. Phinney identify [redacted]1 as constituting its integrated grounding system?

MR. FLYNN: Objection, form. The document speaks for itself.

A. As far as I know, yes.

Q. Where does Dr. Phinney identify [redacted] as constituting the integrated grounding system?

A. It uses the word "exemplary," which as you know better than I is a term of art in describing a class of which the exemplary member is an example.

And so [redacted] is another member of the class of [redacted] is exemplary.

Q. On what basis do you come to that understanding?

A. Because that's what the word "exemplary" means.

Q. Does that mean that all messenger wire product numbers constitute the integrated grounding system?

MR. FLYNN: Objection to form, mischaracterizes the testimony, mischaracterizes the document.

A. Well, I would think that it would, at a minimum, include copper-clad messenger wire, Number 1. Number 2, whether a member exemplifies a class and what the definition of that class is, is obviously subject to technical testimony.

So I'm not going to stray into saying what the boundaries of the class are.

What I am going to say is that my understanding is -- and certainly the implication of the exhibits that I've relied on -- is that [redacted] is another member of the class exemplified by [redacted].

Q. So if a member exemplifies a class -- let me restart that question.

If determining whether a member exemplifies a class and what the definition of that class is the subject of technical testimony, can you point me to where Dr. Phinney performs that analysis?

MR. FLYNN: Object to form, beyond the scope.

A. As I said, my job -- I was not asked in the scope of my assignment to pass judgment on Dr. Phinney's technical analysis.

My understanding as a poor economist is we should count messenger wires that are sold with integrated systems which also, by definition, have

grounding capabilities and that [redacted] meets that definition.

That's an understanding derived from conversations with counsel who, in turn, spoke with the client and with Dr. Phinney. And all I can do is rely on the conclusions of people who are competent to determine whether that part qualifies.

Q. Are you aware of any evidence of record that reflects, whether it's the client or Dr. Phinney, an analysis establishing that [redacted] is within the same class -- actually, let me restart that question. I misspoke.

Are you aware of any evidence of record that reflects, whether it's the client or Dr. Phinney, an analysis establishing that [redacted] is exemplary of a class that includes [redacted]?

MR. FLYNN: Same objection.

A. Well, whether -- you know, this is all technical opinion. My job is not only not to offer technical opinions but not to pass judgment

on those who do.

Dr. Phinney says that [redacted]. As far as I know, [redacted] is a member of that class. But whether it is or not, the larger point is -- the larger question is does a system including [redacted] practice the system claim.

I have no reason to believe that it does not.

Q. Do you know if Dr. Phinney has performed an analysis regarding whether a system including [redacted] practices the system claims?

MR. FLYNN: Objection to form, beyond the scope.

A. I don't -- other than stating that parts are exemplary, I don't think that Dr. Phinney has analyzed every possible combination of parts. And the reason why I don't think he's done that is because I don't think it is necessary to his opinion.

But as I said, I don't -- I'm just an

economist. I'm not a lawyer, I'm not a technical expert, and I don't pass judgment on the sufficiency of a technical expert's opinion about anything, in particular whether a member exemplifies a class, because I'm not competent to do any of those things. I just add up the part numbers for sales purposes.

MR. DIXON: I think we've been going another hour and it's close to lunchtime.

Do you want to go off the record?

MR. FLYNN: Sure.

(Lunch recess, 12:21 p.m. to 1:13 p.m.)

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

MR. DIXON: So just a few housekeeping matters before we get started. In the previous session, I introduced Exhibit 1006 in Case Number IPR2024-00139. It's come to my attention that this exhibit has not been filed previously in the 178 IPR, so I'd like to mark that as Exhibit 1032 in the 1178 IPR.

(Putnam Exhibit 1032 was marked for identification and is attached to the transcript.)

MR. DIXON: And similarly, Exhibit 2064 in the 139 IPR was introduced in the previous session. That also has not been filed previously with an exhibit number, so that will be Exhibit 1031 in the 178 IPR.

(Putnam Exhibit 1031 was marked for identification and is attached to the transcript.)

Q. In Appendix 2.1 in both of your declarations in the table, line H, it says, "'291 plus '551 incremental contribution to growth."

What does "incremental contribution to growth" mean?

A. It means the sales you would expect at the average annual growth rate starting in 2015 with 2023 being the endpoint.

So you're trying to graph the line that is shown in Figure 3 and Figure 4.

In other words, what are the sales that you would expect had they grown smoothly over this eight-year period.

Q. So you're not saying that these numbers represent incremental contribution to growth due to the '551 patent?

A. No. It's the combination of the two.

Q. Okay.

A. I should say it's the combination of the two over the entire period for the years 2015 through '17. Obviously the integrated systems aren't being sold.

Q. So in Paragraph 27 of your declaration in the 139 IPR, you state that Dr. Phinney analyzed whether the additional features of CAB's integrated grounding system are claimed in and are coextensive with the inventions claimed in the

'551 patent.

A. Yes.

Q. Is that accurate?

Is it your understanding that the -- Dr. Phinney opines that the additional features introduced in CAB's integrated grounding system are what are claimed in and coextensive with in the '551 patent?

MR. FLYNN: I'm going to object to the form.

A. Well, if your sentence is -- if your question is -- I think your question just quotes the statement in Paragraph 27, the additional features -- is it my understanding that the additional features of CAB's integrated grounding system are claimed in and are coextensive with the inventions claimed in the '551 patent.

If that's the question, then the answer is yes, that's my understanding.

Q. Does Dr. Phinney in his declaration state anywhere that he was analyzing the additional features of CAB's integrated system with respect

to the '551 patent?

MR. FLYNN: Objection to form. The document, Dr. Phinney's declaration, speaks for itself.

A. Well, "additional" in this context means in addition to the features of the '291 patent. Since Dr. Phinney's analysis is about the features claimed in the '551 patent, I don't know that he uses the word "additional," but it's clear in the context of CAB's systems the '551 features are in addition to the features of -- the '291 features.

So I don't know that he would have a separate opinion as to whether they are, quote-unquote, additional or not. They're not found in the '291. They are found in the '551. They're not found in the standard system. They are found in the integrated system.

And so I called them additional features and I have throughout my declaration.

Q. Dr. Phinney maps the claims of the '551 patent to the entirety of the integrated system, not just, for example, the messenger wire.

Correct?

A. Yes. It's a system claim so you wouldn't map it to a component. That's right. Or only to a component.

Q. How do you define "commercial success"?

A. Well, I think this is described in Paragraphs 19 through 21 of the 139 declaration and similar paragraphs in the 178 declaration.

Q. In those paragraphs that you just mentioned, you discuss a supply side and a demand side. Is that right?

A. Yes.

Q. Is it your opinion that you need to evaluate commercial success from both a supply-side and a demand-side perspective?

A. Well, it says at the end of Paragraph 21, "In short, to explain success in a market, one must consider the decisions made on both sides of the market."

So I think, leaving aside what's legally required, the outcome is the product of what buyers and sellers do. And in general, you need

to understand what they both do if you're going to explain the outcome.

Q. Do you have an understanding of whether you must evaluate commercial success from both a supply-side perspective and a demand-side perspective when performing a commercial success analysis?

MR. FLYNN: Objection, asked and answered.

A. Yeah. As I said, I'm not trying to state the law or say what one, quote-unquote, must do. I'm just saying as an economist, a market consists of buyers and sellers.

You could imagine scenarios in which examining only one side of the market might mislead you as to whether a product was successful or not.

For example, if you made enormous sales but you were selling them at a loss, then that might not be considered success.

So you sort of need to look at both sides of the transaction to make sure that it satisfies what an economist would think of it as being a

successful set of decisions.

Q. Would determining if sales were made at a loss be an example of evaluating commercial success from the supply-side perspective?

A. Yes. Because you're looking at the seller's other decisions. You're looking at the seller's cost, comparing that to the seller's price. If the price is less than the cost, then you're selling at a loss. So that's a supply-side analysis.

Q. And so from a supply-side perspective, is it your opinion that commercial success occurs when a firm makes a profit from supplying the product?

A. Well, it depends on -- I mean, the short answer is yes, that's what it says in the first sentence of Paragraph 19.

In some fact patterns, the firm is not making a profit on its initial sales, although it's expected to make a profit. And so a loss is not proof of failure if it's temporary. But I didn't go into that here because I don't think it

applies.

Q. When you say "I don't think it applies," what are you referring to by "it"?

A. Well, "it" means selling at a loss in expectation of eventually recouping those losses as profits. So start-up software firms sometimes spend an enormous amount of money on infrastructure and marketing and creating network effects and they lose money for several years. But they go public and they're worth billions of dollars. And that's because investors think that there eventually will be a positive profit stream, and so those initial losses are temporary.

I don't think that really fits the fact pattern here. It does fit some fact patterns.

Q. Is it your opinion that a product is not commercially successful if a business is not making a profit on the sale of that product over a given period of time?

MR. FLYNN: Objection, asked and answered in a different form.

A. Yeah. I mean, a loss is a -- the question

is, why are you making a loss and what do you and your customers and investors expect in light of that loss?

So it is -- a loss is neither necessary nor sufficient to defeat an assertion of commercial success.

Q. So you say it's neither necessary nor sufficient to defeat an assertion of commercial success.

If a firm is making a profit as opposed to a loss, what else must be true for the product to be considered a commercial success?

MR. FLYNN: Object to the form.

A. Well, I think it -- I mean, again, insofar as you're answering -- you're asking a legal question, I have no opinion.

Economists look to various indicia. Since firms are set up in order to make profits, then profitability is an important indicator of success. But you also want to look at things like market share, market share growth.

And then as you get into the nexus

analysis, what's the reason for the market share and the market share growth.

So it's kind of a holistic analysis of how the firm is doing and why it's doing that, with profit being the first but not the only inquiry.

Q. How would you evaluate commercial success from the demand-side perspective?

A. Well, you look at what are the choices facing customers and do they pick the subject product given their choices and why do they do that.

So if you are looking at a commodity product whose sales are driven by fluctuations in the number of customers, if you're selling hotdogs at a beach on a sunny day or something like that, or ice cream, that's -- customers are buying what's available on the beach because they happen to be there, not because they have sought out that particular hotdog stand on that day.

So you want to see whether customers are -- what their choice set is and then why they select the particular product in question.

Q. Is it your opinion that widespread purchasing of a product is necessary evidence of commercial success?

MR. FLYNN: Object to form.

A. Well, again, I think it really depends on the facts because it depends on what you mean by "widespread."

So I might have very few sales of a very successful product. If I was successful in selling them a rocket to NASA, I might only sell a few rockets. But if I beat out Elon Musk, then that would be evidence of commercial success.

So a dozen rockets could be successful or, you know, a million smartphones could be successful. Or in other contexts, a million smartphones could be not successful.

It just kind of depends on -- you have to scale the number of sales by something that is a plausible reference point. And then your conclusion is, while relative to that reference point, the product is or is not successful.

Q. So defining what a widespread sale

number -- let me rephrase that question.

So defining what constitutes widespread sales depends on selecting an appropriate market reference point?

A. In general, yeah. Widespread is a scale-free number. So you need to be able to attach a -- it's not like a majority market share. That tells you something about what the market share is.

Widespread is not a word that has a number attached to it, so you have to do more work in order to make that number economically meaningful.

Q. What type of evidence would you look for as a reference point for widespread sales?

A. Well, I mean, I think it really depends on the market. It's just hard to answer that in the abstract.

So suppose that large trucks constitute, you know, 10 percent of sales in the United States and that there are five large-truck brands, which means the average market share is 2 percent.

Then you might say in the United States

there are widespread sales of this truck if its market share exceeded the average large-truck market share, even though the market share is only 3 percent.

So, again, you have to come up with a benchmark that makes sense and then evaluate the product sales relative to that benchmark.

It's hard to know how to do that in a -- in the abstract.

Q. So I think in both of your examples you're looking at sales figures for comparable products. Is that fair to say?

A. Well, a market is a collection of substitutes, and so you can't have market shares until you define the market.

So you need to figure out what a collection of -- a reasonable collection of substitutes is and then you figure out the share of the sales within that market.

So calling them comparable I think is not the right word. Asking if there's substitutes is really the right way to think about that.

That said, people argue, particularly in the context of antitrust, about what the definition of the relevant market is.

So it's not like there is an agreed-upon definition that everybody can just resort to and say this is the correct market share or this is the correct definition of the market and therefore from that that you can compute the correct market share.

Q. But you do need to find some definition of what the market is to evaluate whether there's been widespread sales?

MR. FLYNN: Object to form.

A. Well, I wouldn't say -- that's a common technique. It's not a necessary technique.

So for example, in this case I didn't define a market because there's no -- there isn't market share information, as far as I know, of any kind available.

If you are going to define a market, you would want to probably include things like trenching, which is not even a product, and cable

trays. But we don't have any data on how those things are used, so we couldn't construct a market and then therefore compute market shares.

That said, there's very strong evidence of rapid sales growth by CAB, so we don't need market share evidence in order to conclude that there's widespread sales.

Q. Did you search for market share data in preparing your opinions in these matters?

A. Yes.

Q. And you didn't discover any market share information in researching market share data?

A. Nothing that I could use, no. Nobody, as far as I know, collected information on trenching and -- because trenching is not a product. It's a technique for installing cable.

And I found no evidence on cable tray sales. So we couldn't construct a market or compute market shares, but we did try.

Q. Can rapid sales growth alone establish that there have been widespread sales?

A. It can. But typically you would need

other facts to see whether it does.

So if I decided to sell a Mercedes for $10,000, I would experience rapid sales growth. But I'd be selling it at a loss, and so that would not be considered a commercial success in that market.

There are other markets where I might do something similar and sell at a loss. But because I was locking in customers or creating network effects, that temporary loss would be expected to yield long-term sales if they were profitable.

So you'd just have to go through and ask what the reason for the growth is and what that implies about future sales and future growth.

Q. Over what period of time would you need to observe rapid sales growth to consider -- let me rephrase the question.

Over what period of time would you need to observe rapid sales growth to conclude that there have been widespread sales?

MR. FLYNN: Objection, foundation.

A. Well, I'm not sure that there is a

logically necessary relationship between sales growth rates and widespread sales.

So for example, if I sold one car this year and two cars next year and four cars the year after that, my annual sales growth rate would be 100 percent per year, which is incredibly rapid.

But after ten years I would have sold a thousand cars. So the fact that I have 100 percent sales growth for ten years does not imply that I have widespread sales of cars. So I don't think you can -- without more, one doesn't imply the other.

Q. But it's your opinion that the evidence you found of rapid sales growth by CAB alone is sufficient to show widespread sales?

A. No. I would say in combination with, again, a proper benchmark, which is what's the rate of growth of the industry over the same time period.

Q. We talked a little bit about nexus earlier. Can you remind me again what your understanding of nexus is?

A. Are we talking about actual nexus or presumption of nexus?

Q. Actual nexus.

A. Actual nexus means that the inventions claimed in the patent are a substantial cause of commercial success.

Q. Is it your opinion that to determine whether there is an economic nexus between the commercial success of a product and an invention, that one needs to examine both the supply and demand sides of the market?

A. Well, I guess I would say that there is often evidence for a nexus found on both sides of the market because on the supply side the seller has to offer the feature in question. The question is why did the seller do that. And the buyer has to buy the feature in question, and the question is why did the buyer do that.

So you can ask causal questions on both sides of the market. Whether you have to is something I don't have an opinion about.

Q. In Paragraph 24 of both of your

declarations, you essentially state that a supplier advertising a given feature could be evidence of nexus between the product and the patent. Is that accurate?

A. Yes.

Q. How does advertising of a given feature support a finding of nexus?

A. Well, firms advertise to customers in order to get them to buy things. And so they typically advertise the things that they think that customers will find attractive.

Whether the customer finds it attractive in fact is a demand-side question. But the fact that the supplier is advertising it means that the supplier thinks the customer will desire it.

So given you've got a limited amount of space to advertise features that cost money to advertise and you're trying to differentiate your product from competitive products based on features, the fact that an advertiser points to a given feature is at least preliminary evidence that that feature may be a driver of demand.

Q. If a feature is not advertised, is that at least preliminary evidence that the feature is not a driver of demand?

A. Well, I mean, it depends. A product may be advertised as reliable and the consumers want reliability because they don't want it to break down, but they may not know why a product is reliable.

So there's all kinds of things that are put in a car that are not separately advertised that make it reliable.

The car manufacturer advertises reliability, not the type of metal that's used in the transmission that keeps the transmission operating for 200,000 miles instead of only 100,000 miles.

So you've got to ask yourself what does it mean for the manufacturer to, quote-unquote, advertise a feature

Q. Do you think advertising reliability is sufficient to establish a nexus between, for example, a patented alloy of metal and the car,

sale of the car?

MR. FLYNN: Object to form and to the extent it calls for a legal and/or technical conclusion.

A. Well, I guess I wouldn't say it's sufficient. It would be -- it really depends on the facts.

So let's just suppose that a complaint about a particular brand was its transmissions broke down too quickly and the manufacturer addressed that by changing the alloy used in the transmission.

Consumers don't have -- they don't care anything about the alloy, as such. They care about the transmissions not breaking down.

So when the manufacturer says our transmissions are now more reliable, you may be able to discern that the alloy is a means to that end and so consumers care about that.

But what they care about is the additional reliability, not the alloy as such. You just have to sort of reason through and say is there a

causal link there. And that's going to depend on the facts.

Q. If a company advertises, say, four features of a product and only two of those features fall within the scope of the claims, how do you determine whether it's the two claimed features driving demand or the two unclaimed features driving demand?

A. Well, it's a great question.

MR. FLYNN: I'm glad I didn't object. It would definitely have made me look bad.

A. Well, in other words, it's a classic question of being able to prove causation. And so -- and the answer to your question is it depends on what data are available.

So sometimes -- in general, the way causal inference works is you look for differences across circumstances and see whether the presence or the absence of a particular factor changes the outcome.

So a classic way to analyze your question would be to say is there a product that is --

start with the same.

Does the same product advertised but doesn't have the two claimed features but does have the other two features that are not claimed and how do those -- how are the outcomes different.

So if by adding the two claimed features you cause sales to increase, then you can draw the inference that those two claimed features were the source of the increase.

And then there's a variety of ways statistically and otherwise to get at a difference in outcome associated with a difference in inputs without being more specific.

I don't want to bore you with that. But that's sort of the philosophical approach, to try to see if there's a difference that you can identify.

Q. So if you can draw the inference that two claimed features were the source of the increase because adding them caused sales to increase, can you also draw the inference that the two unclaimed

features are not driving the sales increase?

A. Well, I mean, this is -- I should just make clear, this is a hypothetical example that has nothing to do with this case.

I think you would draw the inference that the two claimed features are the source of the increase. It doesn't mean that unclaimed features are not also substantial causes of success. It doesn't look like in this example they're causes of additional success.

The other point is that features interact. So it's sometimes the case that a patented feature makes another feature more valuable. And again, that just depends on the facts.

Unfortunately, decomposing causation is not usually as simple as just adding up the four effects and getting 100 percent causation and saying here is how we decompose the total success into the four potential causes of success. It's just harder to do than that.

Q. You concluded that CAB's standard system and integrated system are both commercially

successful. Right?

A. Yes.

Q. Was that based on your analysis of CAB's excess sales?

A. Partly, yes.

Q. What else did you use to conclude that CAB's standard system and integrated system are both commercially successful?

A. Well, we looked at total sales, sales growth, other potentials of sources of causation, competition. I guess sort of, you know, all the standard things that an economist would do to analyze a market. And obviously the growth rate of the market itself, which is the proxy by the installation of new capacity in the utility-scale solar market.

Q. What were the other potential sources of causation?

A. Well, there could -- in other words, I don't think there are other potential sources of causation.

You're trying to rule things out, so

you're asking questions like, well, did they change their pricing strategy or did the government mandate the purchase of this product so that there was an exogenous demand shift.

Or you know, did something else happen that would -- so essentially you would say the reason why CAB is doing so well is because of X and it has nothing to do with these inventions.

And the answer is, there is no X. So you're kind of asking for members of an empty set. There are no other -- having investigated, I don't think there are other things that caused CAB's success.

Q. Other than the potential sources of causation and the questions you asked in that analysis -- let me rephrase that.

Other than the questions you asked and just recited in your response, what other questions did you ask to evaluate whether there were other potential sources of causation?

A. Well, I think, as I said, you know, is there -- is there a price-based explanation.

In other words, did they decide all of a sudden to sell at a loss for some reason. Is there a competitive explanation like a rival firm that formerly had been competing with them went bankrupt and so all the demand shifted over to CAB.

I'm making stuff up because markets are incredibly complicated and there can be many reasons why a firm sells what it does.

So you're sort of looking at this and saying what is there in this story that has caused sales to increase so rapidly?

And it's not like you have a checklist of 37 things you need to rule out. Because you just read the story and you say there doesn't appear to be anything else here that is causing a shift in demand other than the fact that this is a productivity improvement and it reduces costs and increases reliability and ease of maintenance for a wide class of consumers. That's the story.

Q. Do you know if CAB changed its pricing strategy between 2014 and 2024?

A. I'm not aware of any evidence of that, and their marketing materials don't suggest they were competing on price. To the contrary. Until AWM came along, they were the only firm offering this product.

So when you're in that position, you don't typically -- and this is no exception, as far as I know. You don't lower prices when you're the only seller of a good that people demand.

Q. Do you raise prices when you're the only seller and you're in demand?

A. Well, I mean, I guess the question is relative to what.

When CAB started selling, they were the only seller. If you're asking whether they raised prices over time, the answer is I haven't analyzed that.

Q. If CAB doubled the price of its hangers every single year, couldn't that be an alternative source of significant sales growth?

A. Well, it wouldn't be an alternative source. It would be a manifestation of the fact

that consumers are willing to pay increasing amounts of money for a product that they nevertheless demand.

So it's not like it's a substitute explanation. It is what consumers are paying for is assuming that the nexus exists. What they're paying for is the inventions. And the higher price is simply just a manifestation of -- would be a manifestation of CAB's ability to exploit that demand.

But as an empirical matter, that's not what's happened.

Q. But you didn't evaluate whether CAB has changed its pricing between 2014 and 2024. Right?

A. Well, no, because the context of this question is are there alternative explanations for sales growth.

And so you'd be concerned if they had cut their prices and that that's what was driving the sales increase, because that might be an alternative explanation.

Then you switch to say, well, what if they

increased their prices? And then I'd say if they increased their price, then price cutting is not an alternative explanation.

Q. Do you know for certain whether or not CAB has cut its prices?

A. As I said, I haven't looked at CAB's prices, but they haven't -- they're still selling at a profit, as far as I know. So that's the first point.

The second point is if they've cut prices, it would be difficult to determine whether -- the reason.

A reason might be competition from AWM. So you've got nefarious reasons as well as potentially benign reasons. And it's hard to discriminate between those two without doing a further investigation, which is beyond the scope of this hearing.

So I didn't investigate pricing because there's no evidence that price decreases are the basis for sales going up by a factor of 36 in an eight-year period.

Q. Is competition always a nefarious reason for price cuts?
A. If it's illegal.
Q. Do you have any basis to conclude that competition from AWM is illegal?
A. Other than the accusation of an infringement?
Q. You haven't performed an analysis regarding whether AWM's products infringe either the '291 or '551 patents. Right?
A. Of course not. I'm an economist. That's a technical and legal analysis.
Q. And you said that as far as you're aware, CAB is still selling its standard system and integrated system at a profit?
A. Yes.
Q. Did you evaluate profit in rendering your opinions in these matters?
A. Beyond observing that they're selling at a profit, no.
Q. What evidence do you have that they're selling at a profit?

A. Well, if they weren't selling at a profit, they would have to be covering their losses somehow or another, which means they have to be raising capital. That would be -- in addition to being expensive, would be counter to the mission of the organization, which is to be able to hire disabled people to help manufacture the product.

So selling at a loss is unsustainable and inconsistent with that long-term mission. So therefore, they must be selling at a profit that is sufficient to maintain the mission of the organization.

Q. Do you know if CAB receives government funding to support its mission of employing disabled people?

A. They may, but it wouldn't change my opinion.

Q. If they received several million dollars of government funding to support their mission of employing disabled people, couldn't that offset a loss?

MR. FLYNN: Objection, form, foundation,

relevance.

A. There's no evidence of that, Number 1. And Number 2, the question is whether they're selling these products at a profit, not whether the organization receives government funding for some purpose.

These products are not being sold at a loss.

Q. Can you point me to an exhibit that shows definitively in financial terms that products are not being sold at a loss?

A. No, because I don't think it's -- it would be entirely inconsistent with the nature of the organization and the growth of sales.

If sales are going to grow this rapidly, you're selling at a loss, that means what you've done is you're rapidly digging yourself a bigger and bigger hole that you've got to come up with, be able to pay for in some way or another.

That's not what's happening. CAB is not digging itself a bigger and bigger hole. This is a highly successful product that only makes

sense -- that would only -- should and only would be sold if you could make money on it, particularly when you're the only seller of that product.

There would be absolutely no reason to sell it at a loss. It would be entirely inconsistent with profit maximization.

So I don't need to go out and prove that the sky is blue because the sky is blue.

Q. Do you have any financial evidence that CAB is not digging itself a bigger and bigger hole?

A. Nothing in the record indicates that's the case.

Q. Nothing in the record indicates that they're making a profit, though, either. Right?

MR. FLYNN: Objection, asked and answered.

A. Well, I disagree. I think that everything in the record indicates they're making a profit. But this would be -- fundamentally be a question for a fact witness, if you cared about it, which I don't. They are clearly selling this successful

product at a profit.

And the amount of profit will become relevant if this case goes to district court and there's a damages analysis because then it will be the amount of profit that AWM caused CAB to lose.

But at this point in the proceedings we're talking about only validity; there's no point in trying to figure out how much profit CAB is making.

Q. You testified earlier that confirming an entity is making a profit on the patented product is necessary but not sufficient to establish commercial success. Is that right?

A. I don't think I said it is necessary. You could have a situation where a firm is losing money temporarily in the expectation it will make money in the future. And that, in fact, is the fact pattern for a large number of startup software companies, but I don't think it's the fact pattern here.

Q. So here it would be necessary but not sufficient to establish that an entity is making a

profit on the patented product to establish commercial success. Right?

A. Again, it would depend on the facts. So let's say, for example, that CAB decided to build a larger factory and in the year that it built that larger factory it lost money.

That would be another example of an investment made today in expectation of higher profits in the future in order to pay for that investment.

So without going into a whole set of analyses that I don't think are necessary, given these facts, I can't answer the question in the abstract whether the proof of profit is a necessary condition.

Q. I'm not asking in the abstract.

I'm asking in this specific situation, would it be necessary but not sufficient to establish that CAB is making a profit on the integrated grounding system to establish commercial success? Is that statement accurate?

MR. FLYNN: Object to the form of the

question.

A. Well, you're quoting from my Paragraph 19 of my report, at least part of it. So I'll just finish the sentence. Other things equal, the answer is yes.

Q. In this specific situation, would it be necessary but not sufficient to establish that CAB is making a profit on the standard system to establish commercial success for the '291 patent?

A. I haven't asked that question with respect to the '291 patent specifically, and I'm not sure how one would answer it.

Q. So you just referred to Paragraph 19 where you say, "Widespread sales of that combination at a profitable price is necessary but not sufficient evidence of commercial success, other things equal." Is that right?

A. Yes.

Q. What do you mean by "other things equal"?

A. Well, let's just back up for a second.

This paragraph, unlike your previous question, refers to economic principles. That's

the title of this section. And so it is a statement made in the abstract.

In the abstract, firms need to make profits in order to be considered successful. So if you're going to argue that a firm is successful, you need to say what's the product being sold and is it being sold at a profitable price. And at that price, how much are consumers buying.

If a large number of consumers are buying the product or the combination of features at a profitable price, then that is a necessary condition of long-term success.

Things that might not be equal are that the long term that you've defined it to be is not a sufficiently long term. So you've got startup costs, in which case you've got short-term losses but long-term expected profit.

So you've got to weigh whether -- as I mentioned, whether these other factors at work that cause the firm not to be making widespread sales of a profitable combination but that

nevertheless cause the market to perceive the firm to be -- to have value, you just have to see whether those factors apply.

So are they the same as between situations or are they not the same.

Q. In these matters, you're not aware of any other factors at work that cause the firm not to be making widespread sales of a profitable combination, are you?

A. When you say "these matters," you mean the two IPRs?

Q. Yes. That's right.

A. No, I'm not aware of any other factors that -- I don't think the firm is losing money. I'm not aware of factors that would be -- would indicate it was losing money or would be causing it to lose money because I don't think it is losing money.

Q. So for the purposes of these IPRs, would you agree that it is necessary but not sufficient to establish that the integrated system and the standard system are being sold at a profitable

price?

A. Well, I don't -- I guess what I would say is this, I don't think there's evidence of unprofitability. If there were evidence of unprofitability, then I would want to consider -- I would want to ask the question why.

So saying that, I'm not going to get hoisted on your petard by saying it's necessary to show a profit because I don't think it is necessary under these circumstances.

It's necessary for a person trying to prove that the product is not successful to show that it's not profitable, in which case if they do we can discuss why that might be.

Q. But in Paragraph 19 of your declarations, you say the opposite. You say that sales at a profitable price is necessary evidence of commercial success, not the opposite. Right? Let me rephrase that question.

In Paragraph 19 of your declarations, you say that sales at a profitable price is necessary evidence of commercial success, not that it's

necessary for a person trying to prove that the product is not successful to show that it's not profitable. Right?

MR. FLYNN: Objection, form, misstates the document that it purports to quote.

A. Well, I mean, when we say something is necessary, the question is necessary to what.

Commercial success is a -- fundamentally a rebuttal position. So I'm trying to say that I'm not aware of any evidence that CAB is not profitable. It's been phenomenally successful. It's growing at over 50 percent per year, it's the only seller of the product in its product category, and its mission is the long-term sustainability of its workforce.

None of that is consistent with a firm that is losing money. And I'm not aware of any evidence that it's going to the capital markets to sustain losses, which would be a -- necessary for it to do in order to make -- if it were selling unprofitably.

And since the sales are growing so

rapidly, it would be doing that -- digging itself a bigger hole year after year very rapidly. It would have to cover its costs in some way or another.

There's zero evidence that the firm is doing that to itself. It doesn't make any sense. So I don't see any reason to go out and try to establish the profitability of the firm, given the absence of any indication that it's anything other than profitable.

But maybe somebody else does. Maybe they think that the firm is not profitable and that despite its widespread sales it's losing money.

If that's the case, I'm happy to consider the evidence. But I don't feel like I have to go out and prove in an accounting sense that it's profitable because none of the indicia of unprofitability are present here.

Q. Are you aware that the patent owner has the burden of establishing commercial success?

A. Yes.

Q. But you just said that establishing

commercial success is fundamentally a rebuttal position. Right?

A. Well, because the patent owner doesn't have to prove validity. The petitioner has to prove invalidity. That's what I meant.

So yes, you have to prove commercial success, but you don't have to show as part of that an income statement saying here is how we know that the product is profitable if none of the indicia of unprofitability are present, as they are not present here.

Q. Wouldn't it have been easier to just look at an income statement to determine whether these products were profitable?

MR. FLYNN: Object to the form of the question and relevance.

We've been going for about an hour and a half. Can we take a break?

MR. DIXON: I'll wrap up in one more question.

A. Well, I mean, easier for whom?

As I said, you may not care about running

up the costs of an organization devoted to helping blind people lead meaningful lives, but I don't feel like running up their bill.

I see nothing about this that is necessary in the sense of going and looking at an income statement. Because to an economist, it makes no sense to figure out the profit margin on this particular product line when it's obviously been a successful product, and losing money on this product is counter to the organization's core mission.

So you might think that it would be a better move if I had done that. I disagree.

Q. Do you know what CAB's costs of production are?

A. I don't.

MR. DIXON: Okay. We can take a break.

(Recess, 2:28 p.m. to 2:42 p.m.)

BY MR. DIXON:

Q. Dr. Putnam, do you know how much capital CAB invested in its standard system?

A. No.

Q. Do you know how much capital CAB invested in the integrated grounding system?

A. No.

Q. Do you know whether CAB's prices for the standard system are above its full cost of production including invested capital?

A. Well, that's a definition of profit. So I would say that I -- if we assume, as the evidence indicates, that CAB is profitable, then the price is above the cost of production less capital, but I don't know by how much.

Q. Because that's an assumption, not based on numbers?

A. Well, I would say it's an assumption based on the facts of the case, which don't include an analysis of CAB's financials.

CAB is a nonprofit. So if you're trying to figure out how to allocate costs across product lines, it becomes very complicated. So I just don't see any reason to incur those costs.

Q. So you didn't perform the analysis?

A. Of the profit margin? No, I did not.

Q. Do you know how many different customers have purchased CAB's standard system?

A. I didn't count the number of customers. No.

Q. Did you count the number of customers for CAB's integrated grounding system?

A. No.

Q. And we discussed market share data a little bit before. Do you know what CAB's market share is?

A. Well, we haven't defined a market, Number 1. And we don't have the information on the products that CAB competes with; for example, trenching, which is not a product.

So there is no market for which to compute market shares; therefore, there are no market shares.

Q. So you're saying it's impossible to establish what the market would be for CAB's integrated grounding systems?

A. Well, given the data available to us. In principle, you could go out and survey everybody

who has solar capacity and ask them how they manage their cables, but that would be a Herculean task.

Q. It would also be a Herculean task to establish what the market would be for CAB's standard system?

A. Well, you wouldn't say the market for a particular competitor's product. You would say the market for the collection of substitutes for that product along with that product. And establishing that market would be a Herculean task. That's right.

Q. So in Paragraph 36 of your declaration in the 178 IPR, in Paragraph 37 of the 139 IPR, you discuss evidence of customer demand. Is that right?

A. You said Paragraphs 37 through 39?

Q. I only identified the first paragraph of that section. Paragraphs 37 through 39 in the 139 IPR and Paragraphs 36 through 38 in the 178 IPR.

A. Yes.

Q. And the first sentence of paragraph -- of the first paragraph in that section states that several prominent players in the solar power production industry have employed CAB systems for their solar projects and/or released studies and reports that analyze the benefits of CAB systems. Is that accurate?

A. Yes.

Q. And then you go on to cite the Smith declaration, I believe, and mention SunEdison and Brooks Engineering. Is that accurate?

A. Yes, as examples.

Q. How do you know that SunEdison is a prominent player in the solar power market?

A. I don't think I characterize them as a prominent player. I say they were -- that sentence refers to solar companies and industry participants.

Q. And you say, "Several prominent players in the solar power production industry have employed CAB systems for their solar projects and/or released studies and reports that analyze the

benefits of CAB systems."

A. Yes.

Q. So you're saying that SunEdison is not a prominent player in the solar power production industry?

A. I'm not saying it is or it isn't. I'm just saying in the sentence it refers to prominent players. It is not the same sentence as the sentence that refers to SunEdison.

Q. Do you know if SunEdison is a prominent player in the utility-scale PV market?

A. I don't have an opinion one way or the other.

Q. And when I say "PV," you understand that I'm referring to photovoltaic or solar?

A. Yes.

Q. Do you know if SunEdison went bankrupt in 2016?

A. That's my understanding. Yes.

Q. So at any rate, they're not a current player in the solar market. Is that accurate?

A. I think that's correct.

Q. And you also mentioned Brooks Engineering in the same sentence. Right?

A. Yes.

Q. Is Brooks Engineering a prominent player in the solar market?

MR. FLYNN: Object to form.

A. Well, I don't think Brooks Engineering is in the market. It's a consulting firm, and it's referred to by Mr. Smith, Mr. Bowman, Mr. Novak, and Dr. Kern, I think.

Mr. Brooks is referred to as the guru of the industry, so I think he is personally prominent. His firm is -- as I said, is not in the solar market.

Q. And I think you mentioned this earlier, but Mr. Brooks issued several white papers regarding CAB's solar products. Is that accurate?

A. Yes. Or a white paper that he continued to revise. But yes.

Q. Do you know if he was compensated for issuing those white papers?

A. I don't know the nature of any agreement

that he might have with anybody.

Q. Do you think it's relevant to your statement that CAB has received endorsements from industry participants such as Mr. Brooks? Let me restart that question.

Do you think it's relevant that Mr. Brooks was paid to release his white papers regarding CAB's solar products in the context of your contention that there's customer demand?

MR. FLYNN: Objection, relevance.

A. Well, I think your question is does it matter that Brooks Engineering got paid if it gave an endorsement to CAB. The answer is maybe.

I think the purpose of Mr. Brooks's paper was not to endorse CAB as such but to explain, as it says in Exhibit -- I think you numbered it as 1032, to explain why it is that CAB meets the National Electric Code, which is not so much an endorsement as a technical analysis.

I would expect that in order to obtain a technical analysis CAB would have to pay somebody who was knowledgeable. Whether that also became

an endorsement at some point along the line is, I guess, a different question. But I don't think even if it did it undermines the technical analysis that Mr. Brooks engaged in over this multiyear period.

Q. How does Exhibit 1006, identified as that exhibit in the 139 in Exhibit 178 -- sorry. Strike that.

How does this exhibit, which is Exhibit 1006 in the 139 IPR, and Exhibit 1032 in the 178 IPR, how is this probative of customer demand?

A. Well, I think that there's two things.

One is, as Mr. Bowman and Mr. Smith and Dr. Kern, I think, all testified, there was substantial industry skepticism, meaning customers were skeptical that an aboveground cable management system would work and would have -- exhibit the properties that are needed to exhibit in order to make it desirable relative to existing alternatives.

So the fact that Mr. Brooks undertook this

analysis and demonstrated to customer satisfaction that aboveground cable management did possess those attributes means that customers had to change their mind.

That goes both to skepticism and customer demand because whereas they did not demand the system previously, they were subsequently convinced that it was worthwhile, which explains the rapid sales growth.

Q. You used the term "aboveground cable management." Is it your opinion that all aboveground cable management systems practice the asserted -- the challenged patents?

MR. FLYNN: Object to form.

A. Yeah. Again, this is a question about practicing patents, which again is a legal and technical question outside my expertise.

My understanding is that simply saying "aboveground" is not an accurate description of the patents. And so I don't think that everything that is above ground practices the patents.

Q. And we discussed earlier this exhibit also

shows cable rings. Right?

A. Well, that's what Figure 6 says. Yes.

Q. And you excluded sales of cable rings because it was your understanding that they don't practice the asserted -- the challenged patents. Is that right?

A. Well, again, cable rings are a component. The question is whether the system including cable rings practices the claims of the -- the system claims. And I was advised to exclude them.

Q. So how do you know that the customer satisfaction as evidenced by this white paper is connected to either of the '291 or '551 patents?

A. Well, first of all, I wouldn't say that the white paper evidences consumer satisfaction.

I would say that the purpose of the white paper is to address one potential concern of customers, which is do the -- do CAB systems comply with the National Electric Code.

And because obviously if they don't, then that's going to be a problem for them since they have to comply with the National Electric Code.

So all the white paper and particularly the first draft of the white paper, all it's doing is trying to say here is the code. Here is how the system complies with the code. Your skepticism is unwarranted in light of the facts. That's what the purpose of the paper is.

And then the customers have to go out and say, okay, well, show me or give me a demonstration project or let me come and see your demonstration project, or do all the things that a customer does in order to satisfy itself that the product is going to do what the seller says it's going to do.

And that process, according to the testimony, took in some cases the better part of a year. And this paper was just one part of convincing people to change their minds.

Q. If this white paper discusses aboveground cable management systems that don't practice either the '291 or '551 patents, doesn't that indicate that the skepticism allegedly expressed by consumers had nothing to do with the patented

technology?

A. No.

Q. Why not?

A. Well, your question is a double negative, first of all. So stated affirmatively, the paper does address aboveground cable management systems of the kind that are claimed in the '291 and '551 patents.

And customers are skeptical about those systems. They may be skeptical of other systems too that don't have some of the advantages of the '291 and '551 patents. But there's no reason why the paper can't overcome skepticism of at least the inventions claimed in the '291 and '551 patents as well as potentially other systems.

Q. Are you aware of any part of this exhibit that specifically addresses skepticism unique to the '291 or '551 patent?

A. Well, I'm not even sure what that means. And I also don't -- my understanding is that it's not necessary.

So the skepticism concerns things like is

it going to last, how well is it insulated, what about chafing. There are all kinds of engineering problems -- what about wind. All kinds of problems associated with aboveground cable management that consumers were rightly skeptical about.

Your point seems to be they could have applied some of those same reasons to other systems that aren't claimed in the '291 and '551.

And the answer is okay, sure. There's no requirement, as far as I know, that the skepticism must be unique to the patent in order to be properly considered skepticism.

Q. So it's your understanding that general industry skepticism is sufficient to show skepticism for the purposes of secondary consideration?

MR. FLYNN: Objection, mischaracterizes the witness's testimony.

A. No. My understanding is that if I'm skeptical about A and I'm skeptical about B and A is -- and I'm skeptical of them for the same

reasons and Patent 1 addresses A and Patent 2 addresses B, it's not the case that there was no skepticism associated with 1 or 2.

It's just that that was -- skepticism was shared by -- it was shared across a broader class of products than is claimed in either one of the patents.

It can't be the case that -- you can't argue from that there was no skepticism about either patent individually just because the patents don't correspond to an entire product category.

Q. Well, doesn't the skepticism need to be tied to the novel aspects of the patent?

MR. FLYNN: Object to form, outside the scope, calls for a legal conclusion.

A. Yeah. I don't have an opinion.

Q. So outside of SunEdison and Brooks Engineering, what other solar companies or industry participants have endorsed CAB systems?

A. Well, Footnotes 42 and 43 refer to paragraphs in the Smith declaration and the Bowman

declaration, so I would go look there first because they're the ones who are primarily concerned with describing the reaction of industry participants.

Q. But you don't identify them in Paragraph 37, 38, or 39 of the -- your declaration in the 139 IPR or Paragraphs 36 through 38 of your declaration in the 178 IPR?

A. No, because they are exemplary.

Q. If you go back to Exhibit 2.2 of the declaration, this summarizes CAB's sales by categories and components. Is that right?

A. I think you meant Appendix 2.2.

Q. Appendix 2.2. Yes.

A. Yes.

Q. Are these sales U.S.-only sales?

A. I don't -- my understanding is that the vast majority of CAB's customers are in the United States, but I don't think we restricted the sales to U.S.-only sales because commercial success is not a U.S.-only concept.

Q. Do you know what percentage of CAB's

worldwide sales are attributable to the United States?

A. Not off the top of my head. No.

Q. Do you know if CAB's integrated grounding system is purchased only for use in utility-scale solar applications?

A. Again, that's a target market.

MR. FLYNN: Excuse me. I was slow on the objection. I object to the form.

A. I would say that's a target market. But again, I don't know what any particular customer does with any particular set of parts.

Q. Do you know if CAB's standard system is purchased only for use in utility-scale solar applications?

MR. FLYNN: Object to the form.

A. Again, that's a target market. But again, I don't know that -- I don't think it matters for commercial success purposes whether the customer is a, quote-unquote, utility-scale customer or something else.

Q. Do you know if CAB's sales data is limited

to new utility-scale installations?

MR. FLYNN: Object to form, relevance.

A. I think that's the intended use, but it doesn't mean that they can't be retrofit in some circumstances.

The industry is sufficiently new that it's not like you've got lots of old installations that need to be ripped out and reinstalled.

So, again, once again, the target market is new installations, but it needn't be exclusively that, and it doesn't speak to whether the invention is successful if it's also used to retrofit.

Q. Do you know if the systems are also used to retrofit?

A. Well, I think Mr. Smith gives an example of Oak Ridge National Laboratory where the ground is covered with cement, and so it was advantageous to be able to use aboveground cable management systems rather than ripping up the existing cabling.

But I think that that's -- the fact

pattern is by far the exception than the rule.

Q. In Appendix 2.2 of your declaration, you don't segregate sales based on whether they are part of the standard system or the integrated system. Right?

A. Appendix 2.2 doesn't do that. No. That's right.

Q. Why doesn't Appendix 2.2 segregate sales based on whether the components are sold as part of a standard system or the integrated system?

A. Well, I think for the reasons I gave in my report. First of all, it doesn't make sense conceptually to do that because the integrated system is a near-perfect substitute for the standard system. That's the first point.

The second point is that it does do that effectively because sales in the years 2015 through '17 are all standard system sales.

In 2018, there's a transition from standard to integrated.

And in 2019 and beyond, the vast majority of the system sales are integrated.

And I think in 2018 we actually give the breakdown between integrated and standard systems based on the data shown in Exhibit 2056.

So in 2018, integrated sales account for 43 percent of total sales as shown in Paragraph 62 of the 139 declaration. That's the main transition year between the majority standard sales and majority integrated sales.

Q. For any other year other than 2018, do you differentiate sales between the integrated system and the standard system?

A. No. As I said, it was 100 percent in 2017. It's close to 100 percent in 2019 and following. And so -- that's actually a fair amount of work, as I understand, to go through and count things up part by part. We did it for 2018, which is the year in which they're substantially mixed.

Q. And when you say it's close to 100 percent in 2019, you're saying the share of integrated system sales is close to 100 percent in 2019?

A. Yes. I mean, subject to, you know, the

usual delays for contracts and that sort of thing. But my understanding is that the vast majority of customers selected the integrated system once it became available.

Q. It would have been possible to identify standard-system-only sales and integrated-system-only sales in other years, but it's your position that it would take a substantial amount of work?

MR. FLYNN: Object to form.

A. Yes. And yielded very little information because there's no reason to do it for 2015 through '17 when integrated systems weren't sold. And in 2019 and following, the vast majority of sales are integrated systems.

So you'd be going through an increasing amount of data as sales are rapidly growing to verify that an increasingly small share of those sales are standard system.

Q. If you'd go to Appendix 2.1 of your declaration, you identify [redacted] Is that accurate?

A. Yes.

Q. What is [redacted]?

A. Well, let's take it one at a time. So the report in question, which is cited in Footnote D, divides sales into [redacted]

MR. FLYNN: Sorry. I accidentally kicked your foot. Sorry.

A. [redacted]

Q. Why did you use [redacted]
[redacted]?
A. Well, I mean, [redacted]
[redacted]
[redacted]
[redacted]
[redacted]
[redacted]
[redacted]
[redacted]
[redacted]
[redacted]
[redacted]
[redacted]
[redacted]
[redacted]
[redacted].
Q. We discussed retrofitting a bit earlier. Right?
A. Yes.
Q. So by using [redacted] you wouldn't

be capturing [redacted]. Is that right?

A. Yes.

[redacted]

Q. Is your analysis using total capacity as the index reflected in either of your expert reports -- expert declarations?

A. No. Because I don't think it's the right way to think about it. I think [redacted] is the right way to think about it.

All I'm saying is that if you -- for some reason you thought that total capacity was right,

which I don't, you would still come to the same conclusion.

It's easy to do. The document discloses total capacity. So anybody can do it.

Q. But you don't outline how to do that in your declarations?

A. Well, as I said, it's the wrong thing -- it's the wrong way to think about it.

The only question is, oh, well, if I were to look at total capacity, would I be less impressed with CAB's relevant growth rate?

And the answer is no, you wouldn't. You would have still come to the conclusion that CAB's relative growth rate is much higher than the growth of total capacity. So there's no reason -- it ends up being redundant to add in the wrong way to think about the problem in addition to the right way.

Q. So in Paragraph 46 of your declaration in the 139 IPR, in Paragraph 45 of your declaration in the 178 IPR, you state that you compared -- actually, sorry.

In Paragraph 46 of your declaration in the 139 IPR, in Paragraph 45 of your declaration in the 178 IPR, you state that CAB's annual sales of the patent-practicing products grew more than 56 percent per year since 2015. Is that right?

A. Yes.

Q. And if we go to Appendix 2.1, which you cite in these paragraphs, over the same period the net new utility-scale photovoltaic capacity increased by 24.2 percent?

A. Yes. I'm sorry. Yes, that's right.

Q. How does annual net new utility-scale PV capacity in GWAC relate to industry sales in dollars?

A. When you say "industry sales," what do you mean?

Q. How does annual net new utility-scale PV capacity in GWAC relate to sales of cable management products in terms of dollars?

MR. FLYNN: Object to form.

A. Well, I guess I would put it this way. If you -- leaving aside variations in plant size, if

I had a gigawatt of electrical capacity, that implies the addition of a certain number of standard-sized plants.

So let's just say there's such a thing as a standard-sized plant. And a standard-sized plant requires a certain amount of cables to run from the photovoltaic cells to the inverters.

So every time I add a gigawatt of capacity, I had N standardized plants, which require, say, M feet of cable and thus M feet of cable management.

So as the number of gigawatts of capacity being added to the industry increases, I can compute the number of feet of cable management capacity that is needed to install a -- each one of those plants.

I don't have to know what that number is, but it's knowable. The point of it is that that caps the target market. That's what it's selling into.

Q. Do you know if there's a linear relationship between the number of gigawatts

capacity being added and the number of feet of cables being added?

MR. FLYNN: Object to form.

A. Well, not being an engineer, I would say that I would expect it to be approximately linear.

I think the point of it is that it's not -- if anything, it might be concave. So you need -- as you add capacity, you don't need to add as many feet, for whatever reason.

It's not convex, meaning that if you add, you know, 10 percent more capacity, you are really adding demand for 30 percent more feet of cable. That's not my understanding.

Q. How did you come to your understanding that it's not convex, meaning that if you add 10 percent more capacity you're really adding demand for 30 percent more feet of cable?

A. Well, I guess I've based on -- first of all, I've seen no evidence of that. None of the reports of industry growth say, oh, every time we -- the thing that is killing us is we have to add so many feet of cable capacity every time we

add another plant. I haven't seen anybody suggest anything like that.

And then there's also just kind of physics. The longer the electrical run, the more the loss of electricity. So you would like to keep cable runs as short as possible for reasons of electrical efficiency.

So all these things tell me that the -- there is no nonlinear in the wrong direction demand for additional cable management given a fixed increase in electrical capacity.

Q. You don't have any evidence showing that demand for additional cable management is linearly related to an increase in capacity, though. Right?

A. Well, in other words, it's an argument from the absence of evidence.

There's no reason to believe and nobody has said that it's convex. There are good fiscal reasons to believe it's not convex, so I didn't go ask a PV plant designer whether they thought that there was a nonlinear relationship. No.

But I would expect that, given the price of copper and the electrical loss running over long distances, that if there were such a relationship somebody would say something somewhere.

Q. Are you basing that opinion on your own technical experience --

A. No. I'm --

Q. -- in PV arrays?

A. I'm sorry.

I'm basing my opinion on the economics. I know as an economist that the longer the cable run, the more the loss. And I know that the longer the cable run, the more expensive the copper. Those are economic opinions.

And I know that, you know, just because you add 10 gigawatts in 2020 and 5 gigawatts in 2019, I should say I'm not aware of anything that it says that just because the industry's additional capacity has doubled during that time or the addition to capacity has doubled during that time, the technology for that addition has

become markedly less efficient, which would be a necessary condition in order to demand substantially more cable capacity.

If anything, I would think it would be more efficient.

Q. So you mentioned that it's an argument from the absence of evidence. Is that right?

A. Well, no. It's an argument from -- it's an argument from the underlying economics and physics, and then given that I have seen nothing to contradict the arguments from the underlying economics and physics.

Q. Are you an expert in physics?

MR. FLYNN: Object to the form.

A. I took electricity in high school. And my memory of high school electricity is that the longer the run, the greater the loss.

Q. Do you think it's possible that in some scenarios the longer the run, the more capacity you can generate?

A. Well, I'm certainly not going to try to jump into engineering questions. I try to stick

to the economics of it.

But if what you're saying is true, that as you add more capacity you also add longer cable runs, the question then becomes is that relationship nonlinear. And I just haven't seen any evidence that it is.

Even if it were, even if we said, okay, maybe it's not nonlinear, it's not nonlinear by an amount that's sufficient to explain the gap between CAB's growth and PV capacity.

Q. But you can't point to any exhibit or other documentary evidence or testimonial evidence saying that it's not nonlinear?

A. Well, as with many of the questions today, the right person to ask a question of -- a question like this of is not me.

And if you felt that was a concern and that there was a nonlinear relationship that could explain the growth in demand for CAB's products, then the right person to ask is a person with the knowledge of solar plant design. And I'm certainly not that person.

Q. Did you ask any of CAB's other declarants regarding whether there is a linear relationship between photovoltaic capacity and the amount of wire management products needed?

A. No. There's -- as I said, there's nothing in the record that suggests that one needs to ask that question.

And there are, as I mentioned, good physical and economic reasons to believe that one should not ask that question.

Q. But you're not the one who is capable of judging whether it is a good physical reason, right, because you're not a expert in physics?

A. No. I think it is a good physical reason. And that has to do with the increasing loss as cable runs increase.

There may be countervailing good physical reasons. I've never -- I've seen no indication of them and they aren't showing up in the economics where people would say, gosh, you know, as these plants get bigger, it's the cabling that's killing us because we're having to double the amount of

cable that we use every time we add a gigawatt of capacity. There's just nothing like that.

Q. Do you agree that increasing loss as cable runs increase is a technical opinion?

A. Well, by itself, no. I would say by itself this is at the level of high school physics. That's the -- which I would say lies within the province of a layman's knowledge. And that's all I claim to be.

If there are countervailing reasons that require greater technical expertise, I would certainly defer to somebody who has that.

And I would urge you to speak to that person because they could advise you as to whether your hypothesis is correct. I haven't seen any evidence for it.

Q. So going back to Appendix 2.1 of your declaration, you've testified that sales between 2015 and 2016 are solely standard system sales. Is that right?

A. I'm sorry. The question was are they solely standard system sales?

Q. Yes, that's right.

A. That's my understanding, that the integrated system was introduced in 2018.

Q. In your Appendix 2.1 here, it says that between 2015 and 2016 sales of CAB's standard system increased by [redacted]

A. Yes.

Q. And your appendix here also says that the [redacted] for the same years?

A. Yes, that's right.

Q. Doesn't that indicate to you that at least for the standard system CAB sales growth could be explained by industrywide growth?

A. Well, but you wouldn't confine the analysis to a one-year period because in 2016 to '17 CAB [redacted] So clearly you're not trying to explain year-to-year fluctuations.

Q. Over the period between 2015 to 2017, have you calculated the sales growth for CAB's standard

system as [redacted]

A. Yes. It's shown in the third column from the right in Appendix 2.1. [redacted].

Q. Does that indicate to you that CAB's sales growth for the standard system could be explained by industrywide growth?

A. No. CAB's growth is more rapid. And again, it's only a three-year period. So you would have a very wide standard error associated with those estimates, if that's what you're trying to base your argument on.

Q. So in your opinion, is the difference between [redacted]?

A. Well, it turns out to be a complicated question because these aren't independent data points. But assuming that they were, I'm sure you wouldn't find that they were statistically significant. There's only [redacted] for each

observation.

I'm not placing a lot of weight for that three-year period on the higher growth rate for CAB.

But similarly, I'm not saying -- I think it's wrong to conclude that CAB's growth can be explained by industry capacity because -- particularly because of the sharp uncorrelated year-over-year fluctuations in industry capacity.

MR. DIXON: Do you want to take another short break? I think it's been about an hour.

MR. FLYNN: Sure.

(Recess, 3:41 p.m. to 4:02 p.m.)

BY MR. DIXON:

Q. So it's also come to mind --

MR. FLYNN: Will that mean that if you do that, are you going to mark the 178 declaration as now a new exhibit in the '551 IPR and that 139 IPR?

(Recess, 4:02 p.m. to 4:03 p.m.)

MR. DIXON: It's also come to my attention that Exhibit 2044 in the 178 IPR has not been made

an exhibit of record in the 139 IPR, and Exhibit 2044 in the 139 IPR has not been made an exhibit of record in the 178 IPR.

In light of that, I'll be marking Exhibit 2044 in the 178 IPR as Exhibit 1047 in the 139 IPR, and I'll be marking Exhibit 2044 in the 139 IPR as Exhibit 1033 in the 178 IPR.

(Putnam Exhibits 1033 and 1047 were marked for identification and are attached to the transcript.)

BY MR. DIXON:

Q. Can we please go to Figure 2 in your declaration. This is on page 33 of Exhibit 2044 in the 178 IPR.

Looking at 2015 that is surrounded by a box labeled [redacted]

A. That's right.

Q. [redacted]

[redacted]

A. That's right.

Q. Why are the bars the same height in this figure?

A. Well, because in effect [redacted]

Q. Do you know how long it takes for a utility-scale solar farm to be completed from groundbreaking to being put online?

A. No.

(Exhibit 2050, previously marked, is not attached to the transcript.)

Q. I'm handing you a document marked Exhibit 2050 in the 178 IPR. I believe it has the same exhibit number in the 139 IPR as well.

Have you seen this document before?

A. Yes.

Q. And what is Exhibit 2050?

A. This is one of the -- [redacted]

Q. On page 4, what is the date of this [redacted]?

A. July 17th, 2017.

Q. Do you know whether [redacted]?

A. Not off the top of my head. No.

Q. [redacted]

[redacted]?

A. Well, according to the footnote, it says that [redacted]. But beyond that, no.

Q. On page 2 at the top of the page, do you see "[redacted]

A. Yes.

Q. Do you think it's likely that [redacted]

[redacted]

MR. FLYNN: Objection.

A. Well, I don't know, because all this is, [redacted].

Q. Can you please turn to Exhibit 2056. If you go about halfway down the page to [redacted] Do you see that?

A. Yes.

Q. Do you see the project name is "[redacted]"?

A. Yes.

Q. And this exhibit indicates that CAB was [redacted].
Right?
MR. FLYNN: Object to form.
A. Well, if you're referring to the column titled "[redacted] That's right.
Q. Exhibit 2056 represents [redacted]
Right?
A. That's my understanding.
Q. And it represents [redacted]
A. Well, [redacted]
MR. DIXON: Can you please mark these as 139, Exhibit 1034, and Exhibit 1048 in the 178 IPR.
(Putnam Exhibits 1034 and 1048 were marked for identification and are attached to the transcript.)

Q. Have you seen this document before, Dr. Putnam?

A. I don't believe so. No.

Q. I'll represent that this is a press release from solarpowerworldonline.com titled "Capital Dynamics and First Solar Power on 280-MWAC California Flats Solar Project."

This exhibit indicates that it was published on May 28th, 2019. Is that right?

A. That's the date at the top. Yes.

Q. And in Exhibit 2056 we were just discussing [redacted] Is that right?

A. Yes.

Q. Do you have any reason to doubt that this press release is discussing that same solar project?

MR. FLYNN: Object to form.

A. I have no idea one way or the other. One says "[redacted] one says "California Flats." They both refer to solar. Okay.

Q. Do you agree that it's possible CAB is reporting sales in different years than the corresponding new capacity -- let me rephrase that question.

Do you agree that it is possible CAB is reporting sales of its cable management products in different years than the years that the corresponding newer capacity comes online?

MR. FLYNN: Object to form, speculation.

A. Well, I mean, not only do I think it's possible, I think it's likely.

If capacity came online on January 1st, then the cable management system would have had to have been installed sometime before January 1st, which means that it appeared in a different year.

So yeah, there's nothing about CAB's sales year that corresponds to the day the plant comes online. Of course. But that's the kind of thing that works both ways and tends to even itself out over a large number of observations, which we have here.

So you're using the change in industry

capacity as a proxy for the size of the market that CAB is selling into. You're not using it to say, oh, there's an exact day-to-day correspondence between sales and additional capacity. That would be -- that wouldn't make any sense.

Q. So a potential lag in between CAB sales and that new capacity coming online wouldn't impact your comparison of CAB's sales growth to new industry capacity growth?

A. Not given that the difference in growth is the difference between 6 and 35. No.

Q. So in Paragraph 48 of your declaration in the 178 IPR and in Paragraph 49 of your declaration in the 139 IPR --

I'll give you a moment to find it.

A. Yes.

Q. -- you discuss two assumptions that you made to translate comparison of sales to new photovoltaic utility-scale capacity.

A. Yes.

Q. What do you mean by "predicted CAB sales"

in this paragraph?

A. Well, [redacted]

Q. You also [redacted]

Right?

A. Yes. So this is just a smoothed version of the actuals. That's right.

Q. Why did you feel that it was necessary to create a smoothed version of the actuals?

MR. FLYNN: Object to form.

A. Because the actuals vary for reasons that are idiosyncratic from year to year.

What you're trying to do is give the board an idea of on average how are these two series diverging.

[redacted] -- as an expectation, not as an actual deviation.

Q. But these [redacted] where there is only the sale of the standard system. Right?

A. That's right.

Q. And we've already discussed that sales [redacted] Right?

A. They did. Yes.

Q. So by predicting CAB's actual sales growth, doesn't that artificially inflate excess sales from 2015 to 2017 because you're capturing the post-2018 data?

MR. FLYNN: Object to form, I think.

A. Well, I understand your point. I think what I would say is that while that's -- I would say, actually, probably while that's true, in the context of the overall graph, it's a tiny overstatement.

So for example, in [redacted]

[redacted] And similarly for 2017.

The reason why I think this is not deceptive is because what you really care about is -- the question you'd like to ask if you had the right data would be to say what would the growth rate of standard systems be if CAB had not introduced the integrated system.

And I think that rate would be not as high as what we observe here, [redacted] but it would be higher than what we observed in 2015 to '17. We just don't know what that number is.

So we can't compute the correct number given the data. The overstatement is tiny in the context of the overall divergence of the two series.

And since this graph is just for illustration, I don't -- I'm not worried about the overstatement by [redacted] or so of cumulative sales in the early years. My conclusion is exactly the same.

Q. What is your basis for concluding that the growth rate for CAB's sales of its standard systems being higher than what we observed in 2015 to 2017?

A. Well, this is the . . .

This is the discussion in Paragraphs 57 through 61 of -- or I should say through 62 of the 139 IPR declaration.

The growth rate of the combined product, the combined '291 plus '551 product, is very rapid. But that's acting as a substitute for the '291-only product. So what you'd like to do is see what the growth rate would have been if you hadn't added the '551 to the standard system.

We don't know what that is, but it's wrong in general to impute the more rapid growth after 2018 just to the '551.

Several things are happening at this time. The industry is becoming familiar with the aboveground cable management system as a system; that education takes time. It takes time to, you know, put in new orders and that sort of thing.

So as I say in Paragraph 61 in the first sentence, it's impossible to know the true number of standard systems that CAB would have sold.

I did not introduce the further improved integrated system, which includes both the benefit of the standard system and the benefit of the integrated system claimed in the '551 patent.

So if I could draw that line, then I would. But given these data, I can't.

Q. Why is it wrong, in general, to impute the more rapid growth after 2018 just to the '551 patent?

A. Well, because there are people who are still learning about the benefits of the aboveground cable management system, for example. It takes a while for those benefits to be known. It's being adopted by the early adopters but then it's becoming more mainstream.

So you're getting a lot of benefits and people are becoming convinced of those benefits over time.

So by 2020, for example, many people would

demand a standard system, even if the '551 were not available, the benefits of the '551 were not available. We just don't know how many people there are that have -- by 2020 would have become convinced that the way to go was with a CAB standard system.

So since we can't identify that, I don't make any claim that you can draw a line and say this fraction of sales is attributable to the '291 and the remaining fraction is attributable to the '551.

There may be ways to do that but not with eight years of annual data.

Q. What is the basis for your assumption that by 2020 many people would have demanded a standard system even if the '551 were not available -- sorry -- the benefits of the '551 were not available?

A. Well, because the underlying economics haven't changed. You've got a substantial cost savings relative to trenching and cable trays that the '291 offers, and those benefits haven't

changed.

What's changing is people are becoming convinced of those benefits. They're seeing their competitors add them. They're seeing their competitors' costs being reduced and their maintenance costs being reduced. Those benefits are still present in 2020.

Q. So you don't think three years of sales data for the standard system that you testified was not statistically significant -- let me restart that question.

You testified that the sales growth for the standard system -- strike that.

You testified that the excess sales attributable to the standard system between 2014 and 2017 was not statistically significant. Correct?

A. Well, I was saying based on three observations. I mean, in general, it's extremely difficult to find a difference between two samples if you've only got three observations in each sample. And that's true of basically anything.

So the different -- the fact that the difference is not statistically significant is just a function of sample size. So that's just kind of the limitation of the data.

Q. It's your opinion that three years was not a sufficient amount of time for people to become aware of the benefits of the standard system for there to be a significant increase in sales?

MR. FLYNN: Object to form.

A. Well, you've got projects with long lead times. You've still got industry skepticism to overcome. These are things that people in the industry actually know much more about than I do.

Just as an economist, I would say it's a new product that's being offered for sale in projects with long lead times. So you can't conclude what the growth rate would be over the eight-year period from the first three years. No.

Q. So in Paragraph 62 of your declaration in IPR 178 and Paragraph 64 of your declaration in IPR 139, do you see where you say, "While the nonidentification of the true share is problematic

from a statistical point of view, from a substantive point of view that indeterminacy is irrelevant"?

A. Yes.

Q. What do you mean by that?

A. The overarching question we're trying to answer is, are each of the '291 and the '551 a substantial cause of CAB's excess sales and thus of its commercial success.

The answer to that question is yes. The answer to that question would be yes regardless of whether you divided that cause 50-50 or 40-60 or 60-40. They're both substantial. The only way you could conclude that they're not substantial would be if you thought that the division was like 3-97 or 97-3 and then all of the excess was attributable only to -- really to one of the inventions.

And there's simply no basis for that.

And so in terms of the question that the board has to answer, which is, is there a nexus between these patents and excess sales, the answer

is yes.

The board doesn't have to answer the decomposition question.

And so if they did have to answer that, then not being able to identify the line would be a problem. But because they don't, all they have to do is say is the cause substantial or material and then the answer is it doesn't matter.

Q. Is there any evidence to support a 50-50 split between sales attributable to the '291 patent and sales attributable to the '551 patent?

A. No. And that's why I said in Paragraph 64 that it was for illustrative purposes only. I could have drawn it 60-40. I could have drawn it 40-60.

The conclusion would be the same. The line would be in a slightly different place, and the support for any one of those three possibilities would be the same. It's just an illustration.

What it's not is 3-97 or 97-3.

Q. How do you know it's not 3-97 or 97-3?

A. I think for a couple reasons. For the '291, all of the sales throughout this period have the benefit of the '291, which avoids trenching, the problems with the cable trays, and all the other advantages of aboveground cable management.

Every single system has those benefits, and those benefits are substantial, and they're quantified elsewhere in my report on a per-watt or per-foot basis. That doesn't change.

At the same time, you get all the further economic benefits after 2018 for those systems that are integrated sales, which are also quite substantial, economically speaking. And they result in further cost savings.

And given the choice between getting the benefits of owning the '291 versus the benefits of the '291 plus the '551, people choose both.

So the benefits of the '551 are also substantial. So I look at the behavior and say the '551 makes the '291 more valuable. The '291 is itself very valuable. They're both, therefore,

very valuable. And I don't need to know the exact division between them in order to reach that conclusion.

One could, with different data, decompose the causal effects into the '291 and the '551. And I do that in other circumstances. But with eight years of annual data, you can't do it.

Q. What type of data would you need to perform that analysis?

A. Well, not knowing what's available here, I don't want to speculate. But let's take smartphones as a different product.

Suppose you want to know whether increasing the amount of storage available in your smartphone increases the price and if so by how much. Then you can look at data on smartphone sales and say controlling for differences in screen size and processor speed and all the other attributes of the phone, doubling the amount of storage available adds, say, $48 to the price of a phone.

So if you had a patent that allowed you to

double the storage capacity, you would say that patent was -- the consumer is willing to pay $48 for the benefits of that patent.

Again, going back to our earlier conversation, you're looking for some kind of difference, in this case a with and without difference.

So it may be possible to do some kind of with and without comparison. But again, not using eight years of annual data. That's just too few observations.

Q. Do you know if avoiding trenching problems with cable trays and other advantages of aboveground cable management are novel features of the claims of the '291 patent?

MR. FLYNN: Objection to form to the extent that it calls for legal conclusions.

A. Yeah. I don't want to -- when you start talking about novelty in a proceeding devoted to validity, obviously an economist shouldn't be weighing in on that.

I think the question is, as an economist

what I would say is do you obtain the benefits of -- do you obtain those benefits at a price that consumers prefer relative to the alternatives. And the answer is yes.

So whether you can -- there are other ways of doing it, I have no opinion about. Is this the most cost-effective way of obtaining those benefits, I think the answer is clearly yes.

Q. How can you conclude that it's the most cost-effective way of obtaining those benefits if you're unaware of other ways of doing it?

A. Because I'm not seeing anybody else in the marketplace offering the same benefits at the same price point.

Q. Did you review the price points as part of your analysis in these matters?

A. Yes. We looked at this, for example, in the request -- response to the request for quotes. CAB publishes its per-unit price.

But the larger point is that it's not competing with somebody else offering alternative aboveground cable management systems at a

different price, except obviously AWM.

The competition is the old way of doing things, which is trenching and cable trays.

And relative to that, it's vastly superior on a per-watt basis even in installation, never mind the ease of maintenance and reduced maintenance costs.

Q. Do you have an opinion as to whether the '291 patent provides more value than the '551 patent in terms of excess sales?

MR. FLYNN: Object to form.

A. As I said, I think it's impossible to say. It could be 60-40 one way, it could be 40-60 the other way, it could be 50-50.

It's almost a philosophical question at this point because you don't have the data. And I tend to only want to be able to answer questions like that when I have data.

Q. You've testified that CAB's inventions substantially reduce the cost of materials and labor in connection with the installation and management of electrical cables in the balance of

systems within utility-scale PV installations. Right?

A. Yes.

Q. What do you mean by "substantially"?

A. More than marginally. In other words, I think that -- so for example, in Paragraph 34 of the 139 IPR declaration, [redacted]

So a marginal reduction would be from [redacted]. A substantial reduction is from [redacted]. And there are some other examples in this paragraph.

Q. So the data you're discussing right now comes from Exhibit 2030. Is that right?

A. Yes.

(Exhibit 2030, previously marked, is not attached to the transcript.)

Q. I'm handing you a document marked Exhibit 2030. I believe this document also has

the same exhibit number in both IPRs.

Do you recognize this document?

A. Yes.

Q. And in Paragraph 34 in the 139 IPR declaration, you say that apart from its other advantages, the CAB standard system was projected [redacted] Is that right?

A. Yes.

Q. If you'd turn to page 2, is that based on a [redacted]?

A. Yes.

Q. Do you know what the [redacted] is?

A. It was a, according to the footnote, a [redacted]

Q. The [redacted]. Right?

A. That's right.

Q. Do you agree that the total cost per watt is only [redacted]

[redacted]?

A. It's [redacted] And the answer is yeah, but it's for a project that the company said they were uncomfortable with. So it doesn't sound like it's feasible.

Q. But it sounds like it was feasible enough that they actually employed the [redacted] Right?

MR. FLYNN: Object to form.

A. Well, in other words, you and I can both read the document, which speaks for itself.

It says that there was one-time approval. Whether it actually got built, I have no idea. The indication is that [redacted] doesn't like it. So if it was built, it was a one-off.

Q. Do you know what [redacted], is?

A. I mean, no. I would guess it was [redacted] but I have no idea, really.

Q. Do you know if cables in solar installations are typically larger than [redacted]

[redacted]

A. I don't know anything about [redacted]

and cable installations.

Q. But page 2 of Exhibit 2030 says that [redacted]?

A. Yes.

Q. It doesn't say that they're uncomfortable with [redacted]. Right?

A. I mean, it doesn't say that. I don't know anything about it.

Once again, I think you're barking up the wrong tree in terms of trying to get me to offer an opinion about the desirability of direct bury or any other technical matter.

Q. Is a [redacted] substantial?

A. Well, it's a -- it's about a [redacted] -- [redacted], which is substantial.

And I also don't think it's the correct comparison, given the asterisk associated with it. There's lots of places where if you're spending,

you know, millions of dollars on an installation, a [redacted] makes a big difference.

And you would -- if direct bury were higher quality, you might be able to convince the financial people that you should spend the extra [redacted].

If it's got an asterisk next to it and you can go to a solution that doesn't have an asterisk and you save [redacted], that's a superior solution, which is really the point that we're trying to get at.

The argument is not over whether it's [redacted]. The argument is, is it a productivity improvement? The answer to that question is yes.

Q. How is it a productivity improvement?

A. You get more output per unit of input, which means that as to installation you spend less money to get an installed system.

On top of that, you also get the reduced maintenance cost and the ease of access. Those aren't quantified here.

Q. Do you think it would be reasonable to extrapolate a [redacted] from the systems discussed in Exhibit 2030 to a full-scale, utility-scale solar plant?

MR. FLYNN: Object to form.

A. Well, in other words, this is [redacted] trying to figure out, you know -- trying to figure out its alternatives for an actual full-scale installation.

So this is what companies do is they take the best available information and they compare the various alternatives, and then they pick the one that is the -- overall provides the greatest benefits, the best value per dollar.

So whether I think it's reasonable or not is not really the point. The point is that [redacted] thinks it's reasonable because this is how they made their decision.

Q. Do you know if a product can be coextensive with more than one patent?

A. That's purely a legal question.

Q. Do you have an understanding regarding

whether a product can be coextensive with more than one patent?

A. No.

Q. Do you know if CAB contends that its products are covered by more than one patent?

MR. FLYNN: Object to form.

A. I think they do, but it's not something that -- I guess I would say I think they do, but I'm just an economist.

MR. DIXON: Can you please mark this as Exhibit 1049 in the 139 IPR and 1035 in the 178 IPR.

(Putnam Exhibits 1035 and 1049 were marked for identification and are attached to the transcript.)

Q. Do you recognize this document, Dr. Putnam?

A. I don't think so.

Q. What does this document appear to be to you?

A. This is a document created under the marking provisions of Title 35, which allows a

patentee to list online the patents that it contends are practiced by its products.

Q. And this appears to be produced by CAB. Correct?

A. Yes.

Q. Do you recall the part numbers for the hangers Dr. Kern identified as being exemplary components of the standard system?

A. I think you mean Dr. Phinney. You can put Dr. Kern's declaration in front of me.

So if you want me to refer to Dr. Phinney's declaration, it's in Paragraph 304 of Exhibit 1031 or, on its face, Exhibit 2064.

And so the hangers -- to answer your question, the exemplary hangers are [redacted]

Q. Can you please go to the hangers listed as [redacted] in this exhibit.

A. Yes. I have it.

Q. Do you see the '291 patent identified as a patent that protects [redacted]

A. Yes.

Q. Do you see that there are eight other --

seven other patents --

A. Yes.

Q. -- that are also identified as covering [redacted]

A. Yes.

Q. Do you know if these patents cover the same aspects of [redacted]

MR. FLYNN: Object to form.

A. The same as what?

Q. The same elements of the hanger that CAB identifies as [redacted]

A. You mean do these patents all cover the same as each other?

Q. Yes. That's right.

A. I have no idea.

Q. Do you know if Dr. Kern or Dr. Phinney analyzed whether these patents identified as protecting [redacted] all cover the same as each other?

A. Well, I mean, so formally covering is a question about claims. And claims-related questions are both legal and technical in nature.

So I don't have an opinion. I would say beyond that, I don't have an understanding.

Q. And you don't know if Dr. Kern or Dr. Phinney performed any analysis regarding whether the scope of these claims and the patents identified as protecting [redacted] are the same?

MR. FLYNN: Object to form, beyond the scope.

A. Well, I mean, I'm not sure I quite understand your question. You asked whether the scope of the claims are the same. And my understanding of the nature of claims is that they can't be the same in scope.

But as to what Dr. Kern or Dr. Phinney did in the way of analysis of patents other than the '291 and '551, I have -- don't think I saw anything related to that.

Q. Dr. Phinney also identified [redacted]. Is that accurate?

A. Yes.

Q. Do you see the '551 patent being identified as practicing [redacted]?

MR. FLYNN: Object to form.

A. Yes.

Q. Does CAB identify two other patents as protecting [redacted] in addition to the '551 patent?

A. That's what it says.

Q. Are you aware of any analysis performed by Dr. Kern or Dr. Phinney determining whether the claims of these three patents have the same scope?

A. Well, as I said -- as I understand it, and maybe I should ask you to clarify your questions, saying that two patents have claims with the same scope is a contradiction in terms.

But regardless of how that gets resolved, I'm not aware of or at least I don't remember any analysis by Dr. Kern or Dr. Phinney of patents that have not been challenged by AWM.

Q. And you aren't aware of any analysis performed by Dr. Kern or Dr. Phinney determining whether any other patents are similar in scope to

the two patents that are being challenged by AWM. Is that right?

A. I don't recall anything they said about any patents other than the '291 and the '551.

Q. In Appendix 3 of your declaration, do you see where you identify products as core patent-practicing features and ancillary features?

A. Yes.

Q. What do you mean by "ancillary features"?

A. Well, again, without trying to interpret the claims, my recollection is that hangers, for example, are not claimed as an element in both patents. I think they're only claimed in one.

I shouldn't say they're claimed. That's the wrong way of putting it. They're an element of the claims of the system in only one, I think. But that's -- without having the claim in front of me, I can't recall.

Q. So because your recollection is that they're an element of the claims of the system in only one of the patents, that's why they're ancillary features?

A. I think that would be the reason for that categorization. That's my understanding. It's not meant to be a -- it's meant to just sort of organize the data. It's not meant to . . .

I think there's no substantive significance to this breakdown. It's meant to be just sort of let's -- here is the exposition of which requests for, quote, demand which features.

Q. Why did you decide to break them down at all?

A. Well, as I said, I think that -- and I'm now going back because I've forgotten the origins of the -- in other words, I know the origins of the table. I asked for this table to be created.

As to why it's broken down this way, as I said, I think that it has something to do with the distinction between core patent practicing and features that are not elements of all of the challenged claims.

But I'd have to go back and do some archaeology on the evolution of this exhibit to see why that happened and when.

MR. DIXON: Can you please mark this as Exhibit -- actually, hold off. I need to double-check to see whether this is already of record in the 139.

This is an exhibit marked as 1001 in the 178 IPR.

(Exhibit 1001, previously marked, is not attached to the transcript.)

Q. Do you recognize this document, Dr. Putnam?

A. This is the '291 patent.

Q. So if you go to Claim 1, do you see anything -- any word in Claim 1 that recites pier kits?

A. Well, I think I'll just object once again that my understanding of the law as a nonlawyer is that interpreting claims is the province of lawyers. So in addition to that, it requires technical expertise.

So since I'd rather not refuse to answer, I'm just going to say that I don't have an understanding of the structure that's described

here.

Q. What is a pier kit?

MR. FLYNN: Object to form.

A. I think that they are brackets. Another word for them is "bracket."

So for example, in Exhibit 2050, which is the [redacted] which he specifies at the top of page 2 of Exhibit 2050.

Q. Does the word "bracket" appear in either Claim 1 or Claim 6 of the '291 patent?

A. Well, again, your question is as to the word "bracket." And I don't see it.

That said, asking an economist to interpret a claim, even if it's to search for a word when claims are a highly disputed -- the focus of the present dispute is, to me, so far

outside the scope as to be useless.

And so I refuse to wade in on core claim construction issues like that.

Q. Do you recall our discussion of CAB [redacted]?

MR. FLYNN: Object to form.

A. Yes.

Q. Do you recall that we discussed how [redacted] is identified as [redacted]?

A. Yes.

Q. And Dr. Phinney identifies [redacted]

A. Yes.

Q. Do you know if the [redacted] is important to the integrated grounding system?

MR. FLYNN: Object to form, beyond the scope.

A. Well, again with the proviso that I'm neither a legal nor a technical expert, I'd refer you to Footnote 10 of Dr. Phinney's declaration

where he says that all grounding messenger wires sold by CAB serve both to support cable hangers and cables and to act as an equipment-grounding connector.

My understanding is that the [redacted]. So in that sense, it enables the claim functionality.

Q. Do you know if all messenger cables that are components of the integrated grounding system have copper?

MR. FLYNN: Object to form, beyond the scope.

A. I don't know what the composition of the parts is.

Q. I'm handing you Exhibit 1001 in the 139 IPR.

(Exhibit 1001, previously marked, is not attached to the transcript.)

Q. Do you recognize this document?

A. This is the '551 patent.

Q. If you go to Claim 1 of this exhibit, which is the '551 patent, does Claim 1 mention copper anywhere within the claim?

MR. FLYNN: Object to form, beyond the scope, calls for legal and/or technical conclusions.

A. Yeah. I'll just restate my own personal objection, which is not to get involved in claim construction.

The word "copper" doesn't appear, to answer your question. And the word that does appear is "conductive," which is the word that Dr. Phinney uses in Paragraphs 304 and 305 for the properties of the grounded messenger wire.

Q. Do you know if CAB has patents on the composition of the messenger wires it uses in the integrated system?

MR. FLYNN: Objection, form, beyond the scope.

A. No.

Q. Assuming copper is not claimed as a limitation of the multifunction line in the

'551 patent, is it possible that that unclaimed feature is driving sales of the integrated grounding system?

MR. FLYNN: Objection to form, beyond the scope to the extent that it calls for expert and/or technical conclusions.

A. I guess I would say I don't see why. The fact that a wire is copper is about as vanilla as it gets. It's hard for me to believe that a -- offering a copper wire would cause somebody to exceed the sales growth rate of the industry by a [redacted] but it's also not a question I've asked myself.

Q. Do you want to keep going or do you want to take a break?

MR. FLYNN: We've been going for over an hour.

I don't know if you have any idea of how much longer you have?

MR. DIXON: I don't know exactly -- we can go off the record.

(Recess, 5:32 p.m. to 5:54 p.m.)

BY MR. DIXON:

Q. Dr. Putnam, you analyzed CAB's customer-level sales for the year 2018 and found that the standard system sales declined following the introduction of the integrated system. Correct?

A. Yes.

Q. And those customer-level sales are in Exhibit 2056?

A. That's right.

Q. And if you'd look at page 39 of the 178 declaration and page 41 of the 139 declaration, do you see the Footnote 47 in the 178 and Footnote 50 in the 139?

A. Yes.

Q. And your declaration says, "They are part numbers that are not assigned exclusively to either the '291 or the '551 patent, i.e., assigned to nothing or both, in which case I used the sales slip for those part numbers with exclusive assignment information available as proxy for splitting the corresponding sales." Is that

right?

A. Yes.

Q. So looking at Exhibit 2056, how did you identify the products assigned exclusively to the '291 patent?

A. They're the ones in orange.

Q. Did you add the orange color?

A. No.

Q. How did you know that the ones in orange are products that are assigned exclusively to the '291 patent?

A. This is the -- this is the determination made by CAB.

Q. Was that information provided to you?

A. I'm sorry. I don't understand the question.

Q. I'm just asking, based on -- looking at this document alone, I can't necessarily tell that orange should be exclusively assigned to the '291 patent. I'm just wondering how you determined that color-coding.

A. Well, I didn't determine it. It came --

this is the original form of the document. So we received it in this form and the interpretation we were given was that orange is '291 and blue is '551.

Q. Who gave you the interpretation that orange is '291 and blue is '551?

A. Well, as I said, this was an analysis performed by CAB itself.

Q. Did you request this document from CAB?

A. Yes.

Q. What was the parameters of your request?

A. Can you tell us which sales were for integrated systems and which sales were for standard systems.

Q. And you just asked for the year 2018?

A. Well, I think that 2018 was the first year we received, if I'm not mistaken. The title of the spreadsheet is through 2024, but we ended up -- but we only received 2018.

Q. Had you requested data from 2018 through 2024 from CAB?

A. We had talked about it. I guess we had

talked about it. In the end, 2018 is the transition year.

And so all the sales prior to this are standard. The vast majority of the sales after this are integrated. So it ended up for our purposes that Exhibit 2046 was sufficient and 2018 ended up being -- because it's a transition year, it's the only year for which this division matters very much.

Q. Did you or anyone from your team make the decision that Exhibit 2056 should only include data from the year 2018?

A. No.

Q. Who made the decision that Exhibit 2056 should only include data from the year 2018?

A. Well, I think, you know, the folks at CAB had to do the analysis. And my understanding is that it was somewhat time-consuming. So I think that -- I forget the exact sequence of decisions, but I think the question was do we really have to complete this for the other years. Is it necessary to your opinion.

And as the facts developed and we asked ourselves what are we going to be able to accomplish with the data, I think we just said we don't need the other -- eventually we said 2046 is going to be good enough for us. We don't need you to do this for the other years. I think that's -- I'm not typically part of this level of communication.

And so that's kind of my hearsay version of events, and I might be leaving out stuff. I just don't know.

Q. If I understand you correctly, you're saying that CAB created the color-coding in Exhibit 2056?

A. That's right.

Q. So CAB made the determination that the products identified in orange should be exclusively assigned to the '291 patent?

A. Yes.

Q. And CAB made the determination that the products identified in blue should be assigned exclusively to the '551 patent?

MR. FLYNN: Object to the form.

A. Well, yeah. And I think that to say that they assigned it to a patent I think is not the right way of phrasing it.

I think what I would say is the sales shown in orange are what we have called standard system sales. And from there, that is mapped onto the patent. And the same with the '551.

But they weren't engaged in interpreting claims, as far as I know. They just -- but they do know the difference between a standard system and an integrated system, obviously, and they made that determination.

Q. In the footnote in your declaration that we were discussing a little bit ago, you also identify part numbers that are not assigned exclusively to either the '291 or the '551. Is that right?

A. Yes.

Q. Can you point out to me in Exhibit 2056 which part numbers are not assigned exclusively to either the '291 or the '551 patent?

A. I think it's the ones in white which have no color.

Q. Do you know if any products in Exhibit 2056 are not assigned to either of the patents?

A. I'm sorry. I thought that was the previous question.

Q. So if I can clarify my questions, my first question was can you point out to me in Exhibit 2056 which part numbers are not assigned exclusively to either the '291 or the '551 patent?

And what I'm asking there is part numbers that may be assigned to both the '291 and the '551 patent.

MR. FLYNN: I'll object to the form.

A. Well, that's a logical possibility. At least as I understand it here, such a part would have to have a third color associated with it if it was assigned to both. And I don't see any such part. Or it's possible that the ones that are assigned to both and the ones that are assigned to neither are both white.

So there's four logical possibilities, and we only see three here. So either one of the logical possibilities which is assignment to both doesn't exist or it is lumped in with those that are assigned to neither. And I can't tell you which is which because it doesn't matter. We treat them the same.

Q. For those part numbers that are not assigned exclusively to either the '291 or the '551 patent, you say, I use the sales split for those part numbers with exclusive assignment information available as a proxy for splitting the corresponding sales.

A. That's right.

Q. What do you mean by using the sales split for those numbers with exclusive assignment information available as a proxy for splitting the corresponding sales?

A. Well, so let me give you a for-instance just so we can work with concrete numbers. This isn't right but the idea is right.

Suppose that 80 percent of those sales in

this document have assignment and 20 percent don't. So you're trying to figure out how to allocate the 20 percent.

And suppose that 35 percent of the sales are assigned to the '291 and 45 percent are assigned to the '551. Let's just say those are the facts. The 80 breaks down 35-45 and then there's 20 that you don't know about.

So what we would have done was to say well, 35 over 80 is the share of sales that we know about that are assigned to the '291. So that's around 40-something percent. And 45 over 80 are assigned to the '551. So that's the remaining 50-something percent.

And so we're going to take the 20 percent of sales that we don't know and split them 40-something and 50-something between the '291 and the '551 and assume that they follow the same distribution as the sales we do know about.

That's a long answer. Does that make sense to you?

Q. That does.

We just talked about how there's four possibilities here, one of which being the product shouldn't be assigned to either the '291 or the '551. Right?

A. Well, I don't know if I would say shouldn't be. I would say was not. It couldn't be determined.

Q. Wouldn't the conservative analysis choose to exclude those sales entirely from your calculation of respective shares?

A. Well, I think without meaning to speak for CAB, my understanding is that CAB's understanding was that the sale definitely occurred as part of a -- either a standard system or an integrated system sale, but it couldn't be determined which.

So they should be ruled in, but we don't have information on what type of system they're part of. So no, they shouldn't be excluded if that's the case.

Q. The line items identified in white all have zero for the material number. Is that accurate?

A. I think that's right.

Q. So we have no way of knowing what that component is?

A. I think that's correct. That's the source of the indeterminacy.

Q. So we don't know if a given component falls into the category of mid pier kits, end pier kits, messenger wire, or hangers?

A. I think that that's right. We know the dollar amount, but we don't know what those dollars were being paid for.

Q. It's also possible that those items identified in white in Exhibit 2056 are something other than [redacted] Right?

MR. FLYNN: Object to the form.

A. I don't think so. No.

Q. Why do you not think so?

A. Well, because the assignment was very clear that we are trying to allocate sales in 2018 between standard systems and integrated systems where those systems have a thorough definition.

So it would be wrong to assign -- to include parts that didn't fall into one of those categories.

How CAB knows that these parts fall into one of those categories but not which category is something that I don't know.

Q. What is your basis for concluding that the standard system and integrated system have a thorough definition?

A. Well, the basis is that the systems are defined in Exhibit -- Appendix, I should say, 2.2, which comprises [redacted] That's what we're trying to include.

So that's the rigorous definition of the two systems, and then various part numbers correspond to one system or the other and then you have this residual category where we don't know the part numbers but CAB believes that whatever the part number is it falls into one of these four categories.

Q. And we wouldn't know how CAB made that determination unless we had a native version of this spreadsheet. Right?

MR. FLYNN: Object to the form.

A. Well, this spreadsheet was produced in this case. I don't think the native version would tell you that. I would think that you would have to ask the person who created it how they got this -- whether it came from the general ledger or some other database, I'm not sure. You'd have to ask them how they extracted it from the database and how it is that they verified that the unassigned parts nevertheless fall into one of these four categories.

Q. So in Paragraphs 40 to 45 of your declaration in the 139 IPR, in Paragraphs 39 through 44 of your declaration in the 178 IPR, you reference the generic use of CAB to denote the claimed inventions?

A. Yes.

Q. Do you have any experience in evaluating trademark genericization?

A. Well, I was a professor of intellectual property law. In that sense, yes.

Q. Have you ever opined on whether a trademark had become generic?

A. No. And I'm not opining that here either.

Q. Are you opining that CAB has a trademark relevant to this proceeding?

A. No. This is purely an analysis of consumer demand. And the question is, do consumers demand the category of goods or do they demand the source of goods. That's the confusion.

So I'm trying to stay within the four corners of a commercial success opinion and ask the question, what's the basis of consumer demand, which I think is within the scope of that opinion.

But here we see some confusion about that basis. And I'm trying to address that in the context of pointing out that CAB has become the industry standard and people refer to it as such, which in the trademark context means genericization.

But what I really care about for these

purposes is the industry standard part of that.

Q. You only identify one single instance of the use of CAB hanger and CAB support cables. Is that right?

A. I only cited one instance. I've seen other ones. But yes.

Q. You don't cite those other instances anywhere in your report, do you?

A. That's correct.

Q. Is the use -- I'll strike that.

Can a single consumer be representative of an entire industry for the purposes of determining whether CAB has become an industry standard?

MR. FLYNN: Object to the form.

A. I think it's . . .

Well, first of all, it isn't a single consumer. Those aren't the facts.

But to answer your question, I think that the usage by these consumers coupled with the fact that until AWM came along CAB was the only one offering products that practice the patents means that the product category and the product are the

same thing.

And when that happens, you have both standardization and, depending on usage, the threat of genericization. So I'm using the threat of genericization to -- which appears to be at least somewhat actualized, to support the claim that CAB is the industry standard.

Q. So you only identified one single project in your report here -- sorry -- your declaration where there's an example of the language "CAB support cables" and "CAB hanger." Right?

MR. FLYNN: Objection, asked and answered.

A. Yeah. As I said, I cite one as an example. There are multiple.

Because this isn't a trademark case, I'm not trying to, you know, quantify the extent of genericization or say whether the trademark has been genericized or anything like that.

This is not a trademark case. It's not about quantifying the consumer perception. It's about demonstrating the existence of consumer perception which, coupled with the fact that CAB

is the only one until AWM came along offering products in this category, implies that the product and the category can be confused.

We have an instance of that, too, so that it's not simply an idle threat or a possibility.

Q. Isn't it equally plausible that this is simply a find-and-replace error?

MR. FLYNN: Object to the form.

A. Well, I guess I would say that seems unlikely, given that the error appears on drawings rather than in a word processing document. And I'd have to go back and actually look at it.

What you're seeing is AWM and CAB being used side by side except for AWM is being used as a designation for a source of goods and CAB is being used as a product category.

So it's hard to imagine the sequence of decisions that would lead a person to replace one but not the other when they exist side by side.

Q. These engineering drawings you reference, they're created on a computer program. Right? In other words, they're not hand drawings?

A. They're created on a computer program, but it's not -- I don't know anything about the software.

If the assertion was that a person could have replaced CAB with AWM globally, I don't know if that's even feasible.

But the fact is that you see CAB and AWM appearing side by side. And so what they did not do was do a global search and replace. And whoever did this was looking at the two words in very close proximity to each other, using them for different purposes, one of which indicates a generic usage.

Q. You're just inferring based on the arrangement of the words that that's used for different purposes. Right?

A. No. Actually, no, because it's clear they are not referring to CAB products because the parts being shown are not CAB parts, but they're being referred to as CAB parts. So the person is not using it as a source designation. They're using it as a product category.

Q. And you're inferring that based on the structure of the naming conventions. Right?

MR. FLYNN: Object to the form.

A. I don't actually understand that question.

Q. You said earlier that whoever did this was looking at the two words in very close proximity to each other, using them for different purposes, one of which indicates a generic usage.

So you're inferring based on the proximity of AWM and CAB that there's some sort of different usage between those two rather than maybe a typo or something else. Right?

A. Well, what I'm saying is something like the following.

I'm calling it a Xerox machine and I'm showing you a Canon copier and saying make sure you get a Xerox machine for our new office, when what's shown is a Canon copier.

That is generic usage. So that's what's happening here. It doesn't look like an error. It looks like the use of a category rather than the designation of a source.

And that's particularly true because the shape of a CAB hanger is identifiably different from the shape of an AWM hanger.

So when you say -- when you show somebody an AWM hanger and you call it a CAB hanger, at a minimum you are being sloppy in your usage.

But it doesn't really matter for my purposes. Whether the person noticed it or not, they're misusing the word to describe a category of goods.

MR. FLYNN: Timeout.

(Recess, 6:25 p.m. to 6:26 p.m.)

BY MR. DIXON:

Q. You haven't spoken to anyone who worked on the [redacted] project about their intended use of CAB in the engineering drawings. Right?

A. Well, the short answer, I didn't speak to anybody on the [redacted] project.

The longer answer is that, as it says in Footnote 45 of the 139 IPR declaration, the test of whether a registered mark has become generic is not purchaser motivation, but the primary

significance of the mark to the relevant public.

So I'm not sure that speaking with somebody on the [redacted] project would be the -- would be relevant.

MR. DIXON: So I'd like to mark this as Exhibit 1050 in the 139 IPR and Exhibit 1036 in the 178 IPR.

(Putnam Exhibits 1036 and 1050 were marked for identification and are attached to the transcript.)

Q. Dr. Putnam, have you seen this before?

A. I don't think so. No.

Q. If you'd turn to page 8 of this document, which I think, actually, that might be inaccurate.

If you turn to page 6 of this exhibit, the second-to-last paragraph on this page beginning with "The 151 sheltered workshop employee." Do you see that paragraph?

A. Yes.

Q. This paragraph says that the sheltered workshop employees at Cambria County Association for the Blind and Handicapped received

approximately 2 million in wages and benefits in 2015. Right?

A. Yes.

MR. FLYNN: Object to the question. Relevance, prejudicial, way beyond the scope.

Q. And this breaks down to roughly $13,240 per individual?

MR. FLYNN: Objection, relevance, prejudicial, way beyond the scope.

A. I haven't done the math, but that's what it says.

Q. And that's about $2,000 less than the salary of someone who makes minimum wage in Pennsylvania?

MR. FLYNN: Objection, relevance, prejudicial, way beyond the scope, inflammatory.

A. I think you read the document correctly.

Q. And if you go to the next paragraph, do you see that it says, "In an audit the nonprofit shows that of that 2 million figure nearly all of it, 1.9 million, was subsidized in the form of Medicaid and medical assistance program

subsidies"?

MR. FLYNN: Objection, relevance, prejudicial, beyond the scope, inflammatory.

A. I mean, again, I think you've read the document correctly.

Q. And this document also says that the association paid approximately 81,000 from its own funding sources for this labor, which breaks down to $536 annually per individual in the sheltered workshop?

MR. FLYNN: Objection, relevance, prejudicial, beyond the scope, inflammatory.

A. And again, I think that your reading is exemplary.

Q. Could paying employees $536 annually be a factor in CAB's commercial success?

MR. FLYNN: Objection, relevance, beyond the scope, prejudicial, inflammatory.

A. I'm going to try really hard not to get mad.

As far as I know, CAB is charging a price commensurate with the value of what its products

are worth in the marketplace. That's what a rational economic actor would do.

If it's doing that, then it's behaving the way, then -- under that assumption, then it's behaving like a for-profit firm.

If it's behaving like a for-profit firm, then there's no distortion of its price and so therefore one would interpret its commercial success in the marketplace as one would interpret the success of a for-profit firm.

If for some reason its price is below the for-profit price, then that might represent a distortion, but there's no evidence of that.

My understanding is that AWM, on the other hand, charges a significantly lower price than CAB, which undermines the claim that CAB is pricing too low and therefore its success is due to its excessively low price because AWM's price is even lower.

So the answer to your question is no, I don't believe that CAB's payments to its employees explains its commercial success in light of

competitive pricing in the marketplace.

I will also say that I think it's highly offensive that you would seek to introduce this kind of information into a proceeding like this.

And I will personally and at no cost to my client investigate this article and provide outside counsel with my interpretation of this economic evidence and explain why I think that this article's interpretation of the data is not only, as counsel has said, inflammatory and prejudicial, but actively misleading and contributes to the deception being perpetrated on its readers.

I will work hard to undo that perception, and I'll do it for free.

Q. I appreciate that. And I apologize if you misunderstood my question. I was talking from a purely economic standpoint looking at profits.

If you pay less to produce a product, doesn't that mean you are able to increase your overall profit at the same price point?

A. That's the implication, which means that

CAB, being the greedy bastards that they are, are pocketing the difference between the labor that they're exploiting and the price they're charging in the marketplace. That's the implication.

That's completely wrong, but it has nothing to do with commercial success because the allegation is they're behaving like a for-profit firm and making as much money as possible off the backs of blind and handicapped people.

You want to make that allegation, that's fine. It has nothing to do with the success of their products. They're behaving like rational profit maximizers, is the allegation, which means that we can trust the price they're charging to be undistorted by the heart-warming story that they wrongfully put before the public.

MR. DIXON: One final exhibit. Can we mark this as Exhibit 1051 in the 139 and 1037 in the 178.

(Putnam Exhibits 1037 and 1051 were marked for identification and is attached to the transcript.)

Q. So page 7 of this exhibit. Do you see in the third paragraph it says, "We actively develop markets for our various products. We publish brochures and catalogs of CAB products in both English and Spanish and our sales staff exhibits our product lines at numerous trade shows around the world"?

A. I do see that language.

Q. Did you consider CAB's efforts to actively develop markets for their products as a factor in their commercial success?

A. I considered their commercial success an example of their efforts to develop new product -- new markets, but it's not a cause of that. It's a consequence.

Q. What does it mean to develop markets for our various products?

A. It means to innovate and design products that appeal to consumers and that can be sold at a profitable price in furtherance of the mission to assist the blind and handicapped.

Q. To develop a market for a product, doesn't

that sound like they already have the product and they're trying to develop a market for that product?

MR. FLYNN: Object to the form.

A. I'm not sure what the sequence of events would be. I think it's highly consistent with Mr. Smith's description of the development of the -- what became the standard system and trying to assess -- to solve a problem and to convince customers that the solution that was being offered was better and cheaper than what they were currently doing.

Having done that, then continuing to educate the market, continuing to innovate, continuing to improve with the result being the integrated system.

This is a classic market development story by an innovative firm. And so the aboveground cable management product line exemplifies the development of new markets.

Q. Can you attribute the development of a new market to a patented product if there are also

substantial investments in advertising alone?

A. I'm not aware of any evidence that -- advertising is, of course, necessary to the sales of nearly all products.

But on the other hand, the development of this market is not driven by advertising. It's driven by the underlying economic fundamentals, which demonstrate that CAB's solutions in both its standard system and its integrated system are substantially cheaper and more reliable both at installation and on an ongoing basis than the alternatives.

This is a classic increase in productivity that is not driven by advertising.

Q. Are you aware that CAB has spent hundreds of thousands of dollars over the years exhibiting product lines at trade shows?

A. Really, hundreds of thousands of dollars of our product that sold $250 million? That's shocking. No, I wasn't aware of the hundreds of thousands of dollars that they spent.

Q. Couldn't those investments drive sales

outside of any of the benefits provided by the patented inventions?

MR. FLYNN: Objection, form.

A. Well, the short answer is no and the longer answer is hell no. People still exhibit products to prospective customers. They advertise those products to customers. Those advertisements don't drive the sale. It's not like they're out there in the marketplace saying get your red hot aboveground cable management system. And if you buy right now, we'll give you 50 percent off. This is not an infomercial.

Q. Do you know if CAB runs sales for their products?

MR. FLYNN: Object to the form.

A. Yeah. What does that mean, sales?

Q. Well, you just used an example of if you buy right now, we'll give you 50 percent off.

Do you know if, in fact, CAB does offer discounts on their products to customers as promotional activities?

A. Well, so first of all I don't know.

Second of all, contracts like these are typically highly negotiated and they tend to be somewhat idiosyncratic.

Some of the factors that influence the price being paid are whether it's repeat business, whether it's -- the timing of the contract relative to various corporate deadlines, whether there is competition in the marketplace, legal or illegal.

And so you would expect to see some price dispersion. And you could interpret within that dispersion the lower prices as being, quote-unquote, discounted if you wanted to.

But they don't offer coupons and their success is not due to flogging their product in the marketplace to try to get unwilling consumers to purchase it. That is ridiculous.

Q. Do you know if they advertise in magazines?

A. You mean trade journals?

Q. Trade magazines.

A. Or Good Housekeeping?

Q. Not Good Housekeeping, no.
A. I would say that I'm not familiar with their advertising campaign or how to reach their customers.
MR. DIXON: I have no further questions.
MR. FLYNN: All right. Let's take a few minutes and we'll huddle and see if there is any redirect and we'll come back.
(Recess, 6:46 p.m. to 6:55 p.m.)
MR. FLYNN: Just a couple of questions on redirect.

EXAMINATION BY COUNSEL FOR
PATENT OWNER CAMBRIA COUNTY ASSOCIATION FOR THE BLIND AND HANDICAPPED, INC.

BY MR. FLYNN:
Q. Dr. Putnam, do you recall testifying in response to Mr. Dixon's questions regarding market share and CAB's market share?
A. Yes.
Q. And do you recall indicating to Mr. Dixon that you did not have sufficient data to be able to make an analysis of CAB's market share?

A. That's correct.

Q. You had testified earlier in your testimony, I believe, that starting in 2014 CAB's sales were virtually negligible to nonexistent of either the standard -- well, of the standard system. Do you recall that?

A. Yes.

Q. And CAB did not start selling the integrated grounding system until the 2018 time frame. Do you recall that?

A. Yes.

Q. By virtue of the fact that CAB had no sales of either system and had no solar sales as of 2014 and given where their sales growth went over the past nine to ten years, are you able to draw any conclusion about any change in CAB's market share from that information?

A. Yes.

Q. What are those conclusions?

A. Well, it's true you can't compute market shares because you don't know all the substitutes that are in the market and their sales.

But it's also true that CAB's market share went from zero in 2014 to a much larger number in 2023. And we know that because it was taking sales from substitutes of products that you would include in that market, like trenching and cable trays, if you could define it properly and get the relevant information.

So we know the market share is increasing. We just can't assign numbers to it.

And we also know that, secondary from the fact that CAB sales are growing so much faster than industry capacity, that it isn't as though it's just got a constant market share in an expanding industry.

It must be the case that the rapid rate of increase implies an increase in market share from zero to some much larger number as it takes sales from competing cable management techniques.

Q. If I can put back in front of you, please, Exhibit 2056. And a specific copy of that Exhibit 2056 is from the 178 IPR.

Do you recall Mr. Dixon asking you

questions regarding the split sales that are attributable to the coded white entries in this exhibit?

A. Yes.

Q. And I believe that you testified in response to Mr. Dixon's questions that you thought it was entirely appropriate to include those because -- into your sales analysis because they were attributed to, one, either the standard system or, two, the integrated system or both. Is that correct?

A. Yes.

Q. If you excluded all of the entries coded in white entirely from your analysis, as Mr. Dixon suggested would be the more conservative way of doing it, would it ultimately affect your analysis in these IPRs?

A. Not at all.

Q. Why not?

A. Well, the sales that are listed in white are a small part of CAB's 2018 sales. So if you just eyeball them and you ask yourself how much of

CAB's $5.9 million in sales does this account for, it's a very small fraction. The entries are in the hundreds or low thousands of dollars across these seven pages.

So I gave an example of 20 percent, which I think overstates the case. But even if you said it was 20 percent of CAB sales, that would only be approximately a million dollars.

Over the eight-year period that we're discussing of $250 million in sales, that's not much more than a rounding error.

So none of my conclusions about CAB's commercial success would change if you had simply eliminated all of the rows that are not assigned to either the '291 or the '551.

MR. FLYNN: Thank you. I have nothing further.

MR. DIXON: I have nothing further either.

(Off the record at 7:00 p.m.)

CERTIFICATE OF SHORTHAND REPORTER - NOTARY PUBLIC

I, Michelle Keegan, Registered Merit Reporter and Notary Public within and for the Commonwealth of Massachusetts, do hereby certify:

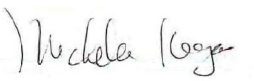
That JONATHAN D. PUTNAM, PH.D., the witness whose deposition is hereinbefore set forth, was duly sworn by me before the commencement of such deposition and that such deposition was taken before me and is a true record of the testimony given by such witness.

I further certify that the adverse party was represented by counsel at the deposition.

I further certify that the deposition of JONATHAN D. PUTNAM, PH.D. occurred at the offices of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., One Financial Center, Boston, Massachusetts 02111, on Thursday, October 3, 2024, commencing at 9:42 a.m. to 7:00 p.m.

I further certify that I am not related to any of the parties to this action by blood or marriage, I am not employed by or an attorney to any of the parties in this action, and that I am in no way interested, financially or otherwise, in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 3rd day of October, 2024.
My commission expires May 15, 2026.



NOTARY PUBLIC IN AND FOR THE COMMONWEALTH OF MASSACHUSETTS

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