FEDERAL TRADE COMMISSION

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UNITED STATES OF AMERICA

FEDERAL TRADE COMMISSION

In the Matter of:)

Rambus, Inc.) Docket No. 9302

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Tuesday, May 20, 2003

9:30 a.m.

TRIAL VOLUME 12

PART 1

PUBLIC RECORD

BEFORE THE HONORABLE STEPHEN J. McGUIRE

Chief Administrative Law Judge

Federal Trade Commission

600 Pennsylvania Avenue, N.W.

Washington, D.C.

Reported by: Sally Jo Bowling

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P R O C E E D I N G S

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JUDGE McGUIRE: This hearing is now in order. Any issues that should come to the Court's attention before we start today? If not, complaint counsel may call its next witness.

MR. ROYALL: Your Honor, initially I would like to introduce Andrew Heimert who will be handling our witness this morning.

JUDGE McGUIRE: Could you tell me again how to spell your last name?

MR. HEIMERT: It's H E I M E R T, Your Honor.

JUDGE McGUIRE: M E R T, okay, very good.

MR. HEIMERT: This morning, complaint counsel would like to call Jackie Gross, please.

Whereupon--

JACQUELYN GROSS

a witness, called for examination, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HEIMERT:

Q. Good morning, Ms. Gross.

A. Good morning.

Q. Could you state your full name for the record, please.

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A. Jacquelyn Gross.

Q. And Ms. Gross, who is your employer?

A. Hewlett Packard.

Q. How long have you been employed by Hewlett Packard?

A. I've been employed by Hewlett Packard since just about a year ago when Compaq and Hewlett Packard merged. I was a Compaq employee that became a Hewlett Packard employee.

Q. So, you worked at Compaq before 2002?

A. Yes.

Q. And how long were you working at Compaq?

A. Since 1989.

Q. What is your title at Hewlett Packard?

A. I'm the director of memory procurement.

Q. And what was your job at Compaq just prior to merger?

A. I was the director of memory procurement.

Q. Were you employed by anyone before Compaq?

A. Yes, I was employed by Texas Instruments.

Q. And when were you working for Texas Instruments?

A. From 1981 to 1989.

Q. Did you have any other jobs before that?

A. No, I was in college prior to that.

Q. Where were you in college?

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A. Southern Illinois University.

Q. And what was your degree in at Southern Illinois?

A. I have a bachelor's degree in radio television and an associate's degree in electronics technology.

Q. Your associate's degree in electronics technology, what does that course of study involve?

A. Just fundamental electronics theory.

Q. Does that qualify you to be an electrical engineer?

A. No. It's not an electrical engineering degree, but it does have some of the same basic fundamentals, and I was employed as an engineer at Texas Instruments.

Q. Do you have any other degrees?

A. Yes, I have a master's in business degree from Our Lady of the Lake University in San Antonio, Texas.

Q. And when did you receive that degree?

A. 1997.

Q. So, that was while you were working at Compaq?

A. Yes.

Q. I would like you to describe Hewlett Packard's business briefly, if you could tell me what business they are in, please.

A. We are in the business of information technology. We provide hardware in the form of

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computing equipment as well as printing and imaging equipment like cameras and printers, as well as services to work with customers to coordinate and find information solutions, information technology, processing solution for our customers.

Q. You mentioned computers, are there more than one type of computer that Hewlett Packard makes?

A. Yes. We make a range of computing products from hand-held and notebook computers through desktops, servers and supercomputers.

Q. What about Compaq's business, what does Compaq's business entail?

A. Compaq's business was similar and included products, did not include the printing and imaging.

Q. Do you know what HP's market share is for computers?

A. Yes, it's approximately 14 percent worldwide.

Q. And what about the United States market?

A. It's similar, it might be 13 or so percent, but it's a similar number.

Q. Do you know where that ranks among computer manufacturers?

A. HP and Dell tend to vie for the number one spot from quarter to quarter, but I believe right now we're number two in the United States.

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Q. Let's go back to your job, if you could describe what you do as the director of member procurement. What are your principal responsibilities?

A. Most briefly, our team is chartered with procuring memory for the manufacture of HP products that is of the best price, best competitive price of high quality and reliability standards, and in significant enough supply to meet the needs of the manufacturing facilities that support us.

Q. You mentioned a team, do you have a team of people that works for you?

A. Yes.

Q. And approximately how many employees are on that team?

A. Thirty-five.

Q. And is the team divided up into functions in any way?

A. Yes. We have three main functions. One is the engineering team that identifies specifications and works to develop standards for products, and interfaces with the product development teams in terms of defining the memory needs for our next computer product. We have a group of people that are part of our business team that are in charge of the business terms and conditions with our suppliers, such as price negotiations, legal

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terms and other commercial terms. And finally we have a third team that is a planning team that is responsible for the forecast of our demand to our suppliers in understanding the supplier's ability to respond to that.

Q. Was the team -- how does that team structure compare to what it was at Compaq?

A. Very similar. Of course almost twice as many people.

Q. But organizationally, is it similar or not?

A. Yes.

Q. You mentioned three components of -- or three objectives, price, what is your or HP's objective with respect to price on memory procurement?

A. Simply put, we are chartered to try to achieve the world's best price relative to memory, that is because we are one of the largest consumers of memory in the world, and so we strive to have one of the best prices.

Q. And when you say price, do you mean price to consumer or do you mean price that you are purchasing memory at?

A. Price to HP.

Q. You also mentioned quality of reliability. Why is that important?

A. Certainly HP's brand relies on providing high

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quality reliability of our systems to our customers, so we want to build with components that are of high quality and reliability.

Q. And you've also mentioned sufficient supply. What do you mean by sufficient supply?

A. We not only need to enable sufficient supply to meet our manufacturing plans, but enough flexibility in our supplies such that we can respond to unforecasted customer demand or changes in customer demand.

Q. Are you familiar with the costs of putting together an entire computer product for sale?

A. In a general sense, yes.

Q. Are you familiar with what percentage of a computer's cost the memory cost is?

A. Yes.

Q. And what, approximately, is that percentage?

A. To be honest, it varies from time to time, as memory pricing is quite volatile and changes. Probably at the highest -- at the highest point, memory is about 15 percent of a unit's material cost, and could get as low as two percent, depending on the unit and the time frame.

Q. When did it reach its high of 15 percent?

A. Last I recall was late in 1995.

Q. And what about the low of two percent, when was

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that?

A. There are probably several points, the last four or five years, memory price has been particularly rapidly declining.

Q. Now, you mentioned the planning team and that they forecast what your memory needs will be. Could you step me through how they -- how that part of your team makes those forecasts?

A. Sure. They work with each of our different product groups to understand their anticipated manufacturing plans, and then they work, also, with the engineering teams to understand approximately how much memory would be involved in the manufacture of each computer. And also understand from our product planning teams where these computers will be built and they develop a forecast to our suppliers that tells them by memory part number how much demand for each type of memory we have at each manufacturing site around the world for the next three-month period.

Q. Do they limit their forecasts to three-month periods?

A. No, we actually do forecasts that look out 12-month rolling average, but the three-month forecast is the most detailed and specific.

Q. You mentioned multiple manufacturing sites.

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Does HP have multiple manufacturing sites?

A. Yes, they do, and we also have third party partners who manufacture for us, and the sum total of sites ranges between 50 to 70 sites.

Q. The 50 to 70 sites are HP-only facilities?

A. HP or our partners' facilities.

Q. Or partners. And where are they located?

A. They are globally distributed around the world.

Q. What you've just testified to, your job at Compaq, again, was that similar and the teams responsibilities similar?

A. Yes.

Q. Are there any differences?

A. We do have on the HP team the ability to focus a little more on some advanced financial analysis such as risk management techniques to reduce the risk of changes in pricing or supply, the impact of those risks to HP. And that's a function we didn't have a lot of support for in Compaq.

Q. Let's turn to your purchase of memory. For what products do you purchase memory?

A. All products that HP produces.

Q. Approximately what percentage of your purchases is for computers?

A. Ninety-five percent.

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Q. What about for other products?

A. The remaining five percent would be the memory that belongs in printers and cameras and camera accessories.

Q. Now, when you say computers, does computers include servers?

A. Yes, they do.

Q. And of that 95 percent, what percent do you know, if you know, is for servers and what percent for computers?

A. Servers would be approximately 30 to 35 percent. About 50 percent of the memory we purchase would go into notebooks and desktop computers.

Q. And do you purchase different types of memory?

A. Yes.

Q. What different types of memory does HP purchase?

A. The differentiation falls into two categories. There's technology differences, such as EDO or SDRAM or DDR or Rambus DRAM, as well as memory differences such as 64 megabit or 128 megabit or 256 megabit.

Q. You mentioned SDRAM, what is SDRAM?

A. Synchronous DRAM.

Q. And what about DDR?

A. Double data rate or digital data rate.

Q. What is Rambus DRAM?

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A. Rambus DRAM is a technology of -- well, first of all, I guess I should say that each of these technologies, the differentiator is the methods by which data are put in and taken out of the memory devices, and so the Rambus DRAM technology would be another approach to that that was developed by Rambus.

Q. And you mentioned EDO, what is that?

A. That's extended data out.

Q. Is that currently in use?

A. It's an older technology that we probably have a very small portion of products in their mature stage of life utilizing them.

Q. Do you still purchase EDO memory, does HP purchase EDO memory?

A. We do, but in an extremely small amount, probably less than one percent of our total purchases.

Q. And what percent of HP's total purchases are SDRAM memory?

A. Today, about 20 percent.

Q. And what's the percentage for DDR SDRAM memory?

A. Roughly 80 percent.

Q. And what about for percentage-wise of total purchases is Rambus DRAM?

A. Less than one percent.

Q. All told, HP's memory purchases of world

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production of DRAM memory, do you know what percent HP's purchases are?

A. Yes, we utilize somewhere between 12 and 15 percent of the global memory output. It does vary by quarter due to the seasonality of products.

Q. Let's turn back a little bit to the uses of the different types of memory. SDRAM, you mentioned, what is that, what types of products is SDRAM currently used in?

A. Today, SDRAM is used in our printer products and our server products. We have some more mature notebooks that are still utilizing SDRAM.

Q. When you say more mature, what do you mean by that?

A. They were designed a few years ago. Our newer models incorporate DDR memory.

Q. When did HP begin using SDRAM?

A. I believe around 1997.

Q. Now, in 1997, you were working for Compaq. Is that correct?

A. Yes, I'm sorry, I should clarify.

Q. And when did Compaq begin using SDRAM?

A. Compaq began using SDRAM in 1997, I should clarify that, I really don't have an analogy of HP's use.

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Q. And let me go through the same questions for DDR. What products is DDR SDRAM used in today by HP?

A. DDR is utilized by our desktop, notebook and servers as well.

Q. And when did HP begin using DDR?

A. 2001.

Q. And you were Compaq at that point?

A. Yes.

Q. So, what year did Compaq begin using it?

A. Yes, I apologize, I need to keep specifying.

Q. I'm being confusing, too, I'm sorry.

A. In the year 2001, Compaq was using DDR, I was not working at HP at the time.

Q. To your knowledge, did HP adopt DDR memory at approximately the same time, if you know?

A. Yes, to my knowledge.

Q. And RDRAM, do you use RDRAM in any products?

A. Yes, we do, we use RDRAM in a small number of workstation products as well as a high-end supercomputer based on the configuration.

Q. When did HP or Compaq, depending on the date, begin to use RDRAM?

A. I believe it was 1999.

Q. Why -- well, we'll get into this anyway, I'll withdraw that question.

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If we can turn to suppliers, does HP have relationships with more than one memory supplier?

A. Yes.

Q. How many do you have relationships with?

A. We have active relationships with all of the significant -- all of the DRAM manufacturers that are responsible for a significant portion of global output.

Q. Could you name those manufacturers?

A. Yes. Samsung, Micron, Infineon, Hynix, Elpida, Winbond, Mosel Vitelic and Nanya.

Q. What is your relationship with the suppliers, what causes you to form a relationship with all of these suppliers?

A. We have a very significant level of business together. In 2003 we estimate that we will spend approximately $3 billion dollars on DRAM devices, and most of that will be with the four or five largest suppliers, so our business level with each of those suppliers is quite significant, and it's important that we engage over broad territory to discuss product development and business terms often.

Q. What are the most important elements of your relationships with your suppliers?

A. Well, certainly there's a foundation of support from our suppliers so that it's understood that in order

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to preserve the relationship, they need to provide competitive costs, adequate supply, and the technology that aligns with the needs of our products.

Q. When you say technology that aligns with the needs of your products, how do you determine whether they're going to provide supply to the alliance of your needs.

A. We frequently meet with the technical teams as well as the executive teams with each of our largest partners to exchange projections into the future of the types of technology that we're going to be needing in our computers, as well as the types of technologies and the mix in volumes that the suppliers plan to manufacture. And we endeavor to work toward a very close alignment of those technology road maps.

Q. Do you evaluate your suppliers in any way?

A. Yes. We meet quarterly with our major suppliers, and we have a report card system where we provide formal feedback to each supplier relative to their technology, quality, reliability, service and cost.

Q. When you say quality, could you explain what you mean by the term "quality?"

A. Yes. From a standpoint of quality, we look at defects that occur, the frequency and level of defects

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that might occur at manufacturing facilities with that supplier's product.

Q. And you mentioned price, how do you evaluate them on price?

A. We would evaluate how aggressively the supplier provides pricing that reflects the global spot market and provides advantage to HP relative to the amount, the high level of volume that we purchase.

Q. And going back to the aligned with the HP direction, you mentioned alignment, you discuss your needs with suppliers. Is that correct?

A. Yes. And so the feedback that we would give to each supplier at these quarterly reviews would be relative to how well they are leading technology; in other words, kind of being the first to offer a new technology, but also how well they have aligned to the technology needs of HP, because it's important, of course, that we have continuous support from our suppliers so that alignment is very important.

Q. What if a supplier is not aligning with the direction that HP has gone in. What do you do?

A. There's a clear risk that the business level can be impacted. Again, you know, it's fundamental that the supplier enable our business by providing competitive costs and the appropriate technology and the appropriate

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level of supply. So, if they don't do that, if they're not aligned with our technology, we consider it their -- they're not enabling our business in the amount that we endeavor to keep it.

Q. If they weren't aligning, would you terminate that supplier?

A. You know, we don't often terminate suppliers, because there are not a huge number of DRAM suppliers, these are generally long-term relationships, but in the few times, if we've had occasion to terminate suppliers when we had to reduce our supply base, we would look at this feedback that we've provided consistently and the supplier that consistently performed poorly relative to our expectations would be the supplier that would get eliminated.

Q. Do you attempt to work with the supplier, before terminating, to upgrade their grade?

A. Absolutely. And that's why we have these quarterly reviews. We review the report card and the logic that went behind the feedback and, you know, both the things that they are doing well as well as the opportunities for improvement.

Q. Has a supplier ever refused to align its products with what HP's direction is?

A. Well, suppliers are, you know, responsible for

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their own business, and they can choose to not support a product that we plan to develop, absolutely.

Q. If a supplier chose not to produce a product, you would consider that -- HP would consider that a negative?

A. Yes. We would certainly advise that supplier that if our direction was to utilize a certain technology that they plan not to support, that that may risk some of their planned business level with us, because that would be business that they could not participate in.

Q. Let me go back to -- turn back to price. You mentioned price is important. Is manufacture of computers for HP a profitable business?

A. Generally, yes.

Q. Is it a high margin business or a low margin business?

A. Over the last several years, it's been a fairly low margin business.

Q. And let's turn to supply for a moment. You mentioned reliable supply. Does HP have inventory of memory chips?

A. No, HP endeavors not to maintain inventory. Instead, our suppliers hold supplier-owned inventory in hubs that are physically related nearby to our

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manufacturing facilities and our partners' manufacturing facilities.

Q. Why does HP not hold the inventory?

A. It's a very typical trend in the electronics industry and the computing industry to build with adjusting time, philosophy to manufacturing, which says you don't own the materials you need until you pull them to consume them. And that's pretty much been HP's approach and Compaq's in the past.

Q. Approximately how long -- how long of production inventory do the memory manufacturers hold near HP's plants?

A. The agreed-upon --

MR. GATES: Objection, Your Honor, I believe that lacks foundation. The question was about memory manufacturers.

JUDGE McGUIRE: Do you want to respond to that?

MR. HEIMERT: I'll rephrase.

Do you discuss with memory manufacturers their holding of inventory for HP?

THE WITNESS: Yes, we discuss it.

BY MR. HEIMERT:

Q. And do the memory manufacturers inform you as to the amount of inventory that they will hold?

A. Yes.

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Q. And what amount of inventory do the manufacturers hold?

MR. GATES: Objection, Your Honor, vague as to time and as to which manufacturers.

JUDGE McGUIRE: Sustained.

BY MR. HEIMERT:

Q. Taking specific memory manufacturers, say Samsung, do you have a relationship with Samsung?

A. Yes, we do.

Q. Does Samsung hold inventory for you?

A. Yes, they do.

Q. And approximately how many days worth of production inventory does Samsung hold, on average, at the various HP facilities?

MR. GATES: Objection, Your Honor, this calls for hearsay.

JUDGE McGUIRE: Mr. Heimert?

BY MR. HEIMERT:

Q. Do you know from your business operations how much Samsung holds in inventory?

A. Yes, we do have visibility into their inventory space on our electronics systems.

Q. And is their visibility your own personal knowledge?

A. I have in the past, it's not my daily activity

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to look at these levels; however, we do, again, feed back to our suppliers how well they meet the expectation of a two-week inventory buffer at our hubs.

Q. And what is the amount of inventory in terms of production time that Samsung holds at its hubs based on your knowledge?

MR. GATES: Objection, Your Honor, this still calls for hearsay.

MR. HEIMERT: Your Honor, I had asked in her knowledge.

JUDGE McGUIRE: Well, that's not the -- well, you said based on your knowledge, all right, overruled. You can answer if you know the question.

THE WITNESS: We do have specific knowledge of the inventory level that's part of the agreement relative to the hub process, and typically in recent history, Samsung has about one week's inventory in our hubs at a time.

BY MR. HEIMERT:

Q. And in your experience, is that one week inventory figure similar for other memory manufacturers with whom you have a supplier relationship?

A. Roughly. Generally, the inventory level is somewhat between one week and two weeks, and in times of industry allocation, that level dwindles lower.

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Q. When you arrange a supply contract with a memory supplier, how do you know that the memory you will be purchasing is DDR or SDRAM or whatever the relevant specification for the memory is?

A. The part number that we specify on a purchase order refers to internal HP specification, which is generated based on the industry standard specification for such memory. So, there's a very detailed description attached to the HP part number.

Q. Prior to using a type of memory, do you test that memory in any -- does HP test that memory in any way?

A. Yes. We perform what we call a qualification test which is to take some samples of the supplier's memory and test them in our systems that they are intended to be used in to make sure that they will operate as expected.

Q. And approximately how long does that qualification process last?

A. It varies depending on the system, from three days to it can be several months in our very high-end computers.

Q. What if the memory samples do not work in the system that you have?

A. We would advise the DRAM supplier that the

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products failed our qualification testing and provide some feedback relative to the failures and the type of -- the type of failure that we saw so that the supplier could try to address and correct the problem.

Q. What if there's a problem once they're into full-scale production, do you have a process for dealing with that situation? Does HP have a process for dealing with that situation?

A. Yes, we have a feedback process by which we provide defective samples back to the supplier and there's an expected response that they provide that details the corrective action, first of all, what was the cause of the problem, and what they did to correct it such that they could correct it.

Q. Does HP or Compaq, again based on your experience with both companies, ever change the type of memory that it uses in its computers?

A. Yes.

Q. And what would start the process of changing the type of memory?

A. Most technology transitions, changes in the type of technology, are driven by new processor and/or chip set combinations. Generally, our product development teams in developing the next new product would consider microprocessors and chip sets and the features that they

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would enable for a customer, and that processor and chip set combination that is decided upon dictates the type of memory that needs to be used in combination.

Q. How would HP learn that a new chip set was in development?

A. The product development teams, as well as the procurement teams responsible for chip sets have ongoing conversations and meetings with our suppliers and with potential suppliers to discuss their offerings and the capabilities and features of the supplier's offerings.

Q. And if HP learns that a new chip set is going to be developed, what are the next steps that it takes to develop its own products in accordance with that chip set?

MR. GATES: Objection, Your Honor. I think this witness lacks foundation.

JUDGE McGUIRE: Sustained.

BY MR. HEIMERT:

Q. In your experience as memory procurement, are you familiar with HP's development of computer systems?

A. Yes, we work with -- we interface with the development teams.

Q. The development teams in what areas of HP's business?

A. Those teams that develop computing, printing and

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imaging products.

Q. And -- withdrawn.

Do your procurement engineers speak with those development teams about new chip sets and new systems that they may be developing?

A. Yes.

Q. And if your procurement engineers learn of a new chip set, what are their responsibilities with respect to that new chip set?

A. Should the new chip set to be implemented require a memory that we are currently utilizing, we would just assure that the volumes that we intend in the future could be met, but if the new chip set required a transition to a type of memory technology that we have not used before at HP, we would get involved in a process to understand in great detail the suppliers, all of our suppliers of that technology's capabilities relative to supporting that new technology.

Q. How does HP go about understanding what your suppliers' capabilities are?

A. Well, initially we would issue very detailed surveys to all of our suppliers or all the potential suppliers of such a technology questioning their plans to manufacture such a technology, their planned volume ramp of such technologies, and when they would have

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available samples and production of technologies, and put that information together from all of the suppliers and discuss it with the development teams relative to how well the industry can enable usage of that technology and in how well HP could enable that new technology.

Q. You mentioned the term "ramp," what do you mean by ramp?

A. When I refer to a volume ramp, we are talking about a very brief period, usually a month, from the time when we build our first revenuable system for sale to ramp to the full production volumes or the steady state level of manufacturing volumes in some product areas that could be quite a dramatic shift in terms of level of volumes produced.

Q. You mentioned that a chip set may require a new type of memory, can a chip set take more than one type of memory?

A. Generally, no.

Q. Are there any instances in which it can?

A. Not that I'm aware of, although I'm not a specialist on all of the chip set capabilities.

Q. Are any of the chip sets that you purchase memory for, do any of those take more than one type of memory?

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A. Not that I'm aware of.

Q. When you were at Compaq, did Compaq switch at any point from SDRAM to Rambus DRAM for its computers?

A. Yes.

Q. And were you personally involved in the process of switching from SDRAM to Rambus DRAM?

A. Yes.

Q. And approximately when did that transition take place?

A. We learned of the potential for that transition in late 1997 or early 1998, and I believe the actual transition started taking place in early 1999, so there was some discussion and investigation of this transition throughout that time period.

Q. Do you know why Compaq planned to change the memory from SDRAM to RDRAM?

A. Yes. Our development teams in discussions with Intel anticipated that Rambus DRAM in conjunction with a processor and chip set combination would offer very attractive features to our end customers.

Q. What were those attractive features?

A. I'm not a product specialist, but my understanding was that it did enable faster DRAM and faster response to some of the features that this chip set and processor would enable.

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Q. Were there any other features or benefits from RDRAM?

A. I believe that there were, although relative to some particular applications the customer might use in terms of graphics, but again, that's not my area of expertise.

Q. Were there any drawbacks to the adoption RDRAM or the transition to RDRAM?

A. Yes, absolutely. At the time, the DRAM suppliers were financially challenged, and the RDRAM technology was seen as revolutionary rather than evolutionary, if you would, and by that I mean that RDRAM was an entire change in the approach of getting data into and out of the computer, and the alternative technology, DDR, was a evolutionary or kind of a new, improved approach on the current technology. So, it represented a challenge in a number of ways.

Q. And you said that the DRAM manufacturers were financially challenged. Why was that a problem for RDRAM?

MR. GATES: Objection, Your Honor, lack of foundation.

JUDGE McGUIRE: Sustained.

BY MR. HEIMERT:

Q. You mentioned one of the drawbacks was the

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memory manufacturers were financially challenged. Is that correct?

A. Yes.

Q. Did HP, or excuse me, did Compaq see that as a drawback for RDRAM?

A. Yes.

Q. Why did it see it as a drawback for RDRAM?

A. It was our information from the DRAM suppliers as well as from Intel that at the time there were two alternatives --

MR. GATES: Objection, Your Honor, I think the witness is giving us hearsay right now.

JUDGE McGUIRE: Any response, Mr. Heimert?

MR. HEIMERT: Excuse me, Your Honor?

JUDGE McGUIRE: Do you have anything in response?

MR. HEIMERT: Well, I think she ought to be able to complete her answer, first of all.

JUDGE McGUIRE: Well, go ahead and complete your answer, if you could.

THE WITNESS: It was our information at the time based on conversations with both Intel and DRAM suppliers with Compaq that there were two choices for the future technology path. RDRAM was a more expensive choice because in order to execute it, the suppliers

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would have to make some capital investments that were not required should the future technology choice be DDR.

MR. GATES: I'll renew my objection, Your Honor, and move to strike.

JUDGE McGUIRE: Overruled. You may proceed.

MR. HEIMERT: Excuse me, Your Honor?

JUDGE McGUIRE: I said overruled, you may proceed.

MR. HEIMERT: Thank you. Thank you, Your Honor.

BY MR. HEIMERT:

Q. Did you -- did Compaq ultimately put RDRAM in any of its products?

A. Yes, we did.

Q. And what was your experience, what was HP's -- excuse me, strike that.

What was Compaq's experience in the sales of those products?

A. We did not sell the anticipated level of systems that we had forecasted with RDRAM in them, although the RDRAM enabled an improvement in performance, it was also at a time that the customers became very cost conscious relative to the cost that they were willing to pay for computers, and it didn't seem that the customers were willing to pay extra for the benefits of RDRAM.

Q. How did Compaq determine that the customers were

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not willing to pay for the benefits of RDRAM?

A. We were not able to increase our unit prices sufficiently to account for the differences in price in the RDRAM memory and other components of M60.

Q. Just to go back, what were the products that RDRAM was used in?

A. Desktop products and workstations.

Q. You mentioned that there were high capital costs to RDRAM. Did Compaq make any efforts to defray those capital costs?

A. We considered the possibility of investing in -- well, in making an investment in a DRAM supplier such to enable that capital investment and to give us in turn some preferential supply.

Q. Were there other benefits besides preferential supply in making such an investment?

A. There may have been, I don't recall the details of the proposal very clearly, but in the end we did not go forward with it, but we did consider it.

Q. Do you know why Compaq didn't go forward with the proposed investment?

A. Yes, we generally refrain from getting too involved in the semiconductor aspect of the business as it was perceived to be risky.

Q. And what types of risk did HP perceive the

2295

semiconductor industry to have?

A. The semiconductor industry is much more intensive in terms of what Compaq was used to relative to computing and we just chose not to get involved in that, because it was an unpredictable outcome.

Q. Now, I think I had asked that with respect to HP, was that testimony you just gave with respect to Compaq?

A. Yes.

Q. And you were employed by Compaq at the time of this proposed investment?

A. Yes.

Q. Were there any other problems with RDRAM that Compaq received in its use?

A. It did appear that RDRAM would cost more than alternative technologies for a substantial period of time.

Q. Why, in your experience, did you expect RDRAM to cost more?

A. Because the DRAM suppliers would have this capital investment and would need to recover them.

Q. Were there any design problems with respect to RDRAM of which HP was aware? Excuse me, in which Compaq was aware?

A. With every new technology, there are generally

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design issues, because this was a revolutionary rather than evolutionary technology, there may have been more, but again, I was not specifically involved in the design aspects.

Q. Did Compaq discontinue using RDRAM in its products?

A. We discontinued using RDRAM in our high volume products, we do continue to use them in some small volumes of high purchase products.

Q. When you discontinued RDRAM, did Compaq choose another memory to use in its -- in the products in which it discontinued RDRAM?

A. Yes, we chose to go forward with DDR.

Q. And why did Compaq choose DDR?

A. DDR appeared to us to be the next mainstream high volume industry memory technology. It did offer continued improvement over SDRAM, and so we felt we were following the development progression of the memory industry.

Q. When was Compaq shifting to DDR from RDRAM?

A. Some of our equipment may have shifted to SDR from RDRAM and then later to DDR, but the implementation of DDR began in 2001.

Q. You mentioned earlier that DDR was evolutionary. Is that correct?

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A. That was a discussion that we often had.

Q. What do you mean by the term evolutionary?

A. That it was an improvement and had a lot in common with the prior technology SDRAM relative to the way it was utilized to get data in and out of the device.

Q. Does Compaq prefer using revolutionary memory or an evolutionary memory?

A. Generally we prefer using a memory that will enable appropriate levels of supply and competitive cost and the features our customers are interested in, but revolutionary memory kind of implies that it might be more challenging in adoption, because there's more differences in, you know, a whole new technology, bottoms up.

Q. Why would the adoption of a revolutionary memory be more challenging?

A. Well, I would presume that an evolutionary -- an evolutionary approach, you would understand some of the challenges and already have addressed them, where you may have some unanticipated problems in a wholly new design, but again, this is a generalist comment, I'm not a designer.

Q. Let's turn back to the change of memory type more generally. When Compaq, or HP now, identifies the

2298

possibility of an introduction of a new type of memory, what are your principal concerns that you focus on in planning for that transition?

A. Well, we try to understand the manufacturer's plans relative to increasing their output of that type of memory. We try to understand our development team's needs and schedules for testing and introducing that memory, and we try to understand or estimate the potential for changing price as that new technology is introduced.

Q. The change in price, what -- why does the change in price matter?

A. There is a history in the memory industry in terms of procurement that as a new technology is introduced, there are often mismatches in supply and demand that cause price increases.

Q. Are those price increases temporary or permanent?

A. They are temporary, but can be quite radical.

Q. When you say quite radical, could you give me an example of a percentage increase in price?

A. Yes. It's not unheard of for a price to double in the period of several months.

Q. And how long would that doubling price last in your experience?

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A. It varies based on the situation, but most often, probably four or five months.

Q. When you said you wanted to understand manufacturer's plans, what about their plans, specifically, do you need to understand?

A. Well, we take a look at what new variables might be introduced in their introduction of this technology, from the standpoint of do they need additional processes or additional equipment in order to produce it, and then make sure that the investments have been made and we follow their progress in introducing this technology relative to, you know, are they having success with their first prototypes, are they testing and yielding well, are they producing samples as forecasted, how are those first initial samples that we see, how are they working in our systems. So, we quite frequently touch base with the suppliers to make sure that the outcome of their development activity and product launch activity is aligning with our initial information that they provided to us.

Q. Is it important that the manufacturers be able to meet HP's expected volume needs?

A. Absolutely. Every computer we manufacture has DRAM in it, and without DRAM, we don't ship our product.

Q. And when Compaq or HP is considering a new type

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of memory, does it take any benefits with the customer into account?

A. Absolutely. Of course that's not a procurement focus, but the product development teams in addition to working with the procurement teams, work with the marketing teams to address the customer need.

Q. Does HP or Compaq have a preference about the frequency of changing the types of memories it uses?

A. There's not one set time frame; however, in a general sense, we do not want to change very frequently technologies that are utilized in our systems, because there is some expectation from the customers to have available memory so that you can add memory to the existing system that you might have purchased, so and often, our larger customers might take memory purchase in one system and take it out and put it in another system. So, although we might -- it's kind of a balance. Although we need to improve our systems to reflect the latest technology, we don't want to do that so much that we introduce customer dissatisfaction because we constantly have a new type of memory in the system.

Q. Why do customers care about not having memory available going forward?

MR. GATES: Objection, Your Honor, lacks

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foundation.

JUDGE McGUIRE: Overruled.

THE WITNESS: It's our understanding based on feedback from the product and marketing teams that the performance of a given computer system can be improved based on the amount of memory in the system. And so, often, systems are purchased with what we would call expandability or the potential to dramatically increase the amount of memory in the system, and often that is done later in life and not at the point of purchase.

BY MR. HEIMERT:

Q. Is there a term for being able to expand memory subsequent to the purchase of the computer?

A. There's probably a number of terms for it, we refer to it at HP and Compaq as adding options or upgrades or accessories to the systems.

Q. Are you familiar with the term "backward capability?"

A. Yes.

Q. What does backward capability mean?

A. Backward capability is the concept that, for example, a system that you buy today in 2003, if you were to have the memory in that system, and be able to plug it into a system that you bought last year, an older system, that that would have backward capability,

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the memory in the system today would have backward capability to the last year's system.

Q. Does HP consider backward capability an important feature in its computers?

A. It is an important feature, but it does get balanced against utilizing the latest in technology.

Q. When HP decides to make a change to its memory, does the new memory have to add performance in some way?

A. Yes, I can't think of a significant transition we have made that did not also come with performance improvements.

Q. So, HP has, to your knowledge, never changed to a new memory that did not add some performance benefit?

A. There might be cases that the cost was significantly cheaper, and maybe we didn't, you know, if we had an overpowered, for example, if we had a memory in the computer that the customer didn't show a preference for, using a lower cost memory, we might change the approach. It's very -- it's very much a direction decided by the product development teams relative to their working with marketing and deciding what the customer wants for that system.

Q. And is this true of Compaq as well, did they ever adopt a memory that didn't have a performance benefit?

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A. Yes, only -- they would only do that in the case of a cost benefit without a perceived customer detriment.

Q. All right, let me move along. Are you familiar with an organization known as JEDEC?

A. Yes.

Q. What is JEDEC?

A. JEDEC is an industry standardization organization.

Q. Did you participate personally in JEDEC?

A. No, I have not.

Q. Did anyone from Compaq participate in JEDEC?

A. Yes.

Q. Who was that?

A. In the Compaq team, Miguel Guzman was an engineering manager who worked for me, was our JEDEC representative, and on the HP team currently, Elon Kraszinski is the JEDEC representative for HP and is also on our team.

Q. You said Mr. Guzman was on your team while you were employed by Compaq?

A. Yes, I'm sorry.

Q. Why does Compaq or why did Compaq have an employee attend JEDEC?

A. We believe it's important to both understand the

2304

development of future standards, as well as to influence the development of future standards relative to those meeting the needs of HP.

Q. Does HP have an employee attend JEDEC for the same reasons?

A. Yes.

Q. Are there other reasons that Compaq or HP finds participation in JEDEC valuable?

A. Yes, I believe that it gives us technical information relative to the direction of the industry, and again, allows us to influence that. We often learn some general industry trends from some of the social activity that comes from JEDEC.

Q. Why is influencing the development important to HP?

A. We think that certainly from a standpoint of technology developments, we are the customer for many of the DRAM manufacturers, and so having a joint counsel or committee that is made up of both users and manufacturers seems to be a solid approach.

Q. And you testified that JEDEC also helps keep you informed of the direction of the industry. Is that correct?

A. Yes.

Q. How does that benefit HP or Compaq when you were

2305

working there?

A. We plan with all of our feature products to utilize industry standard material to a very high level.

Q. Why is industry standard material used to a high level?

A. For a number of very important reasons, generally industry standard material is made in the highest volumes, which enables the most competitive costs and price. We also find that supply availability is improved when, again, you use that product that is produced in the highest volume. And customer capability and availability is satisfied.

Q. You testified that JEDEC is generally important to HP's business?

A. Yes, our participation in the standards that come from JEDEC are important.

Q. Do you need to know the source of where the standard comes from?

A. I personally don't, no. I think there's -- well, there is a general agreement with HP and our suppliers that there will be an industry standard. I think historically the sources have been JEDEC and/or Intel or some combination of the two.

Q. Does HP, does Hewlett Packard ever buy DRAM that doesn't comply with the JEDEC standard?

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A. We may have purchased some that complied with an Intel standard in conjunction with a JEDEC standard or some combination, but an industry standard product is very important to us, and there may be times that we purchased products that had features that were in addition to industry standards.

Q. But those products would have complied with the standard?

A. Yes.

Q. Why is having an industry standard important to HP?

A. Again, it enables in our opinion the best level of pricing, availability, and capability for upgrades and backward capability for our customers.

Q. Why in your experience does having the industry standard create the best level of pricing?

A. The industry standard products are most often produced in the highest volume in the industry, and those efficiencies in manufacturing and the level of competition in that production enables the best cost per bit.

Q. And why does an industry standard, in your experience, create better availability?

A. Because all of the DRAM manufacturers would strive to meet those standards and produce product that

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aligned with those standards.

Q. Are you familiar with the term "commodity?"

A. Yes.

Q. What does the term "commodity" mean to you?

A. To me a commodity is a product that is most influenced by economic factors such as supply and demand.

Q. Based on your experience at HP, is the memory market a commodity market?

A. Probably not in a pure sense, such as something like a cocoa bean or sugar, because it is very technically complex; however, among the components that we purchase for computers, it is the most commodity-like, it is the most influenced by the global supply and demand variables.

Q. You mentioned earlier that HP had a number of suppliers. Is that correct?

A. Yes.

Q. Why is it important that HP have multiple suppliers?

A. Because we see memory as a computer commodity, and a very standardized commodity. We choose to have multiple sources of that product, because it enables competition, it allows for more available supply.

Q. How does having alternative sources, in your

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experience, enable competition?

A. Well, when you have several sources, they, of course, will compete for business, which generally produces a lower price.

Q. Could Compaq meet its needs for memory with one supplier?

A. Both Compaq and HP would probably have to take the majority of a single supplier's output in order to do that, and that would be a very high risk for both HP and the supplier, and Compaq in the past.

Q. Why would that entail a higher risk for HP?

A. Because any change to our business or the DRAM supplier's manufacturing would impact directly the other partner, and that's -- since we are independent companies, that's a fairly unacceptable risk, since it's not a necessary risk to take.

Q. Has HP had a consistent number of suppliers over the past five years?

A. No, actually, our supply base, the number of suppliers we have, has reduced, primarily because there has been a consolidation in the DRAM manufacturer industry.

Q. When has that consolidation taken place? What time period are you talking about?

A. Really since 1995 we've seen significant

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consolidation in the industry.

Q. And approximately how many companies in 1995 were there, DRAM suppliers?

A. I don't know exact numbers, but I would estimate about 15.

Q. And approximately how many are there today?

A. I would estimate most generous number is eight to ten.

Q. And in your experience working for HP, is that a positive or negative development?

A. I'm sure for the companies involved, it was a challenging development, but from our selfish perspective from a standpoint of procurement, it allowed us to work with each supplier at a higher level and probably go more in depth relative to the number of products we purchased and the amount of products we purchased from each supplier and thus have a richer relationship. We spend more time focusing on each supplier relationship.

Q. Does HP have concerns about continuing consolidation in the industry?

A. To the extent that should it get extreme such as consolidating to one source, again, then we're confronting a sole source situation and we wouldn't want that to happen. We want there to be, you know, a fair

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level of competition among our sources of supply.

Q. Are you aware of any litigation between your suppliers and Rambus?

A. Yes, I understand there has been some litigation.

Q. What does that litigation involve?

A. I believe it had to do with violation of intellectual property.

Q. And do you know what companies, which of your suppliers that litigation involves?

A. My information is secondhand from newspapers and such, but my understanding Infineon, Hynix and Micron were involved.

Q. What percentage of HP's memory purchases come from Infineon, Micron and Hynix together, if you have a rough estimate?

A. About 50 percent.

Q. Is HP concerned about the outcome of that litigation?

A. Yes.

Q. Why?

A. Any litigation outcome that would cause additional cost to be applied to the suppliers may have an impact on the price that HP pays, as we are among the largest customers of each of our suppliers.

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Q. Are there any other concerns besides increased cost?

A. Certainly should there be any result such that the supplier was unable to ship product we are currently receiving, it could threaten the manufacturing of HP products and thus our corporate readiness.

Q. What would HP have to do if one of the suppliers' manufacturing process was threatened by the litigation?

A. HP would certainly plea to the remaining suppliers to get increased support, as would most of their customers, and the result would probably be a shorter supplied market and potentially an allocated market which would result in insufficient supply to meet HP's demand.

MR. HEIMERT: If I could have a minute, Your Honor, to consult with counsel.

JUDGE McGUIRE: Go ahead.

BY MR. HEIMERT:

Q. I think I just have one more question. Would there be any consequence, other than -- withdrawn.

Would there be any consequences from the shortened supply that might result if one of your suppliers was not able to manufacture DRAM memory?

MR. GATES: Objection, Your Honor, calls for a

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hypothetical and calls for speculation.

JUDGE McGUIRE: Sustained.

MR. HEIMERT: I have no further questions, Your Honor.

JUDGE McGUIRE: All right. Counsel, I'm going to take a break, a 10-minute break, we'll come back with your cross examination, Mr. Gates. Off the record.

(Whereupon, there was a recess in the proceedings.)

JUDGE McGUIRE: At this time we will hear the cross examination of the witness. Mr. Gates?

MR. GATES: Thank you, Your Honor.

CROSS EXAMINATION

BY MR. GATES:

Q. Ms. Gross, on direct you were asked some questions about the possible effect of a lawsuit between Rambus and three other DRAM manufacturers. Do you recall that?

A. Yes.

Q. Now, you understand that that lawsuit is a patent infringement -- those lawsuits are patent infringement lawsuits. Is that your understanding?

A. Yes.

Q. And do you understand that other DRAM manufacturers have chosen to take a license from Rambus

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for their intellectual property and not litigate with them?

A. Yes.

Q. And you understand that in order for there to be an effect on Infineon, Hynix and Micron, that would only happen if there were a finding that they had infringed Rambus patents?

A. Yes, I believe so.

JUDGE McGUIRE: Ms. Gross, I'm having trouble at this point hearing you. I don't know if you've got a bad mic'. That's much better, yeah.

MR. HEIMERT: Your Honor, objection to that last question lacking foundation.

JUDGE McGUIRE: Mr. Gates, response?

MR. GATES: I'm trying to explore her foundation, Your Honor, I'm trying to understand what she knows about these lawsuits.

JUDGE McGUIRE: Overruled. I'll entertain the question.

MR. HEIMERT: Your Honor, we're having some technical problems with the computer for a moment, it's not scrolling properly, I'm sorry to interrupt.

JUDGE McGUIRE: Is it okay now? Are you still having problems?

MR. ROYALL: I'm not sure, it doesn't appear to

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be working.

JUDGE McGUIRE: Let's go off the record.

(Discussion off the record.)

JUDGE McGUIRE: Let's go back on the record. I ruled on the last objection, so Mr. Gates, you may proceed.

BY MR. GATES:

Q. Ms. Gross, going back to the litigations with Infineon, Micron and Hynix, is it your understanding that in order for there to be an injunction that would prevent those companies from manufacturing the DRAM products, there had to be a finding that the patent that Rambus holds are valid?

MR. HEIMERT: Objection, Your Honor, again, lacks foundation with respect to the injunction.

JUDGE McGUIRE: I just ruled on that motion, I believe, and I told him that I would entertain the question.

BY MR. GATES:

Q. Do you have the question?

A. I really don't understand the requirements.

Q. But you understand, don't you, that in order for there to be an effect on Infineon, Micron and Hynix's ability to manufacture, there would have to be a court order that would prevent them from doing that?

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A. It seems reasonable. I don't know.

Q. And do you understand that that would mean that Rambus had won the litigations that they have entered into?

A. That seems logical. I don't have any legal training, though.

Q. And is it your understanding that Micron, Hynix and Infineon have chosen not to take a license from Rambus?

A. I presume so, I'm not sure, I don't know that for a fact.

Q. And instead it is your understanding that they have chosen to litigate with Rambus rather than take a license?

A. Apparently.

Q. Now, on direct you talked about the transition from SDRAM to RDRAM, and I would like to go into that in a little bit more detail. You testified on direct that you only implemented RDRAM in a small number of products. Is that correct?

A. I don't recall making that reference. We did implement in our high volume products, but not for a long period of time, and today RDRAM is in just a small number of products.

Q. So, you transitioned from RDRAM to DDR?

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A. In some cases, and in some cases from RDRAM back to SDR.

Q. And in your volume products, you no longer use RDRAM?

A. That's correct.

Q. Now, that wasn't always Compaq's plan, was it?

A. No.

Q. In fact, back in 1998, you were planning to proliferate RDRAM through all of your products. Isn't that true?

A. Certainly our high volume products we were looking -- we were evaluating that possibility.

Q. Well, let me show you a document.

May I approach, Your Honor?

JUDGE McGUIRE: Please.

BY MR. GATES:

Q. Can we call up RX-1287.

Now, Ms. Gross, you recognize the document labeled RX-1287 as a document that you authored?

A. Yes. Either I did or someone on my team did.

Q. And you wrote this in the latter half of 1998?

A. Yes.

Q. And the purpose of this particular document was to explore a possible investment in Lucky Goldstar that you actually referred to earlier. Is that right?

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A. That's correct.

Q. Now, if you look at page 4 of this document. Can you see the first bullet point, it says, "Rambus is the clear next generation memory." Was that your opinion at the time in 1998?

A. Yes, it was the opinion of our product development teams.

Q. And the reason that you had that opinion in 1998 was that Intel had told you that it was going to be producing chip sets for RDRAM? Was that right?

A. Yes.

Q. And is it important for Compaq -- was it important for Compaq to have technologies that were compatible with Intel chip sets?

A. Yes. A number of our high volume PCs, I am told by our marketing teams, the customers had a stated preference for Intel-based systems.

Q. And when you refer to customers that had a preference for Intel-based systems, are you referring to corporate customers or consumers or which type of customers?

A. Corporate customers.

Q. And what percentage -- well, strike that.

Wasn't it the case that in about 1998 about 90 percent of your PC applications were using Intel

2318

processors?

A. I think that's a fair number, I don't know the exact number, but I think that's fair.

Q. So, in Compaq's view, at the time at least, it was critical to align its technologies with Intel's?

A. Yes.

Q. And the reason why you were planning to transition to RDRAM was because of Intel's road map?

A. Yes.

Q. Now, I see here also on page 4, it says, the third bullet point, "Intel and major users have been trying to influence improved RDRAM output."

A. Yes.

Q. And by that statement, did you mean that Intel was trying to influence the DRAM manufacturers to improve their output of RDRAM?

A. Yes.

Q. And you refer to major users here, does that mean the other PC OEMs?

A. Yes. In late 1998, Compaq, myself, and Intel, went together to the DRAM manufacturers to try to influence increased output, and my understanding was that our competition took a similar approach.

Q. And by your competition, which companies are you referring to there?

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A. IBM, HP and Dell, although not all three of them, may have done that. I don't recall which.

Q. So, was it your understanding that the other PC OEMs, IBM, HP and Dell, were also trying to influence DRAM manufacturers to increase their productivity of RDRAM?

A. Yes.

Q. And you said you went on a trip with Intel to visit the DRAM manufacturers. Which manufacturers did you visit with Intel?

A. We visited Samsung, Hynix, NEC, Mitsubishi and Toshiba.

Q. On your own, without Intel, did you visit other DRAM manufacturers at this time?

A. I may have. I don't recall.

Q. Were the purpose of the visits with Intel to try to convince the DRAM manufacturers to align their road maps with the Intel road map?

A. That was one of the objectives, yes.

Q. And the objective from Compaq's point of view was to ensure that they -- the DRAM manufacturers -- produced enough RDRAM to meet Compaq's needs?

A. That was one of the objectives, yes.

Q. From Compaq's point of view, was it the case in 1998 that the more suppliers there were of RDRAM the

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better it was for Compaq?

A. Yes.

Q. And the reason for that is that you would have more availability of RDRAM?

A. That's correct.

Q. And you anticipated that there would be a ramp-up in the volume of RDRAM?

A. Yes.

Q. And based on your projected ramp-up in the volume, did you anticipate prices would come down for RDRAM?

A. Over the longer term, in the nearer term we expected a price increase.

Q. Do you see the fourth bullet point here in RX-1287 on page 4, it says, "Intel invested $500M in Micron last week to improve RDRAM output." Does that mean that Intel invested $500 million?

A. Yes.

Q. So, it was your understanding that Intel in 1998 invested $500 million in Micron in order for Micron to improve its RDRAM output?

A. Yes, based on published reports.

Q. And you considered that to be an unusual investment, didn't you?

A. Yes.

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Q. You had never seen Intel make a similar investment in a DRAM manufacturer before?

A. I don't know, but it wasn't a common occurrence. They may have had other investments.

JUDGE McGUIRE: All right, now let me interject. I'm not quite sure what that's intending to say that Intel invested that amount in Micron. What did you mean by that, for the record?

THE WITNESS: Well, Intel gave Micron $500 million with some agreement from Micron that they would use that toward the capital expenses of ramping up their RDRAM output and production; however, I was not privy to the actual particulars, just secondhand information from Micron.

JUDGE McGUIRE: Was that expected to be a loan or what information did you have after advancing or what expectations did Intel have, if you're able to answer that?

THE WITNESS: I can't speak for Intel, but the reason we mentioned in this presentation was we thought it was a uncommon occurrence and that it spoke to Intel trying to improve industry output of RDRAM.

JUDGE McGUIRE: And I understand that, you know, you can't talk for Intel, you're not Intel, but I'm just a little bit curious what the point of that was, but all

2322

right, Mr. Gates, you may proceed.

BY MR. GATES:

Q. Thank you, Your Honor.

The fact that Intel invested $500 million in Micron, is that significant to Compaq?

A. Yes, from our standpoint, that was an unusual occurrence that just spoke to the fact that there needed to be some extraordinary encouragement of the output being increased.

MR. HEIMERT: Your Honor, I would object to this testimony, first of all as to relevance, also as to being beyond the scope of direct examination.

JUDGE McGUIRE: Mr. Gates, how is it still in the scope?

MR. GATES: Well, Your Honor, if you recall on direct, Ms. Gross was asked for reasons why Compaq transitioned away from RDRAM, and so I'm just exploring now the reason why they got into it and related to the reason that they got away from it.

JUDGE McGUIRE: All right, overruled. I'll hear the question.

BY MR. GATES:

Q. Let's go to page 7 of this document, and Ms. Gross, isn't it the case, also, and you testified on direct that Compaq itself considered making an

2323

investment to one of the DRAM manufacturers with regard to its production of RDRAM?

A. Yes.

Q. And we see that proposal here on page 7 of RX-1287. Is that right?

A. Yes.

Q. Now, you were proposing to invest $100 million in LG, which is Lucky Goldstar. Is that right?

A. That's correct.

Q. And the purpose of that was to assist Lucky Goldstar in transitioning to RDRAM?

A. Yes.

Q. Now, at the time you were considering this loan, wasn't it the case that LG and Hyundai were considering a merger at the time?

A. Yes. That had been announced, yes.

Q. So, you never did make the loan to Lucky Goldstar?

A. No, we did not.

Q. But you did consider making similar loans to other DRAM manufacturers, right?

A. Yes.

Q. For example, Micron?

A. Yes. Although I'm not sure we were discussing it with Micron, but we did consider that.

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Q. And you also considered making a similar loan to NEC?

A. Potentially, sure.

Q. Ms. Gross, let me show you another document. This is RX-1302.

May I approach, Your Honor?

JUDGE McGUIRE: Yes.

BY MR. GATES:

Q. Ms. Gross, RX-1302 was a document that was created by your team at Compaq. Is that correct?

A. Yes.

Q. And this was a memory update in November of 1998?

A. Yes.

Q. If you look at page 8 of the document. This was Compaq's plan for the implementation of RDRAM? Is that right?

A. Yes.

Q. And the first bullet point says you were planning to implement RDRAM in your commercial desktops in May of '99?

A. Yes.

Q. Can you tell us what a commercial desktop is?

A. Commercial desktops are those desktops that were targeted toward business customers as opposed to

2325

individuals.

Q. And then the second bullet point refers to, "Consumer will introduce with high end in 2C99."

A. Right.

Q. Is that a reference to the introduction of RDRAM in consumer products in '99?

A. Yes.

Q. And what do you mean by consumer products there?

A. Consumer products are those generally targeted to the retail market or individual buyers.

Q. And then you talk about in the third bullet point, "Low end servers." And you were planning to implement RDRAM in low end servers?

A. Yes.

Q. Can you explain to us what you meant by a low end server?

A. Those were the servers that were less expensive and less complex in our product line.

Q. And then you referred to low end workstations, which you're also planning to introduce with RDRAM in '99. Is that right?

A. Yes.

Q. And the low end workstation is what?

A. Again, those workstations that were the lower priced and lower performance of the product line.

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Q. And finally, in the fifth bullet point, you refer to "all other product lines looking at implementation in 2000." Does that mean you were planning to introduce RDRAM in all of your other product lines in 2000?

A. Based on the consideration that it would become the standard, yes, it was considered that that was a possibility.

Q. So, Compaq at this time, November of 1998, was planning to use RDRAM in all of its products?

A. Yes, at that period, yes.

Q. Now, the last bullet point says, "Most aggressive, cross divisional memory technology shift ever planned at Compaq." What did you mean by that?

A. We meant that more volumes would be transitioning to a new technology at a more rapid rate than we had seen previously.

Q. Now, when you were making these plans, these implementation plans, did you at that time consider RDRAM to be what you described earlier as a revolutionary product?

A. Yes.

Q. So, you were planning to implement RDRAM throughout all of your product lines, even though it was a revolutionary product?

2327

A. Yes.

Q. If you look at the sixth page of this document. You see a chart here entitled Compaq Lock-In Supply.

A. Yes.

Q. Can you tell us what this chart was meant to depict?

A. What we were trying to portray was we were trying to portray to our product teams that amount of product that we believed had been committed to us based on discussions with these individual suppliers.

Q. So, if I understand you correctly, if you look, for example, at Hyundai, and it has under the column 1999 output, it has 30,000.

A. Yes.

Q. Is that the output of RDRAM that Hyundai had informed Compaq it was going to produce in 1999?

A. Yes.

Q. And what is the 30,000? Is that number of units?

A. I'm not quite sure whether it was the number of units or some sort of bid quote, and it's not noted here.

Q. And then in the total column, you see for Hyundai, there's 5,350.

A. Yes.

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Q. And is that the commitment that Hyundai made to Compaq?

A. Yes.

Q. And you see down, you also have a row for Micron, and in the 1999 output column, it says 15,000.

A. Um-hmm.

Q. So, is it your understanding in November of 1998 that Micron committed to produce 15,000 units of RDRAM?

A. That's what they were projecting to produce, the owner commitment was that which was made to Compaq.

Q. So, the column under total, it says 2,269 is the commitment they made to Compaq.

A. Yes.

Q. Did Micron ever meet that commitment?

A. No.

Q. When you were traveling around to the DRAM manufacturers, in 1998, did any of them tell you that they had been informed by Hyundai that Hyundai had given to Intel projections of production for RDRAM that were three times of the actual plan?

A. Not that I recall.

Q. None of them told you that?

A. Not that I recall.

Q. Did any of the DRAM vendors that you visited to encourage them to produce RDRAM tell you that Hyundai

2329

had encouraged them to make similar overprojections of RDRAM in order to limit the supply of RDRAM?

A. Not that I recall.

Q. Going back to the chart, you see Hyundai had a commitment of 5,350 units and they told you that they were going to produce 30,000 units in 1999. Did Hyundai ever meet those commitments?

A. No.

Q. Did they ever meet that projection of 30,000 units?

A. Not to my knowledge.

Q. In your experience with DRAM, is it typically the case that when a product first comes out its price is high but then will decrease over time?

A. Yes.

Q. And that transition period, is that called a ramp-up?

A. Yes.

Q. And you were on your trip to the DRAM vendors, you were encouraging them to ramp up the production of RDRAM?

A. Yes.

Q. And you anticipated if there was a ramp-up, that the price of RDRAM would come down?

A. In the long term, yes.

2330

Q. I'm going to show you a document that you haven't seen before, I believe, but there's a reference to Compaq, and I want to see whether or not it's consistent with your recollection.

May I approach, Your Honor?

JUDGE McGUIRE: Yes.

BY MR. GATES:

Q. Let's call up RX-1252. Ms. Gross, if you would turn -- well, first let me start, you haven't seen this document before, have you?

A. No, I don't believe so.

Q. And this is a document entitled Quarterly Report Strategic Memory Marketing, Fujitsu Microelectronics, Inc. Is this type of document something that Fujitsu had shared with Compaq in the past? Do you know?

A. Not that I recall.

Q. Well, let me just look at it.

JUDGE McGUIRE: Let's start over here, if we could, Mr. Gates. I want you to lay a proper foundation as to what this is again.

MR. HEIMERT: Your Honor, I wanted to confirm that this is not an in camera document. I don't know if respondent knows.

JUDGE McGUIRE: I am assuming it is not.

MR. GATES: No, it's not.

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MR. HEIMERT: Thank you.

MR. GATES: All right, Your Honor, let me refer her to page 7, there are some statements about Compaq, and I want to understand whether or not it's consistent with her recollection.

JUDGE McGUIRE: No, I understand that, but my point is, before we get to page 7, I want you to lay a foundation as to what this document is.

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

BY MR. GATES:

Q. Ms. Gross, when you were visiting DRAM vendors, they would share with you their strategies for marketing of memory. Is that right?

A. Yes.

Q. And was it the case that their strategies for marketing were documented?

A. I believe so.

Q. Well, sometimes they would share with you some of their documents that showed you what their strategy would be?

A. The portion of their strategy relative to their product plans, yes.

Q. And you visited Fujitsu before, right?

A. Yes.

Q. And they shared with you their product plans,

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right?

A. Yes.

Q. And was it the case that Fujitsu documented their strategies?

MR. HEIMERT: Objection, Your Honor, foundation.

JUDGE McGUIRE: Overruled. I'll -- I mean, that's what we're trying to establish here, so go ahead, Mr. Gates.

MR. GATES: Thank you, Your Honor.

THE WITNESS: I'm not sure what Fujitsu's processes were relative to their marketing strategies, how much they shared with us or whether they shared all of it, I don't know. You know, they shared what we asked them to share.

BY MR. GATES:

Q. Did they share with you documents that showed their memory marketing strategy?

A. Certainly a portion of it, I don't know if I saw all of their marketing strategy.

Q. So, you understood that you saw portions of documents that set out their memory marketing strategy?

A. Yes.

Q. And this document here, this strategic memory marketing for Fujitsu Microelectronics, was it your understanding of that type of document that portions of

2333

which were shared with Compaq?

A. I would imagine there's some information within that document that was shared with Compaq, but maybe not all of it.

Q. Let's look at the seventh page of this document. You see the first bullet point, if we can blow it up. I just want to quickly ask you whether you're aware of something.

MR. HEIMERT: Objection, Your Honor. Just having her look at the document calls for hearsay.

JUDGE McGUIRE: Mr. Gates?

MR. GATES: Your Honor, I haven't introduced any of the statements of the document.

JUDGE McGUIRE: Overruled. Go ahead.

BY MR. GATES:

Q. Now, if you just look at the first bullet point there, Ms. Gross, and read it to yourself, and I just want to ask you whether or not you at Compaq were aware that there were nine -- whether or not there were nine DRAM manufacturing companies that formed a group to promote DDR?

A. I'm not quite sure of the number of companies, but there was a group, Advanced Memory Technologies, or something near that, that was looking at alternatives to memory technologies.

2334

Q. Have you heard of a group called M9?

A. I have not heard of it from that -- that name.

Q. Further down in the document --

MR. HEIMERT: Objection, Your Honor. This is -- there's no foundation for her knowledge of the document. If she wants to testify to his questions, that may be -- may or may not be appropriate, but having her read off of this document that she has already testified that she has never seen is inappropriate.

JUDGE McGUIRE: Well, Mr. Gates?

MR. GATES: Well, Your Honor, what I'm going to now is a statement about what Compaq did, and I want to know whether or not that's something that Compaq in her understanding was something that Compaq did.

JUDGE McGUIRE: Well, is that understanding based on this document or are you talking about her independent understanding?

MR. GATES: I can ask her the question independent of the document.

JUDGE McGUIRE: So, that objection is sustained.

BY MR. GATES:

Q. Okay. You can take the document away. In 1998 when you were at Compaq, were there a group of manufacturers that approached Compaq to try to convince Compaq to go with DDR?

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A. I know that individually with manufacturers we did have that conversation, I don't recall whether we had a meeting with the group as this outside group was formed.

Q. You said that you were aware of a group that was promoting DDR.

A. Yes.

Q. And do you know whether or not some of the manufacturers that you met with in 1998 were part of that group that was promoting DDR?

A. Yes.

Q. Do you remember who they were?

A. I remember most specifically Micron, because I remember them explaining the concept of this group to us at one point.

Q. What did Micron explain to you the concept of that group was?

MR. HEIMERT: Objection, hearsay.

JUDGE McGUIRE: Sustained.

BY MR. GATES:

Q. Was it the case that in 1998 that Compaq was not amenable to hearing the message about DDR?

MR. HEIMERT: Objection, Your Honor, the question is vague.

THE WITNESS: We --

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JUDGE McGUIRE: Hold on a second. We have an objection on the floor. I'm going to sustain. I don't understand the question very well either.

BY MR. GATES:

Q. Was it the case, Your Honor, excuse me, Your Honor, was it the case, Ms. Gross, in 1998, that when these DRAM manufacturers met with Compaq to try to promote DDR, that you were not interested in hearing the message about DDR?

A. We had at times discouraged extensive DDR discussions because at the same time we were pressing for RDRAM ramping.

Q. So, in 1998, you were discouraging discussions about DDR because you were focused on RDRAM?

A. By late 1998, that's the case.

Q. When you were visiting the manufacturers of RDRAM in -- excuse me, when you were visiting the manufacturers of DRAM in late 1998, early 1999, did you get the sense that the DRAM manufacturers were reluctant to manufacture and produce RDRAM?

A. Yes.

Q. When you were visiting with them, in order to encourage them to produce RDRAM, did any of the vendors tell you that they had been encouraged by Hyundai to say no to Rambus?

2337

MR. HEIMERT: Objection, Your Honor, calls for hearsay.

JUDGE McGUIRE: Mr. Gates? Response?

MR. GATES: Your Honor, it goes to her state of mind as to why she was going to RDRAM and why they eventually transitioned away from RDRAM, it's not offered for the truth of the matter.

JUDGE McGUIRE: Overruled. Proceed.

THE WITNESS: No, I don't recall being told that.

BY MR. GATES:

Q. And at the time of the 1998-1999 time frame, as we saw before, you and the people at Compaq believed that RDRAM would become the next generation technology.

A. Yes.

Q. And by next generation technology, you meant that it was going to be the next volume industry standard?

A. Yes.

Q. And you understood RDRAM to be an industry standard?

A. Yes.

Q. It never did become the industry standard, the volume industry standard, did it?

A. No, it did not.

2338

Q. It's a niche technology?

A. Yes.

Q. So, for example, now, HP uses RDRAM in its alpha servers?

A. Yes.

Q. And those are your high performance products?

A. Yes.

Q. And you also use it only in some of your high performance workstations?

A. That's correct.

Q. Now, let me ask you, is it important for your high performance products that the memory technology used in those be reliable?

A. Yes.

Q. Now, isn't it the case of one of the reasons that RDRAM only became a niche technology was its price?

A. Yes.

Q. And as I think you explained earlier, in your understanding, price of DRAM is generally affected by supply and demand?

A. Yes.

Q. So, in your understanding, isn't it the case that the price of the DRAM products isn't necessarily tied to the manufacturing cost?

A. That's true.

2339

Q. And in your understanding, so long as there is a sufficient volume, then the price of the product will not necessarily be affected by the manufacturing cost?

A. Yes.

Q. So, from Compaq's point of view, wasn't it the case that because there wasn't sufficient volume of RDRAM, you did not believe that the prices of RDRAM were going to drop?

A. From the procurement standpoint, yes.

Q. And because you didn't believe the prices were going to drop, is that one of the main factors that led you to transition to DDR?

A. Yes.

Q. Now, do you know what the term "tape-out" means?

A. In a general sense.

Q. What do you understand that to mean?

A. When a die finishes a design, the design is rolled to a tape -- to drive I believe the development of images for a prefab process.

Q. So, when a product is taped out, it can be produced?

A. It's a step in production, yes.

Q. Do any of the DRAM manufacturers that you visited in 1998-1999 time frame tell you that in an April 1998 meeting they had discussed whether or not

2340

they should tape out but not fully productize RDRAM?

MR. HEIMERT: Objection, Your Honor, hearsay.

JUDGE McGUIRE: Mr. Gates, response?

MR. GATES: It goes to the same issue, Your Honor, it goes to her state of mind as to why she changed her mind --

JUDGE McGUIRE: Overruled, I'll hear it.

THE WITNESS: No, I was not told that.

MR. GATES: Well, let's go look at another document, it's RX-1209, and may I approach, Your Honor?

JUDGE McGUIRE: Yes.

BY MR. GATES:

Q. First, Ms. Gross, why don't you flip through this document for a second. You'll see it's a collection of slides and various documents, and do you understand that to be a copy of your file?

A. Yes.

Q. Now, if you look at page 27 of the document. And if you look on the bottom, there is a page 27 of 34, you can look at it on the screen.

JUDGE McGUIRE: Now, again, it's not clear to me exactly what this document is. You just said it was from her file, but you can lay a foundation so I can understand at some point what this document is.

BY MR. GATES:

2341

Q. Thank you, Your Honor, let me get into that. There was a collection of documents, so we need to look at an individual page.

Ms. Gross, do you recognize this slide?

A. Yes.

Q. Is this a slide that was created by your team?

A. Yes.

Q. And this was a slide that was created for the purpose of discussing your strategy with regard to RDRAM?

A. Yes.

Q. This was created in the 1998-1999 time period?

A. Yes.

Q. And the first bullet point says, "CPQ caught in game of chicken."

A. Yes.

Q. CPQ refers to Compaq?

A. Yes.

Q. And a game of chicken was that Compaq was staring down a threat?

A. Yes.

Q. Now, the first bullet point, the second bullet point, 1a, "Suppliers are right, RDRAM initially fails." Was it the case in the 1998-1999 time period that some of your suppliers were telling you that RDRAM would

2342

initially fail?

A. Yes.

Q. And that's what's reflected here in this document?

A. Yes.

Q. And if you look at the third bullet point, "Suppliers are right; RDRAM never happens." You were being told by some of your suppliers that RDRAM never happened at this point -- at this point in time, right?

A. Yes.

Q. And earlier you referred to the fact that there were high capital costs to manufacture RDRAM.

A. Yes.

Q. And you were told that there were high capital costs by the DRAM suppliers, right?

A. Yes.

Q. And you were told that those capital costs would inhibit the ramp of RDRAM. Is that right?

A. Yes.

Q. Because the suppliers wanted to recover those capital costs.

A. Yes.

Q. And they were telling you that because of those capital costs, the price of RDRAM would be higher?

A. Yes.

2343

MR. HEIMERT: Objection, Your Honor, this line of testimony is hearsay, and I would ask that it be stricken.

JUDGE McGUIRE: Sustained, Mr. Gates.

BY MR. GATES:

Q. Well, Ms. Gross, when you were making the decision as to whether or not to continue with using RDRAM in your products, was it important to consider what the DRAM manufacturers were telling you about the prospects of RDRAM becoming a developing product?

A. Yes.

Q. And why wasn't that important to you?

A. Because there were one of a number of experts within the industry, each DRAM manufacturer's perspective is important relative to the market outcome.

Q. And wasn't it the case that in this time period each of the DRAM manufacturers were telling you that they were reluctant to go with RDRAM?

MR. HEIMERT: Objection, it's still hearsay.

JUDGE McGUIRE: Go ahead.

MR. GATES: Your Honor, we're exploring the topic of what it was that affected Compaq's decisions, and --

JUDGE McGUIRE: Well, why don't you just ask her that.

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MR. GATES: Well, I was trying to establish a foundation for this.

JUDGE McGUIRE: You're on very thin ice here with the previous hearsay objection, and I'm apt to uphold it again. So, that's a hint to you that you need to go in some other avenue.

BY MR. GATES:

Q. I've got you, Your Honor, thank you.

Let me go to the last bullet point on the screen, it says, "Suppliers are sandbagging." What did you understand the term "sandbagging" to mean?

A. Inflating estimates, potentially. Inflating estimates.

Q. Inflating estimates?

A. Yes.

Q. And did you understand the term to mean inflating estimates in order to protect someone's position?

A. Yes.

Q. And why did you -- why was it put here in this presentation, "suppliers are sandbagging?"

A. One of the key discussions we had with development teams in doing the technology is to forecast the cost of that new technology. Often the suppliers when asked for a forecast would err to the high side

2345

because it's better for suppliers to be lower than to be surprised and have prices be above expectations.

Q. So, it was your understanding that this was put her in this presentation because there was a sense at Compaq that the DRAM suppliers were inflating the projected costs of RDRAM?

A. This particular page shows several different scenarios and that was one possibility, yes.

Q. Okay. Well, let's turn to page 16 of this document, if you would. I just want to ask you about one bullet point here. If you look at the fourth bullet point. Well, let me back up for a second. This is a separate slide in that collection of documents. Do you recognize this slide, Ms. Gross?

A. Yes.

Q. And was this created by your team at Compaq?

A. I believe so, yes.

Q. And the purpose of this slide was to discuss various issues regarding the RDRAM transition?

A. Yes.

Q. If you look at the first -- the fourth bullet point, "Supplier is trying to slow ramp (increased premiums) to recoup investments."

A. Um-hmm.

Q. Your understanding of that statement, that

2346

suppliers were trying to slow ramp, is that the suppliers of RDRAM were trying to reduce the output of RDRAM in order to keep the prices high?

MR. HEIMERT: Objection, Your Honor, to the foundation for that question.

JUDGE McGUIRE: No, that one is overruled, he's asking her about her own statement and she should be able to explain.

MR. HEIMERT: Thank you.

THE WITNESS: I'm just not completely clear of what my thinking was at the time, after talking with a number of suppliers, but certainly the suppliers were not prepared to rapidly ramp this technology.

BY MR. GATES:

Q. By rapidly ramp, they were not prepared to rapidly ramp, you mean that they were not prepared to increase their output of RDRAM?

A. They were not prepared to increase their output at the rate at which we needed to support our systems.

Q. Let me turn to a different topic. I want to take you back to 1996, 1997 time frame, and you testified on direct that about '97 was when you transitioned to SDRAM.

A. Yes.

Q. Do you remember about that time frame there was

2347

an alternative possible technology called burst EDO?

A. Yes.

Q. And Compaq never took burst EDO into production, right?

A. No, it did not.

Q. But you did look at the technology?

A. Yes.

Q. And you understood that to be an asynchronous technology?

A. Yes.

Q. SDRAM on the other hand is a synchronous technology, right?

A. Yes.

Q. Now, in the 1996-1997 time frame when you were looking at burst EDO and SDRAM, wasn't it the case that you and your people at Compaq believed that synchronous technology was going to be able to achieve higher speeds than asynchronous technology over time?

A. We believed that the synchronous technology provided higher benefits, it probably was because of speed, but I don't recall the benefits.

Q. Was it the view of Compaq at that time that asynchronous technology was limited in the bandwidth it could achieve?

A. Yes.

2348

Q. Now, you talked about on direct some of the various technologies that you used when you were at Compaq, and I just wanted to try to understand that. One of the first technologies you talked about was EDO, do you recall that?

A. Yes.

MR. HEIMERT: Objection, Your Honor. This goes -- EDO she just mentioned the name of. Beyond that it's beyond the scope of direct.

JUDGE McGUIRE: I will let you inquire in a very restricted fashion.

BY MR. GATES:

Q. Very brief, Your Honor. And I believe you testified that you started using EDO in about 1995. Is that correct?

A. I believe so.

Q. Now, the next technology that you transitioned to was SDRAM. Is that right?

A. Yes.

Q. And that occurred in what year, '97?

A. 1997.

Q. Now, the first SDRAM product that you used, that was PC66. Is that right?

A. Yes.

Q. And PC66, that was an Intel standard, right?

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A. Yes, it had to do with the speed of the SDRAM.

Q. And that was a standard promulgated by Intel?

A. That's my understanding, yes.

Q. So, PC66 SDRAM was '97, right?

A. Um-hmm.

Q. Now, Compaq used PC100 SDRAM, right?

A. Yes, we did.

Q. Let me before I get to PC100, you talked about backward capability in your direct. Do you remember that?

A. Yes.

Q. Was PC66 SDRAM backward compatible with EDO systems?

A. No, it was not.

Q. So, I couldn't take a PC66 SDRAM module and plug it into an EDO machine?

A. No.

Q. Could I plug an EDO module into a PC66 machine?

A. No.

Q. So, in order to transition into the PC66 SDRAM, you had to do a number of system level changes, right?

A. Yes.

Q. You had a different motherboard?

A. Yes.

Q. You had a different chip set?

2350

A. Yes.

Q. And the actual physical slot where the memory module goes in was different?

A. Yes.

Q. Now, the next technology you used was PC100, right?

A. Yes.

Q. PC100 SDRAM, right?

A. Yes.

Q. And that's an Intel standard, too, right?

MR. HEIMERT: Objection, Your Honor. It mischaracterizes any prior testimony.

JUDGE McGUIRE: Mr. Gates, response?

MR. GATES: I'm asking her whether or not it was an Intel standard, Your Honor, whether or not she knows it was.

JUDGE McGUIRE: Well, let me hear from complaint counsel how, in fact, that does mischaracterize the prior testimony.

MR. HEIMERT: Well, I assumed in his question that it is, and if he rephrased, it might not be objectionable.

JUDGE McGUIRE: In that case sustained.

BY MR. GATES:

Q. Ms. Gross, do you know whether or not PC100 was

2351

an Intel standard?

A. Yes, I believe it was.

Q. It was an Intel standard?

A. I believe so.

Q. And when did Compaq start using PC100 devices?

A. I'm not exactly sure of the date, I estimate 1998.

Q. And going back from the EDO to PC66 transition, how long after you started using the PC66 SDRAM were you using it for the majority of your computer products?

A. Probably about six months, because it was introduced on the desktop and rapidly transitioned, and the desktop is the highest volume, so it moved to the majority very quickly.

Q. When you transitioned to PC100 SDRAM, now PC100 SDRAM is not backward compatible with PC66, is it?

A. I really am not sure. I would think that some boxes you might be able to take a PC100 and put it in a PC66 slot. It would slow down, but it would work. But I'm not positive of that.

Q. There is a large document down in front of you, which is a copy of a transcript at your deposition.

A. Okay.

Q. I am going to ask you to turn to page 37 of that document. Now, remember, that was a transcript of your

2352

deposition in December 2002. Do you remember that deposition?

A. Yes.

Q. And you remember that you were under oath when you had this deposition taken?

A. Yes.

Q. And you were trying to testify as to the best of your ability when you testified during this deposition?

A. Yes.

Q. If you look at page 37, line 18, I'm going to read to page 38, line 3, let me just read that.

"In the different generations of SDRAM technology, PC66 and 100 and 133, were there system changes that had to be implemented when you started designing systems for PC100 versus PC66?

"Answer: Yes, the three different generations, if you would, of SDRAM are not completely compatible. PC100 and 66 were not backward compatible in that you couldn't plug one PC100 module into a PC66 system. Now, if PC100 and PC66 did function interchangeably in a system so that PC133 did have backward capability."

Do you see that testimony?

A. Yes.

MR. HEIMERT: Objection, it's not proper impeachment for him simply to read the deposition, is he

2353

going to ask a question as to --

JUDGE McGUIRE: Well, I assume that you are going to have a question and follow up on that.

BY MR. GATES:

Q. I Will, Your Honor, thank you.

Now, Ms. Gross, do you understand that PC100 was not backward compatible with PC66?

A. Yes, I believe so at the time, that was probably correct, I do not recall at this moment.

Q. Now, the next memory Compaq started to use was PC133?

A. Yes.

Q. And it's PC133 SDRAM?

A. Yes.

Q. Do you know whether or not that's an Intel standard?

A. I believe so.

Q. And you believe it was --

A. I believe it is an Intel standard.

Q. An Intel standard. And in what year did Compaq start to use PC133 devices?

A. I would guess 1999, but I really don't have an accurate recollection.

Q. Well, we'll put 1999 with a little question mark. Now, when you started using PC133 memory modules,

2354

did you have -- were you using different chip sets than you did for PC100?

A. Probably, I'm not absolutely sure.

Q. The next type of memory that Compaq used was DDR?

A. Yes.

Q. Well there was RDRAM in the middle?

A. Yes.

Q. And when you started using SDRAM, you didn't use RDRAM in all of your products, did you?

A. No.

Q. And you didn't even use it in the majority of your products?

A. No.

Q. Now, the next standard memory technology that you went to where you used it for the majority of your products was DDR?

A. Yes.

Q. And when you first started using DDR, that was 2001?

A. Yes.

Q. And which type of DDR were you using in 2001?

A. I believe we initially used DDR 266.

Q. 266? Now, was DDR 266 backward compatible with PC133 SDRAM?

2355

A. I don't think so. I'm not sure.

Q. You're not sure?

A. Yeah, I don't think so, it would require --

Q. When you used DDR 266 devices, you had to have a different motherboard layout than you did with the PC133 SDRAM products. Is that right?

MR. HEIMERT: Objection, Your Honor, for lack of foundation.

JUDGE McGUIRE: Sustained.

BY MR. GATES:

Q. Ms. Gross, when you started to use DDR 266 memory devices, do you know whether or not Compaq was using a different motherboard for those devices?

A. No, I'm not.

Q. Do you know whether or not you were using a different chip set?

A. No, I don't know for sure.

Q. But you do believe that it was not backward compatible?

MR. HEIMERT: Objection, lack of foundation.

JUDGE McGUIRE: Overruled. That was her prior answer.

BY MR. GATES:

Q. You can answer.

JUDGE McGUIRE: You can expand on that answer,

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Ms. Gross, if you can properly characterize it.

THE WITNESS: Would you repeat the question, please.

BY MR. GATES:

Q. When you started using DDR 266, you understood that it was not backward compatible with an SDRAM PC133?

A. I believe that's the case. It would downgrade the performance of the SDRAM.

Q. Now, did Compaq begin to use a different DDR product before it was merged with HP?

A. No, I don't think so.

Q. Do you know whether or not HP uses a DDR 333 product?

A. Yes, I believe we're using some in a small quantity.

Q. Do you know when it was that HP first started using DDR 333 products?

A. Fairly recently, I would probably say some time in the last six months or so, I don't think we -- it might be late 2002.

Q. Do you know whether or not HP plans to use the DDR 400 device?

A. We're trying to decide that right now. I think probably we will have some usage of that.

Q. Is it in the road maps right now?

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JUDGE McGUIRE: Okay, that's beyond the scope.

BY MR. GATES:

Q. Does this chart accurately depict the types of DRAM that Compaq and then HP after the merger has used over this period of time as depicted there?

A. Yes.

Q. So, I can label this Compaq DRAM -- Compaq/HP DRAM usage?

A. Yes.

MR. HEIMERT: Objection, Your Honor, I believe it mischaracterizes the testimony, I believe Ms. Gross testified that there was RDRAM also within that list.

JUDGE McGUIRE: So noted, sustained.

MR. GATES: And Your Honor, I will mark this exhibit I believe as DX-24.

JUDGE McGUIRE: 24. That reminds me, we did not mark the posters that complaint counsel used on Monday that showed the organizational chart of Rambus. So we might want to mark that now, at least go on the record, and then we'll mark this accordingly. At that time, there were, was it three posters as I remember?

MR. ROYALL: I believe that's right, subject to check.

JUDGE McGUIRE: Let's just mark those in the interim DX-24 through DX-26, and we'll mark this DX-27.

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MR. ROYALL: We'll confirm that it was three, and if not we'll let you know.

JUDGE McGUIRE: If there is a problem, come back on the record.

MR. ROYALL: Thank you.

(DX Exhibit Numbers 24 through 27 were marked for identification.)

MR. GATES: Ms. Gross, I don't have any other questions for you.

MR. HEIMERT: Your Honor, if we could have a few minutes to discuss our cross, or our redirect examination.

JUDGE McGUIRE: Yeah, let's go off the record.

JUDGE McGUIRE: On the record.

REDIRECT EXAMINATION

BY MR. HEIMERT:

Q. Thank you, Your Honor.

Ms. Gross, are you a lawyer?

A. No, sir.

Q. So, do you know what the outcome of the Rambus patent litigation will be?

A. No.

Q. I would like to refer to DX-27 if I might. You testified that you produced -- you used memory more or less in this order. Is that correct?

2359

A. That's correct.

Q. And did you use RDRAM memory at any point?

A. Yes.

Q. And where in this list should that RDRAM -- use of RDRAM memory appear?

A. Between PC133 SDRAM DDR 266.

Q. Now, when you transitioned between EDO and PC66 SDRAM, do you stop using EDO all together and use only PC66 in your new computer products?

A. No. We would be introducing new products with the new technology and continuing to produce other products with the technology we were previously using.

Q. And when you moved from PC66 to PC100 SDRAM, did you stop using PC66 in all of your computers and start using PC100 in all of your computers?

A. No, in fact some of our computers never ruled out all of the technologies.

Q. And is there a similar transition from each of the products on this list?

A. No, some desktops often go through each technology iteration, but longer lifetime products such as servers tend to skip technology transitions and adopt every other one, if you would.

Q. But when you moved to the next technology, say PC133, do you continue to use PC100 in some of your

2360

products?

A. That's correct.

Q. And when you moved to DDR 166, did you continue to use PC133 in some of your products?

A. Yes.

Q. And when you moved to DDR 333, do you continue to use DDR 266 in some of your products?

A. Yes.

Q. And during that period, how does the breakdown or mix of products using DDR of the next generation versus the previous generation change?

A. Well, we track and discuss what our suppliers, at least quarterly, what we call the mix of technology, and the way we look at that is we look at the total amount of memory we're purchasing and we look at the percentage of each technology that we're purchasing, and that is one thing that we use to share with our suppliers how we are transitioning technology by sharing quarter to quarter how those percentages might compare.

Q. And how long does that transition take from one to the next typically?

A. It varies quite a bit depending on market conditions and the decisions that the product groups are making.

Q. Is it six months, more than six months, less

2361

than six months?

A. In the desktop product environment, we tend to transition more rapidly than in the server environment where we have a number of different technologies offered at one time for the long period of time and the transition can take a period of years.

Q. All right, thank you. You said that PC100 was an Intel standard. Is that correct?

A. To my knowledge.

Q. Do you know if JEDEC was involved in establishing that standard?

A. I believe that JEDEC was involved in SDRAM standards, but frankly, I personally don't get involved in who establishes the standards as much as the fact that there is a standard, and I believe that JEDEC and Intel are the only two sources of DRAM standards historically.

Q. All right, let me turn to some of the documents that Mr. Gates showed you. I would like to have you turn to RX-1287, does the witness still have the exhibits?

MR. GATES: She should.

BY MR. HEIMERT:

Q. It's the first page of that document is titled 1999 RDRAM Investment Proposal.

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A. Okay. Yes.

Q. If you could turn to page 5 of that exhibit, please. There are three bullet points on that page.

A. Yes.

Q. Page 5 of 8. I would like to focus on the results of your trip. Do you recall why suppliers were reluctant to move to RDRAM?

A. Yes, some of those reasons are listed there.

Q. And what are those reasons?

A. They have not -- in this period, suppliers were not very profitable, so it was a challenge to generate more capacity investment. There were issues with the availability of test equipment and some packaging, some supply materials. In other words, some of the materials that the DRAM suppliers needed to obtain in order to provide packaging.

Q. What is the issue with testing?

MR. GATES: Your Honor, I believe this is going into hearsay testimony.

MR. HEIMERT: Your Honor, first of all he examined on this, second of all, he established foundation that this was a document prepared by her.

JUDGE McGUIRE: Is this the same document that we had gone into on his cross examination?

MR. HEIMERT: Yes, it is, Your Honor.

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JUDGE McGUIRE: Then overruled.

THE WITNESS: The issue with testing was that because RDRAM product was very fast technology, it would have required new and expensive testing equipment, and it had a long lead time to purchase as well.

BY MR. HEIMERT:

Q. You said the lead time is long, how long is the lead time?

A. I don't recall for a fact, but I estimate somewhere like nine months to a year, but --

Q. That is longer than it is for other types of memory products?

A. Well, these were testers, not memory products, but at the time, it was a long lead time relative to what was considered normal.

Q. Okay, thank you, I would like to move on to another document. If you could turn to it's RX-1302, another one that you looked at earlier. It just has memory update as the title of the document. If you could turn to page 9 of that document, please. On the first bullet point, you identify some concerns with RDRAM. What were those concerns?

A. RDRAM required new device packaging technology, and by that, we meant that we purchased -- we purchase memory modules, which are small boards with DRAM devices

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on them, and the packaging of the RDRAM device was what was known as a ball grid array, BGA package, and that was a new package relative to high volume production in the DRAM industry.

Q. And why did that -- if you could explain the cost involved with that problem to the adoption of RDRAM.

MR. GATES: Objection, Your Honor, it lacks foundation as to the cost for this packaging technology.

JUDGE McGUIRE: Sustained. You can restate, Mr. Heimert.

BY MR. HEIMERT:

Q. Did the packaging technology discussed in this document that you just testified about involve any costs?

A. Yes.

Q. And what were those costs?

MR. GATES: Objection, Your Honor, it lacks foundation, and calls for hearsay.

JUDGE McGUIRE: Sustained again.

BY MR. HEIMERT:

Q. Was it important to you about the cost of RDRAM?

A. Yes.

Q. And was it your understanding that RDRAM had certain costs associated with it?

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A. It was our impression that the cost to manufacture RDRAM were higher than the costs to manufacture the alternative technologies.

Q. Thank you. I would like to turn to one final document, which is the -- I guess it's the collection of documents, it's rather long, it's RX-1209. If you could turn to page 27 of 34. Is that a page you looked at earlier on cross examination?

A. Yes.

Q. And what is the title of that slide?

A. Scenarios.

Q. And then below there's 1a, 1b, 2, 3 and 4. What do those represent?

A. Those are our opinions of the outcomes as of the current situation as we saw it.

Q. So, did Compaq know at the time which of those outcomes would actually take place?

A. No.

Q. Now, on point 1a, you refer to a painful transition with RDRAM. What do you mean by painful transition?

A. That we expected pricing and availability challenges.

Q. When you say challenges, what do you mean by challenges?

2366

A. Potentially unforecasted high prices and shortages in materials.

Q. Excuse me, if I may have a moment, Your Honor.

If you could turn to one more page of that document, it's page 17 of 34. Are you familiar with this slide?

A. Yes.

Q. And did you prepare it?

A. I or someone on my team prepared it.

Q. If I could direct you to the third bullet point, you state in the document, or the document states that RDRAM availability is at risk for 1999. Was that your understanding of the time about RDRAM availability?

A. Yes.

Q. And why did you have that understanding?

A. Because the information we had relative to available supply was less than the quantity that was expected to be demanded by the users.

Q. Were there any other risks involved with RDRAM in 1999?

A. There were other risks, not listed here, but when availability is at risk, higher pricing was also a risk.

MR. HEIMERT: I have no further questions, Your Honor.

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JUDGE McGUIRE: Mr. Gates, recross?

MR. GATES: Just a couple of questions, Your Honor.

RECROSS EXAMINATION

BY MR. GATES:

Q. Ms. Gross, if you could turn back to RX-1287, and look back at the page that you were directed to, which is page 508. And if you look at the third bullet point, you were asked about the results of your trip to Asia.

A. Yes.

Q. And you were asked about some of the reasons why suppliers were reluctant to transition to RDRAM, and all of these bases were things that the DRAM suppliers were telling you. Is that right?

A. Yes.

Q. Did you do any kind of audit to find out whether or not what they were telling you was, in fact, the case?

A. No.

Q. Now, if you look at RX-1302, which was the document entitled Memory Update, November 1998, and go to page 9 of 10, the issues and concerns slide that you were just asked about, and you understood, I think you testified, that there were some cost concerns about

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RDRAM.

A. Yes.

Q. And the information about the cost concerns that you had you got from the DRAM suppliers. Is that right?

A. The DRAM suppliers and Intel.

Q. And Intel. And did Compaq do any kind of audit of the DRAM suppliers to verify the costs that they were projecting?

A. No.

Q. If you look at RX-1209, and page 27 of 34. You explained that painful transition that's referenced there under 1a had to do with high prices and potential shortages. Is that right?

A. Yes.

Q. And that was because you understood from the DRAM manufacturers that they weren't going to meet the supply forecasts that Compaq had for its needs?

MR. HEIMERT: Objection, it mischaracterizes her prior testimony.

JUDGE McGUIRE: Any response?

MR. GATES: I don't think it does, Your Honor, but let me rephrase.

JUDGE McGUIRE: Rephrase.

BY MR. GATES:

Q. When you said that the painful transition was of

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the potential high prices and shortages, was that based on your perception that there was going to be lower supply than Compaq had projected for its needs?

A. Yes.

Q. And that was based on, again, on what the DRAM manufacturers were telling you?

A. Yes.

MR. GATES: I don't have any further questions, Your Honor.

JUDGE McGUIRE: Okay, is that it?

MR. HEIMERT: We have no further questions, Your Honor.

MR. GATES: Your Honor, I would like to move in the exhibits.

JUDGE McGUIRE: Okay, let's just wait just a moment, then. Ms. Gross, you are excused.

THE WITNESS: Thank you.

JUDGE McGUIRE: Thank you for your testimony today.

All right, Mr. Gates?

MR. GATES: Your Honor, one point as to the limitations on the exam, we would reserve the right to call Ms. Gross back in our case if need be.

JUDGE McGUIRE: All right, so noted. Any comment on that, Mr. Heimert?

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MR. HEIMERT: No, Your Honor.

JUDGE McGUIRE: All right, noted for the record. All right, thank you, Ms. Gross.

MR. GATES: Thank you, Ms. Gross.

Your Honor, I would like to move in RX-1287, which is --

JUDGE McGUIRE: Any objection?

MR. HEIMERT: No, Your Honor.

JUDGE McGUIRE: So entered.

(RX Exhibit Number 1287 was admitted into evidence.)

MR. GATES: I would like to move in RX-1302, Your Honor.

MR. HEIMERT: No objection.

JUDGE McGUIRE: So entered.

(RX Exhibit Number 1302 was admitted into evidence.)

MR. GATES: I would like to move in RX-1209, Your Honor.

MR. HEIMERT: No objection.

JUDGE McGUIRE: Entered.

(RX Exhibit Number 1209 was admitted into evidence.)

MR. GATES: And subject to a stipulation that's been worked out by the parties, I believe that I would

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like to move in RX-1252. This is on the list.

MR. ROYALL: It's on the list? No objection.

JUDGE McGUIRE: All right, entered.

(RX Exhibit Number 1252 was admitted into evidence.)

JUDGE McGUIRE: And on that topic, I know I received a copy of that agreement by Mr. Perry, and you said that it hadn't been executed yet. Was that correct? It appeared to be signed.

MR. PERRY: Only by you.

JUDGE McGUIRE: Only by you.

MR. PERRY: It's been filed and served on everybody.

JUDGE McGUIRE: I may issue an order apart from that. I don't want to ascribe my name necessarily to an agreement the parties have had, but I will issue an order as I did the other day for in camera treatment, which will uphold the agreement, I just don't need to sign the same agreement that you all have prepared, but I will issue that order and I will try to do that in the next 24 hours.

MR. STONE: Your Honor, if you feel you need extra copies of those three exhibits, which you probably don't, but if in drafting the order you felt you needed, we could give you those or you now have them

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electronically as well.

JUDGE McGUIRE: Which three exhibits?

MR. STONE: There's three exhibits to the stipulation. If you needed the list for your order, we could get those to you for your order. You don't want to retype them I think.

JUDGE McGUIRE: Thank you very much. It's 12:15, you want to come back at 1:30? All right, we'll reconvene. This hearing is in recess.

(Whereupon, at 12:20 p.m., a lunch recess was taken.)

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AFTERNOON SESSION

(1:35 p.m.).

JUDGE McGUIRE: This hearing is now in order. At this time complaint counsel may call its next witness.

MR. OLIVER: Good afternoon, Your Honor. Complaint counsel calls Mr. Gordon Kelley.

JUDGE McGUIRE: And Mr. Kelley, would you please approach the bench and the court reporter will swear you in.

Whereupon--

GORDON KELLEY

a witness, called for examination, having been first duly sworn, was examined and testified as follows:

JUDGE McGUIRE: If you'll have a seat right there, Mr. Kelley. Go ahead, Mr. Oliver.

DIRECT EXAMINATION

BY MR. OLIVER:

Q. Good afternoon, Mr. Kelley.

A. Good afternoon, Mr. Oliver.

Q. Could you please state your full name for the record.

A. Gordon Arthur Kelley, Jr.

Q. Mr. Kelley, are you currently employed?

A. Yes, I work for IBM.

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Q. What is your position with IBM?

A. I am a senior engineer.

Q. Could you please describe what your responsibilities are at IBM.

A. I am in the package development engineering area, I am an electrical engineer that's doing computer simulation of our packages.

Q. Now, could you explain in a bit more detail what your current job responsibilities involve.

A. My current job responsibilities involve the analysis of package designs to generate package parasitics so that we can understand the performance characteristics of our packages and be able to improve them where they need to be improved.

Q. Could you please explain briefly your educational background.

A. I have a bachelor's degree in electronic engineering from Devrie Institute of Technology in Chicago, Illinois and a bachelor's degree in physics from ãAlbright College in Reading, Pennsylvania, and I attended graduate study under the Bell Laboratories graduate study program which was connected to Princeton University and Lehigh University.

Q. And forgive me, Mr. Kelley, but could you give me an approximate time of when you entered the work

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force?

A. I entered the work force in 199 -- excuse me, 1962.

Q. Could you give us a brief overview of your work experience?

A. After I graduated from college in '62, I was employed with Bell Telephone Laboratories at their facility in Reading, Pennsylvania. They did semiconductor design of components for the telephone and their own computer systems. I worked there for 15 years until 1977 when I accepted a job offer from IBM in Burlington, Vermont.

After joining IBM in Burlington, I worked on some quality assurance issues for manufactured parts, and in that assignment, I was asked to move to IBM's facility in Manassas, Virginia, and I worked at IBM in the Manassas facility for a year and a half when I was moved back to Burlington.

In 1983, I was moved to the laboratory doing memory design in Burlington.

Q. And then after 1983, could you continue to give a brief overview of your work experience.

A. Starting in 1983, I was working with the other IBM locations that were memory users and my primary responsibility then was to understand what our memory

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integrated circuit component was and to take that knowledge to the user to help the user appropriately apply that knowledge in the use of our parts. And then also I think almost as important, I was to bring back information from the users that told our designers at IBM in Burlington, Vermont what was important for the future. So, what could we do to help them down the road.

I have -- I worked on that job of being a memory applications engineer, working with device designers in Burlington on memory and device users around the IBM Corporation on memory, until 1998 when I moved to the package engineering area.

Q. I just do want to be clear on that last point, because we will be focusing in particular on the time period in the early to mid-1990s, so the job description that you have just given us, that was held from you say 1983 until which year?

A. 1998.

Q. So, in other words, that was your job description during the early and mid-1990s as well?

A. That's correct.

Q. Now, in your previous answer, you referred to "our users." Could you please explain what you mean by that.

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A. That definition changed for IBM in the early '90s. From 1983, our users were all IBM locations, and they are numerous. We have users that are building IBM mainframes in Poughkeepsie, New York, we have users that are building the middle sized computer systems in Rochester, Minnesota. We have users that are building IBM workstations, which are high-end PCs, in Austin, Texas. We have users that were building IBM PCs in Boca Raton, Florida. That facility was moved in the mid-'90s, around 1995, I think, to Raleigh, North Carolina. And then we had users in the smaller ends of our business in San Jose, California, there were use of DRAMs in DASD buffers, which is the big magnetic boxes that fill these computer rooms to store memory. We had printers being made in Lexington, Kentucky, and Attica, New York, and Austin, Texas, and so far I've only spoken about the ones in this country. There's almost as many in the rest of the world.

Q. You've spoken about quite a number of different locations and quite a number of different products, just to try to help consolidate the answers for the record, could you give a brief overview of IBM products that use memory, and for this answer, I want to focus particularly on DRAMs, please.

A. And you want just IBM products?

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Q. Yes, please.

A. The most numerous component in the IBM main frame is the DRAM. The IBM main frame can contain two to 5,000 DRAMs in order to do its various memory functions. And then the middle range computers in Rochester, Minnesota, were almost as large. They would contain probably a thousand or so DRAMs. And then the high-end IBM PCs coming out of Austin, Texas would contain 100 or so DRAMs, and then the PCs that we're all familiar with normally contain something between 20 and 60 DRAMs. And then the various printers that we're all familiar with, sometimes have DRAMs in them, sometimes have SRAMs, but there would only be one or two. And so far I have only talked about the IBM, there's another group of customers later.

Q. What group of customers would that be?

A. In about 1987 -- well, no, it was before that. It was about 1985, Burlington got the wake-up call that our PC division which was using mostly vendor-made DRAMs was the bulk of the IBM use of DRAMs, and by the way, DRAM, the IBM Corporation is the largest DRAM user in the world, during this period, and today.

IBM Boca was using about twice as much DRAMs as all the rest of our corporation put together, and because IBM Burlington and the other two sister plants

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that we have in Japan and Germany could not make enough DRAM for the IBM PCs, the IBM PCs had no choice but to buy their memory on the outside.

And what that meant for us was that we had to become like the memory on the outside, which we had not had to do before. To become like the memory on the outside, we recognized that we had to join a standards group called JEDEC, which was defining what the memory on the outside means.

So, the memory on the outside is from companies like Hitachi and Toshiba and Samsung and Hyundai and Mitsubishi. In those days Motorola and Texas Instruments and so forth. When we started becoming more like the memory on the outside, and could then begin to supply our IBM PC division in Boca Raton, Florida, something else happened, which I think probably we were surprised by. And that is that that opened up a whole new set of customers for us. So, if it fit into the IBM PC, then it also fit into the Compaq PC and it fit into the Dell PC and any other company's PC. And by the way, it also fit into the competitor's -- in the mid-range and the high end.

So, suddenly we were open to business in companies that we had never participated with before.

Q. Mr. Kelley, you have covered a lot of ground

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there, and let me see if I can ask a few follow-up questions to help clarify certain points that you have just covered. Perhaps to start with a basic point, does IBM currently manufacture DRAMs?

A. In I think around the year 2000, so it's quite recent, we decided that there wasn't enough profit in the production of DRAMs, and so we sold our manufacturing of DRAMs to a time release company, and they are now making our DRAMs with our design, but in their production facilities, and we have gone off to make other integrated circuits, semiconductor parts.

JUDGE McGUIRE: So, the answer to that question is no, is that correct?

THE WITNESS: I'm sorry.

JUDGE McGUIRE: Just try to keep in mind the import of the question so we can understand where we're headed.

THE WITNESS: Yes.

BY MR. OLIVER:

Q. Thank you, Your Honor.

Up until the year 2000, did IBM manufacture DRAMs?

A. Yes.

Q. And you mentioned certain locations. Could you identify the locations where before 2000 IBM

2381

manufactured DRAMs?

A. Yes, in Japan, it's Yasu, and in Germany, it was Scindelfingen, and in France, it was Essonnes.

Q. Mr. Kelley, do you have an understanding of the term "proprietary DRAM?"

A. Yes, I do.

Q. At some point in time, did IBM manufacture proprietary DRAM?

A. Yes.

Q. When was that?

A. We manufactured proprietary DRAM from the beginning of our DRAM production, which would have been in 1977 until the early '90s.

Q. What happened in the early '90s?

A. In the early '90s, we recognized a need to be like the rest of the DRAM producers.

Q. Beginning in the early '90s, what type of DRAM did IBM manufacture at that time?

A. Beginning in the early '90s, we produced JEDEC standard parts.

Q. Focusing on particularly on the Burlington mid-1990s, when IBM was manufacturing JEDEC standard DRAM, did IBM also purchase DRAM from outside of IBM?

A. I don't know the exact numbers, but I understand that we were purchasing about half of our total DRAM

2382

use.

Q. So, in other words, would it be fair to say that IBM was getting approximately half of its DRAM usage internally within IBM and purchasing about half from outside IBM?

A. Yes, that's what I understood.

Q. Mr. Kelley, focusing again on the early to mid-1990s, at that time, were you a member or a participant in any standard-setting organizations?

A. In the very early '90s, I was a member of the JEDEC committee standardizing memory components called JC-42, and then a couple of years later, I also got on the JEDEC Council, which is the executive board of JEDEC.

Q. How did you first learn about JEDEC?

A. I was in my office and my manager came and said, "Would you like to attend JEDEC for me."

Q. Who was your manager?

A. Tony Wutka.

Q. And when did that happen?

A. In December of 1983.

Q. Do you have an understanding of why your manager wanted you to attend JEDEC?

A. He told me that an IBM executive had been the prior member and did not have time to attend any longer.

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Q. Thereafter, did you, in fact, attend JEDEC meetings?

A. From my first meeting at the beginning of 1984 until 1998, between the committee and the council, I believe I missed two meetings.

Q. So, all but two meetings during a 14-year period, 1984 to 1998?

A. Yes.

Q. Which JEDEC committee did you participate in?

A. I was most active on JC-42, I was also quite active on JC-16, and I was a member of council. I attended a few other meetings as the head of the council.

Q. Did you attend any meetings as IBM's official JEDEC representative?

A. I was IBM's official representative at JC-42, JC-16, and JEDEC Council.

Q. Were you the sole IBM representative at JC-42 meetings?

A. I was the sole attender from 1984 to 1987 when Howard Kalter began to attend with me.

Q. At some point in time did IBM begin to send additional individuals to JC-42 meetings?

A. Yes. In 1989, Mark Kellogg joined me as a second alternate, and in I believe it was 1990, I had

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several IBMers from several different locations joint me as guests.

Q. Those individuals who joined you as guests, did they attend on a one-time basis or did they attend more frequently?

A. Most of them attended quite frequently. They weren't quite as in attendance as the member and alternates.

Q. Do you have an understanding of why IBM sent additional representatives to the JC-42 committee beginning in the 1990s?

A. What I saw in the IBM locations, both as a producer and a user of DRAM, was the need to help JEDEC define what a standard DRAM was so that our systems could use those standard DRAMs and that we did not have to design proprietary DRAMs.

Q. I think you actually partially anticipated my next question. Did IBM attend JC-42 committee meetings as a memory manufacturer or a memory user or in some other capacity?

A. I would have considered myself as a manufacturer, Howard Kalter as a manufacturer, Mark Kellogg as a user, and the others who attended were all users.

Q. So, in other words, IBM as a corporation

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attended in both manufacturer and user capacity?

A. Yes.

Q. Are you still active in JEDEC today?

A. I am not.

Q. When did you cease your involvement in JEDEC?

A. August and September of 1998.

Q. Apart from your role as IBM's designated representative, did you hold any other positions within JEDEC?

A. No.

Q. At one point did you hold a chairman position within the 42 committee?

A. Yes, I was appointed chairman of the DRAM task group on the JC-42.3 committee in 1987. That position became an elected office, I believe it was 1994, and I was elected several years in a row until I resigned in 1998.

Q. And what did your duties as chairman of that group involve?

A. I would set the agenda, I would open the meeting, I would control the agenda and make sure that everyone who had an opportunity to speak could, and that the meeting was run by JEDEC's manual of operation and procedures.

Q. Did that involve any responsibilities outside of

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the actual meeting time?

A. Yes, it did, quite a lot of responsibilities outside of the meeting time.

Q. Could you please describe some of those responsibilities outside of the meeting time.

A. As a member, I would have to prepare proposals for IBM, then as the chairman, I would have to prepare the agenda, I would have to follow up on items that had come up at the previous meeting, and needed to be reported for status at the following meeting. And I would have to approve the minutes when I became the committee chairman.

Q. Now, at some point in time, were you also a member of the JEDEC Council?

A. Yes, in 1993, I was elected as a member of council.

Q. What were your responsibilities as a member of the JEDEC Council?

A. As a member of the council, I was overseeing the work of the 15 to 20 JEDEC committees, and our primary responsibility was to make sure that the procedures were being followed on all of these various committees, and that any issues that were raised either by members of the committees or by the chairpersons of the committees, and was brought to council, was worked upon and

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resolved.

Q. During the mid-1990s, during the time that you were involved both in JC-42 and on the council, approximately how much of your average work week was devoted to JEDEC activities?

A. I had also become chairman of an international committee, the IEC, and between those three organizations, I was working full-time for standards committees.

Q. Do you have any way to estimate how much of that time was related to JEDEC as opposed to the other organization?

A. Ninety percent JEDEC, 10 percent IEC.

Q. Did you have any understanding at that time of why IBM was going to have you devote so much of your time to JEDEC-related activities?

A. I believe that it had become important to the IBM Corporation, as witnessed by the number of attenders, and the fact that they supported all of this travel for me to attend these meetings.

Q. Again, focusing on the time period the early to mid-1990s as to why this was important to IBM?

A. The DRAM is the largest single semiconductor used in the corporation, and the DRAM is probably the one that we spent more money on than any other. One of

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the realities of the DRAM, because of its proliferation, is that it must be low cost. To be low cost, it must be available for many suppliers, and it must be interchangeable from those suppliers, which means I can plug a component out from one supplier and plug the component in from another and they work equally well. That kind of created interchangeability per that standards committee, JEDEC.

Q. Let's discuss, if we could, the activities of the JC-42 committee. Between the time that you first joined JEDEC and the time that you left JEDEC, did the role of the JC-42 committee change in any way?

A. When I joined JEDEC in 1984, until the late '80s, we were primarily -- as a memory standards group, we were primarily only defining a pin package type and naming the pins on that pin package. Beginning in 1990, it became very clear that that was not adequate for the future. In fact, I would say that began in the late '80s. It was not adequate for the future.

The reason was because the microprocessors in the industry were demanding more performance out of the memory, and performance was going to drive the future DRAMs, and in order to assure we had interchangeability from multiple suppliers, we had to begin to define much more technical aspects of the integrated circuit.

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If we did not do that, they would not be interchangeable, so they might look alike, but they wouldn't work alike.

MR. OLIVER: Your Honor, may I approach?

JUDGE McGUIRE: Yes.

MR. OLIVER: Your Honor, I have extra copies, but we will have this on the screen.

JUDGE McGUIRE: That's all right.

BY MR. OLIVER:

Q. Mr. Kelley, I have handed you a document that's been marked as CX-35. Do you recognize this document?

A. Yes, I do.

Q. What is this document?

A. This is the JEDEC Council minutes from a meeting that we held in May of 1992.

Q. Were you present at this meeting?

A. Yes, I was.

Q. If I could ask you to turn to pages 14 and 15 of CX-35, please.

A. (Witness complied.)

Q. You'll see that pages 14 and 15 are a letter on IBM letterhead, page 5 has your name.

A. Yes.

Q. Do you recognize the letter before you on 14 and 15?

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A. Yes, I do.

Q. And what is this letter?

A. This is a letter that I wrote to Jack Kinn who was the EIA staff vice president as the head of JEDEC, and in this letter, I was telling Jack that the level of technical issues that we were dealing with on my DRAM pass-through was much greater than we had handled historically. And I wanted him to make sure that he agreed with that change in our business, because one of the things that that implied is as we get into greater technical depth in the business activities of the group, we're quite apt to run into invention from the various member companies, and I was concerned that this was okay, that he wanted us to get into greater technical detail.

In the second paragraph, I go into an area which really stretches the concept that I just described, because in the second paragraph, I'm suggesting that whereas lots of companies were joining together to do joint designs because of the cost of doing a design, and the fact that parts have to be interchangeable. I was suggesting to Jack that instead of having these companies do these designs jointly, in small groups, that he might want to consider JEDEC taking a giant leap and doing the design at JEDEC. And that was pretty much

2391

of a stretch for the organization and what they were planning, but I wanted to lay the concept on the table.

Q. Just to be certain that the record is clear, who was Jack Kinn, please?

A. He was EIA staff vice president who was the head of JEDEC.

Q. Is that the same position currently held by Dr. John Kelley?

A. Yes, it is.

Q. If I could refer to the second full paragraph of the letter, page 14 on CX-35, it begins, "The work in question on synchronous DRAMs and already completed for video RAMs is already pushing our JC-42 scope."

Do you see that?

A. Yes, I do.

Q. And then you have a description that I believe is the description of the JC-42 scope. And then you pick up with a couple of examples. Do you see that?

A. Yes, I do.

Q. "For example, We will be balloting latency clock cycles for access." Do you see that?

A. Yes, I do.

Q. By the way, is that the same as cast latency?

A. Yes, it is.

Q. And if I could direct your attention to a couple

2392

of lines further down, it reads, "If we do not do this, then we cannot create common parts that are plug compatible at 100 megahertz operation and above. I believe we have begun the process of standardizing the device data sheets as JEDEC standard. So, in addition to the design framework, we now are filling in the details with timing diagrams that will impact, in a greater way, the chip design." And then you ask if he will support the new level of JEDEC involvement in worldwide DRAM designs.

Do you see that?

A. Yes, I do.

Q. And did Mr. Kinn, in fact, support the activities that you were describing in that paragraph?

A. When Jack and I met at the next council meeting, he took me aside and had verbal conversation with me, and in the conversation, excuse me, in the conversation, he said that he strongly encouraged our inclusion of more technical content in our discussions, but at the end of the letter, I suggested something about having JEDEC do a common design, and he could not support that.

Q. Apart from what you're suggesting at the end of the letter, I was focusing on this particular paragraph here, and the question was whether Mr. Kinn supported the activities that you were outlining in this

2393

paragraph, that is the last paragraph on page 14 of CX-35.

A. Yes, he did support this paragraph.

Q. Mr. Kelley, are you familiar with the term "open standards?"

A. Yes, I am.

Q. And again, focusing on the time period between 1991 and 1996, at that time period, were you also familiar with the concept of open standards?

A. Yes.

Q. Now, in that time period from 1991 to 1996, what was your understanding of the term "open standards?"

A. I believe that open standards were standards that avoided patents or items that would become patents. I also believe that the consideration of our standards needed to consider any patented material or material that would become patents, and in that consideration, require a statement on companies that held intellectual property and get from them a statement from their company on whether they would license all users and that they would agree to reasonable fees for the license and royalties.

Q. I would like to focus for a moment on the first part of your answer, you tied the concept of open standards to avoiding patents, if I understood your

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answer correctly. What, if any, is the relationship between open standards and avoiding patents?

A. In order to create a standard that is open, we need to know the patented material that is public information, but is held by companies in the world, and in order to know what patented material there is, then we have a obligation as a committee to disclose any patented material that we were aware of. Patented material from our own company and for others.

MR. PERRY: Your Honor, the witness has a habit of going far beyond the question and it's hard for me to object while he's in motion.

JUDGE McGUIRE: That is sustained. I'm going to ask you, again, Mr. Kelley, just try to address the question, your counsel is very capable, he can follow up. It's getting a little somewhat tedious, and I don't mean that to you, sir, as a slur at all, it's just that it's very important that we just, you know, speak to the issues in this proceeding, based on your counsel's inquiry. So, try not to go beyond the import of his question, if you don't mind.

THE WITNESS: Yes, sir.

JUDGE McGUIRE: All right, Mr. Oliver.

BY MR. OLIVER:

Q. Thank you, Your Honor.

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Mr. Kelley, when I asked you about your understanding of the term "open standards" between 1991 and 1996, you made reference to avoiding patents, and I'm still trying to understand the relationship in your mind during the time period of 1991 to 1996 between avoiding patents and open standards.

MR. PERRY: Object to the form, there's no question there.

JUDGE McGUIRE: Sustained. Restate, Mr. Oliver.

BY MR. OLIVER:

Q. Thank you, Your Honor.

Mr. Kelley, again looking at the time period from 1991 to 1996, what, if any, was your understanding of the relationship between the concept of open standards and the need to avoid patents?

A. I believe that open standards require the need to disclose patents.

Q. Why did open standards require disclosure of patents?

A. So that we could avoid them if possible.

Q. Why was it important to avoid patents if possible?

A. In the case of the DRAM, there was so little profit that we could not afford even the smallest increase due to fees and royalties.

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Q. Focusing again on the time period between 1991 to 1996, what was your understanding, if any, with respect to JEDEC's position concerning open standards?

A. JEDEC had a policy on patents and in that policy the first requirement was to avoid patents.

(Discussion off the record.)

JUDGE McGUIRE: Go ahead, Mr. Oliver, we're on the record.

MR. OLIVER: May I approach, Your Honor?

JUDGE McGUIRE: Yes.

BY MR. OLIVER:

Q. Mr. Kelley, you have been handed a document that has been marked as CX-204 entitled Legal Guides. Mr. Kelley, do you recognize this document?

A. Yes, I do.

Q. What is this document?

A. This is the Legal Guides document of the Electronic Industries Association.

Q. What, if any, is the relevance of CX-204 to JEDEC?

A. JEDEC is a subsidiary organization of the EIA. So, I believe that we were bound by these rules.

Q. If I could ask you to turn to page 5, please. And let me clarify, that would be page 5 of CX-204. It would appear as internal numbers page 6. The section C,

2397

Basic Rules for Conducting Programs. Do you see that?

A. Yes, I do.

Q. I would like to direct your attention to the beginning of that, it reads, "All EIA standardization programs shall be conducted in accordance with the following basic rules: 1, they shall be carried on in good faith under policies and procedures which will assure fairness and unrestricted participation."

Do you see that?

A. Yes, I do.

Q. Again focusing on the time period of 1991 to 1996, did you have an understanding of the term "good faith" as used in this portion of the EIA Legal Guides?

A. Yes, I did, and my mind translated that to fair treatment for all members.

Q. Could you please explain what you mean by "fair treatment for all members?"

A. That we would treat each other equally.

Q. If I could direct your attention down to paragraph number 5 appearing under the heading, this is still within the sentence at the top of the page, reading, "All EIA standardization programs shall be conducted in accordance with the following basic rules."

Do you see that?

A. Yes, I do.

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Q. And then number 5 underneath that says, "They shall not be proposed for or indirectly result in " -- and then I'll pick up the second line, "Restricting competition, giving competitive advantage to any manufacturer, excluding competitors from the market."

Do you see that?

A. Yes, I do.

Q. Again focusing on the time period of 1991 to 1996, did you have an understanding of what was meant in this paragraph 5 on page 005 of CX-204?

A. Yes, I believe that part of making sure that the organization wasn't restricting competition went to the requirement that all persons in the participation of the standard would disclose patent material so that they could not block a proposal.

Q. Could you describe what you mean by a person blocking a proposal.

A. Well, I had an experience once where we had a standard that was created and a patent had not been disclosed, and then later the patent was asserted against several companies in the industry, and that blocked use of the standard.

Q. And what was the result of that?

A. The result was action to rescind the standard.

Q. That was action within JEDEC?

2399

A. Yes, it was.

Q. During the time period between 1991 and 1996, what policies and procedures, if any, did JEDEC follow with respect to a disclosure of patents?

A. In the beginning of 1991, there was an event which transformed the JC-42 committee. Jim Townsend made it a very big issue that the committee needed to deal with patents and what he called patent applications in the work of the committee so that we could avoid whenever possible.

Q. Did Mr. Townsend explain why he thought that it was important that JEDEC deal with this?

MR. PERRY: If the answer is anything more than a yes, Your Honor, I feel compelled to object now on hearsay grounds.

JUDGE McGUIRE: I'll hear the answer.

THE WITNESS: Yes is fine.

JUDGE McGUIRE: Overruled.

THE WITNESS: Jim announced to the committee in January --

MR. PERRY: Excuse me, Your Honor, now I'm going to object to there's more to the answer apparently and I object on hearsay grounds.

JUDGE McGUIRE: Sustained. Let's restate and keep in mind, sir, again, what I cautioned you about

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earlier.

BY MR. OLIVER:

Q. Mr. Kelley, did you ever hear any discussions of litigation involving the company Wang at the JEDEC meetings?

A. Yes, I did.

Q. Could you please describe the discussions of Wang litigation that you heard at JEDEC meetings?

MR. PERRY: Objection, Your Honor, hearsay. If it's being offered for what was spoken at the meeting, it's being offered for the truth.

JUDGE McGUIRE: Mr. Oliver, any response?

MR. OLIVER: Your Honor, I believe it is important for the state of mind of this witness in order to explain why he understood JEDEC undertook certain steps to --

JUDGE McGUIRE: On that grounds, I'll entertain the question, because I allowed your -- a colleague the same opportunity in his examination, so I'm going to be fair and proceed, Mr. Oliver.

MR. OLIVER: Thank you, Your Honor.

MR. PERRY: Your Honor, as long as the questions are framed so that they call for that, I am going to have to get up in the future. If that's going to be your ruling.

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JUDGE McGUIRE: Okay, Mr. Oliver, do you understand that?

MR. OLIVER: Yes, I do.

JUDGE McGUIRE: That would be very helpful to all concerned.

MR. OLIVER: Thank you, Your Honor. If I could simply lay a foundation by asking --

JUDGE McGUIRE: Go ahead.

BY MR. OLIVER:

Q. Mr. Kelley, could you please describe the discussions, if any, you heard concerning the Wang litigation at JEDEC meetings?

A. Jim announced that his company, Toshiba, had been sued for assertion of patent fees on a part that had been JEDEC standard for several years.

Q. By the way, who is Mr. Townsend?

A. Jim Townsend was the member representative for Toshiba America.

Q. Did he have any other roles within JEDEC?

A. In the end of 1991 he was elected chairman of the JC-42.3 committee and he was also on JEDEC Council.

Q. Focusing now on your understanding between the years 1991 and 1996, in your understanding, did the Wang litigation have any relationship to any steps taken in JEDEC with respect to disclosure policy?

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A. Jim had become a general with a flagpole patent, and at every meeting and every sub-meeting for a week of meetings, Jim emphasized each group's need to make sure that we gave time for disclosure of patents and discussion of patents and resolved any patent issues that could be resolved at the committee meeting for the purposes of meeting the requirements of an open standard.

MR. OLIVER: May I approach, Your Honor?

JUDGE McGUIRE: Yes.

BY MR. OLIVER:

Q. Again, Your Honor, this document will be brought up on the screen.

Mr. Kelley, I'm showing you a document marked as JX-6 for identification. Do you recognize this document?

A. Yes, I do.

Q. And what is this document?

A. It's the JEDEC Council meetings for the meeting in June of 1991.

Q. By the way, were you present at this meeting?

A. Yes, I was.

Q. Mr. Kelley, just to clarify, I believe that earlier you said that you began serving the council in 1993. Does this document refresh your recollection in

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terms of when you began serving on the JEDEC Council?

A. Yes, the second item under B says -- it doesn't say that. Let me read the document. Yes, it is. The second item under B says that I was accepted as a member of council representing IBM Corporation.

Q. Thank you, Mr. Kelley. If you could now turn, please, to page 005 marked at the lower right-hand corner, and I'll direct you to internal page 10 of the document itself. And I would like to direct your attention in particular to paragraph number 5 appearing at the bottom of that page. Do you see that paragraph?

A. Yes, I do.

Q. It reads, "Mr. J. townsend presented an overview of the current situation, especially as pertaining to JC-42 --" let me back up a second and say that this paragraph is captioned Patent Issues and Procedures.

Do you see that?

A. Yes, I do.

Q. And then it reads, "Mr. J. townsend presented an overview of the current situation, especially as pertaining to JC-42, and recommended steps council could take. A presentation should be made at each committee meeting to discuss patent implications during the work cycle of a product committee."

Do you see that?

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A. Yes, I do.

Q. Were you present during that portion of the discussion of the council?

A. Yes, I was.

Q. And did you observe that discussion?

A. Yes.

Q. And did you understand the discussion that was occurring at that time?

A. Yes.

Q. What, if any, was the relationship between the discussion that was reflected in the paragraph I just read to you and the presentations made by Mr. Townsend at the various 42 subcommittees?

A. I saw this as Jim bringing the emphasis on dealing with patents for avoidance to the council with the desire to spread that emphasis over the rest of the JEDEC committees as JC-42 had already begun to work to.

Q. Now, Mr. Kelley, within the JC-42 committee, and its various subcommittees, do you recall observing presentations made by Mr. Townsend on patent matters?

A. Yes, I do.

Q. What do you recall Mr. Townsend saying with respect to the substance of the JEDEC patent policy?

MR. PERRY: Objection, hearsay.

MR. OLIVER: Your Honor, this goes to the

2405

instructions that were being given to all members in the room at JEDEC, this is a means by which --

JUDGE McGUIRE: Well, you can still, the question as posed I think is hearsay, so why don't you restate it in a way that it's not hearsay, if you can do that.

MR. OLIVER: Your Honor, if I could perhaps try to explain one more time, or provide a different explanation to you. The import of what Mr. Townsend was saying was not the truth of what Mr. Townsend was saying, but rather the instructions that he was giving, or in effect the operative words, they were instructions that were being given to the members. This is a means by which JEDEC was, in fact, communicating the substance of its disclosure policy to its members.

JUDGE McGUIRE: Well, why don't you ask him his understanding of the instructions as was given at the start of these meetings, and maybe that will get around Mr. Perry's problem.

MR. PERRY: Well, if I could respond to that point, for the record, Your Honor, what they're trying to establish as a fact is what the words that were spoken. And so, the testimony is trying to offer the hearsay for the truth. Because that's what they think is important here, and that's what they're trying to get

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in. So, that's why I'm objecting on the hearsay grounds.

JUDGE McGUIRE: Well, on that grounds, I am not going to allow hearsay that tries to prove an out of point statement. That's pretty clear, Mr. Oliver. So, you're going to have to decide how you can best go to where you're hoping to go, without invoking the hearsay rules.

MR. OLIVER: Thank you, Your Honor, I will rephrase the question, but I do want to be clear that the words were spoken, that is what we're trying to establish. But I will rephrase the question.

Mr. Kelley, based on your observations of Mr. Townsend's presentations at various JC-42 committee and subcommittee meetings, what was your understanding of what Mr. Townsend was communicating to the members?

THE WITNESS: What I understood at the meeting was that Jim was emphasizing to me and the rest of the people in attendance that we needed to disclose patented or material that would probably become a patent to the committee so that the committee had an opportunity in the creation of its standards to avoid the patents when possible.

BY MR. OLIVER:

Q. Now, Mr. Kelley, when you use the term

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"patents," what did you understand Mr. Townsend to be meaning with respect to the term "patents?"

A. I understood him to mean an issued patent that was available from the patent office, patent applications that were being worked on with the patent office, and items that were probably going to become patents.

Q. And the understanding that you just testified to, is that an understanding that you gained through your observation of Mr. Townsend's presentations?

A. Yes.

Q. Did Mr. Townsend generally show anything to members during the course of his presentations?

A. Yes, he would show a number of things. He would show the EIA patent policy. He showed that at just about every meeting. He would sometimes also show the ANSI patent policy. He would also show news articles and sometimes have guest speakers that were experts on patent issues.

Q. Did Mr. Townsend also show something that you referred to as a patent tracking list?

A. Yes. He began the patent tracking list I believe in May of 1991.

Q. What was your understanding of the purpose behind Mr. Townsend's patent tracking list?

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A. I believe that it kept a record of all of the patent issues that we had disclosed by number, by name, by company. It also was a reminder to me as we opened the meeting to remember the patent issues that were on the list. And I believe it was also an education for those who were newcomers to the committee, to see that not only was this patent policy that Jim had made an issue of important, but it was a long list of issues of historical importance.

Q. Between the time period of 1991 and 1996, did you have an understanding, one way or the other, as to whether Mr. Townsend's patent tracking lists represented all of the patents and patent applications that were disclosed to the 42 committee?

A. No, in fact, I know that it did not, because I know of instances where patent issues did not make the list.

Q. Do you have an understanding why Mr. Townsend's list was not complete?

A. I do not.

MR. OLIVER: Your Honor, may I approach?

JUDGE McGUIRE: Yes.

BY MR. OLIVER:

Q. Mr. Kelley, I am handing you a document that has been marked as CX-208, it's a JEDEC publication and

2409

about two-thirds of the way down the page, JEP 21-I. Mr. Kelley, do you recognize JX-208?

A. Yes, I do.

Q. What is this document?

A. This is the manual of organization and procedure that covers the rules of all of the JEDEC committees.

Q. And which version do you have there?

A. This is the 21-I version which were released or published in October of 1993.

Q. Did you have any role in the creation of this document?

A. Yes, I did.

Q. And what role did you have in the creation of this document?

A. I was on JEDEC Council and this document is controlled by that council. I was assigned to the committee that was to work on the creation of this document, so I worked on its creation.

MR. OLIVER: May I approach, Your Honor?

JUDGE McGUIRE: Yes.

BY MR. OLIVER:

Q. Mr. Kelley, I have handed you a document that has been marked as JX-11 for identification. Do you recognize this document?

A. Yes, I do.

2410

Q. What is this document?

A. This is the minutes of the JEDEC Council meeting that was held in January of 1992.

Q. Were you present at this meeting?

A. Yes, I was.

Q. If I could ask you to turn to page 005 in the lower right-hand corner, that will direct your attention to internal page 9 of the document. And if I could direct your attention to the top of the left-hand page, the caption says, "Revision of JEP21-H." Do you see that?

A. Yes.

Q. And if you could read the paragraph under that to yourself, please.

A. Okay.

Q. Were you present at the meeting during the discussions reflected in that paragraph?

A. Yes, I was.

Q. And did you observe that discussion?

A. Yes, I did.

Q. And did you understand the discussion at the time?

A. Yes.

Q. Can you please explain your understanding of what was being discussed in council meeting at that

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time.

A. The council was dealing with -- let me collect my thoughts.

The council was dealing with this revision of 21-I, and some major changes were going to be taking place in the committees as a result of this revision.

Q. And what particular changes was the council dealing with?

A. One of the significant changes was that officers of the committee, chairpersons, was going to become an elected position, rather than an appointed position. And another change was the inclusion of patent applications in the wording of the patent section of our document.

Q. How, if at all, is the discussion reflected in the paragraph I directed you to of JX-11 related to the work that you mentioned that you were involved in with respect to the creation of JEP21-I, CX-208?

A. This is that same work.

Q. So, in other words, the other paragraph in the council meetings reflects the ongoing work for the manual?

A. That's correct.

Q. Mr. Perry -- Mr. Kelley, if I could ask you, and I'll ask Mr. Perry as well, to locate CX-35, which I

2412

believe you already have. Do you have that document?

A. Yes, I do.

Q. This is the set of council minutes from May of 1992 that we looked at previously.

A. Yes.

Q. And again, just as a reminder, you were present at this meeting, right?

A. Yes.

Q. If I could ask you to turn, please, to page 9. And specifically, I would like to direct your attention to Roman numeral VI, subparagraph 4, that bears the caption, Patent Issues and Procedures. Do you see that?

A. Yes, I do.

Q. Underneath that it says, "A discussion was held concerning patent policy. The secretary outlined the genesis for changes and the fact that a new set of policy statements and guidelines have been written that will be circulated to council for review and comment."

Do you see that?

A. Yes.

Q. Again, were you present for that part of the discussion?

A. Yes, I was.

Q. And did you observe or take part in that discussion?

2413

A. Yes, I did.

Q. And did you understand that at the time?

A. Yes.

Q. Based on your understanding at that time, could you please explain in a little more detail what was being discussed at the council meeting at that time?

A. Jim Townsend had brought the need for the JEDEC Council to consider revising the manual operation and procedures that run the various JEDEC committees with regard to patent issues and patent issue procedures, and this is the item in the minutes of that meeting that began that effort.

MR. OLIVER: May I approach, Your Honor?

JUDGE McGUIRE: Yes.

BY MR. OLIVER:

Q. Mr. Kelley, I've handed you a document marked as CX-39 for identification. Do you recognize this document?

A. Yes, I do.

Q. What is this document?

A. It's the JEDEC Council minutes for our meeting in September of 1992.

Q. Again, were you present at this meeting?

A. Yes, I was.

Q. If I could ask you to turn, please, to page 12

2414

of this document. And if I could direct your attention specifically under Roman numeral VII to subparagraph 4, it reads, "JEDEC manual of organization and procedure 21-I." Do you see that?

A. Yes, I do.

Q. And underneath that it reads, "Mr. Longfellow outlined the items needing discussion: A, procedures for calling meetings; B, performance of task groups; C, policy with regard to elevating JEDEC and EIA standards; and D, policy with regard to patents."

Do you see that?

A. Yes.

Q. Again, were you present during this part of the discussion?

A. Yes.

Q. Did you observe this part of the discussion?

A. Yes.

Q. Did you understand this part of the discussion?

A. Yes.

Q. Based on your understanding at the time, could you please explain in more detail what exactly was being discussed at this part of the council meeting?

A. Mr. Longfellow, who was the chairman of the task group that was headed up to create the new standard 21-I, was giving the council a status update on the work

2415

that had been done to this point.

Q. Can you please explain what the four items are, A, B, C and D?

A. Those I believe are the four items that David Longfellow had picked out as significant changes in the document that he wanted to draw the council's attention to.

Q. And specifically item D, policy with regard to patents. What was referred to there?

A. The changes in the policy with regard to patents, which as I remember was the addition of patent applications to the word patents.

Q. Mr. Kelley, I believe in your answer you referred to changes in policy, I would like to clarify for the record, are you referring to a change in the actual JEDEC disclosure policy?

A. No, I'm referring to the words in the document that were changing as a result of the request that Jim Townsend had made more than a year before this, and this same request that Jim had made that had caused my committee's practices to change.

Q. Based on your understanding of the JEDEC policy in the early 1990s, and based on your understanding as one of the individuals involved in working on the addition to the JEDEC manual, did you understand that

2416

the work that you were doing in the manual would change in any way the substance of the JEDEC disclosure policy?

A. No.

MR. OLIVER: May I approach, Your Honor?

JUDGE McGUIRE: Yes.

BY MR. OLIVER:

Q. Mr. Kelley, you have been handed a document that has been marked as JX-14. Do you recognize this document?

A. Yes, I do.

Q. What is this document?

A. This is the minutes of the meeting of JC-42.3 in December of 1992.

Q. Were you present at this meeting?

A. Yes, I was.

Q. I would like to direct your attention, please, to page 3 of JX-14.

A. Okay.

Q. And specifically I would like to direct your attention to paragraph 5.

A. Okay.

Q. It's very difficult to read in the copy, perhaps we can wait for it to come up on the computer screen. Mr. Kelley, do you see on paragraph 5 under the caption Patent Policies, it reads, "A presentation was made on

2417

the EIA patent policies by Mr. Townsend (see attachment A). The tracking list was shown and also the draft of appendix F of JEP-21-M policy manual (see attachment B)."

Do you see that?

A. Yes.

Q. Were you present for this part of the discussion?

A. Yes.

Q. Did you observe this part of the discussion?

A. Yes.

Q. And did you observe the showing of appendix F of JEP-21-H?

A. Yes.

Q. If I could ask you to turn, please, to page 21 of JX-14. You see that this page has handwriting in the right-hand corner that reads "attachment B, appendix F, patent policy guidelines." Was this part of the documents that were shown at the December 1992 JC-42 subcommittee meeting?

A. Yes.

Q. And if I could ask you to turn ahead also to page 25. And you'll see on here is a page at the beginning of 8.3, a reference to patentable and patentable products in JC standards.

2418

A. Yes, I do.

Q. And at the head of the page, 8.3.1, "Committee Chairpersons Responsibility Concerning IPR." Do you see that?

A. Yes, I do.

Q. And do you recall whether this page was also shown during the December 1992 JC-42 subcommittee meeting?

A. Yes.

Q. Now, if you could also take a look in particular at the paragraph appearing underneath a heading 8.3.1. Do you see that?

A. Yes.

Q. And if you need to refer to the 21-I manual, I believe you have it there in front of you, my question is whether you recall whether the paragraph appearing underneath 8.3.1 appears in identical or substantially similar form in the 21-I manual.

MR. PERRY: Objection, compound, and the documents speak for themselves.

JUDGE McGUIRE: Overruled. I'll hear the answer.

THE WITNESS: Yes, it is the same.

BY MR. OLIVER:

Q. With respect to page 25 of JX-14, if you see on

2419

that page certain text there is underlined. Do you see that?

A. Yes, I do.

Q. And do you or at the time that this was shown, did you have an understanding as to why certain text was underlined?

A. It was underlined to draw attention to that part of the document.

Q. Do you have an understanding as to whether that underlining was done for purposes of the showing at the 42.3 subcommittee meeting?

A. Yes, it was. And the reason for the attention was that Jim did not want the committee to miss the changes that were occurring.

MR. PERRY: Your Honor, I'll move to strike the last part of that answer as not responsive as to what Mr. Townsend's motivations were.

MR. OLIVER: Your Honor, I was asking his understanding as to why these passages are underlined.

JUDGE McGUIRE: That is sustained and that last answer will be stricken from the record.

MR. OLIVER: Your Honor, may I approach?

JUDGE McGUIRE: Yes.

BY MR. OLIVER:

Q. Mr. Kelley, I have handed you a document that

2420

has been marked as CX-46. Do you recognize this document?

A. Yes.

Q. What is this document?

A. It's the JEDEC Council minutes of the meeting that we held in January of 1993.

Q. Were you present at this meeting?

A. Yes.

Q. If I could ask you to turn, please, to page 9 of JX -- excuse me, of CX-46. And if I could direct your attention specifically under Roman numeral VI, other business, to paragraph 2, Patent Issues and Procedures.

Do you see that?

A. Yes.

Q. The paragraph there reads, "Consensus was expressed that more strength is needed in our policy, however under existing laws, it seemed difficult to do. This item will be discussed further in the revision of 21-H."

Do you see that?

A. Yes.

Q. And again, were you present during this part of the council discussion?

A. Yes.

Q. And did you observe or participate in this

2421

discussion?

A. Yes.

Q. And did you understand this discussion at the time?

A. Yes.

Q. With the reference there to the revision of 21-H, is that the revision of the JEDEC manual that you have been describing?

A. Yes.

Q. If I could direct your attention to the first sentence, "Consensus was expressed that more strength is needed in our policy." Can you please explain your understanding of what was meant in a discussion of that point?

A. Yes, I understood the more strength concept to be the inclusion of patent applications and material that might become patents to the concept of patent requirements within the previous document.

Q. You've referred to the document, again, based on your understanding at the time of this discussion, did you understand the discussion to be referring to more strength of the JEDEC policy itself, or more strength in the document, or something else?

A. More strength in the document.

Q. Is that -- strike that, please.

2422

With respect to the following part of the sentence, "However, under existing laws, it seemed difficult to do." Can you please explain your understanding of what was meant after that sentence?

A. In my understanding, the difficulty was that the EIA legal guides did not include the patent application and material that might become patents concept, and the question before council was could we expand the definition under JEDEC Council control without endangering our position under the EIA control.

Q. And again, when you refer to expanded definition, are you referring to the expanded definition within the policy or the definition within the written documents or something else?

A. No, within the words of the document.

Q. I'm sorry, within the written documents?

A. Within the -- yes, within the written document.

Q. And did the council reach a conclusion as to whether they could, in fact, expand the definition within the written document?

A. The conclusion was to take the expanded wording.

Q. And just so the record is clear on this point, with respect to the expanded wording that you have referred to, how if at all did that expand the actual substance of the JEDEC disclosure policy itself?

2423

A. It did not change the substance of the practice that we had been performing to this point, it just brought this document up to date to that practice.

MR. OLIVER: May I approach, Your Honor?

JUDGE McGUIRE: Go ahead.

BY MR. OLIVER:

Q. Mr. Kelley, I have handed you a document marked as CX-54 for identification. Do you recognize this document?

A. Yes.

Q. Now, what is this document?

A. It's the JEDEC Council minutes for a meeting in May of 1993.

Q. Were you present at this meeting?

A. Yes, I was.

Q. If I can ask you to turn, please, to page 7 of CX-54. And if I could direct your attention a little more than halfway down the page, to an item bearing the number JCB-93-06A that bears the caption Proposed Revision of JEDEC Manual of Organization and Procedure.

Do you see that?

A. Yes.

Q. Again, were you present at the council meeting during the discussion of this item?

A. Yes.

2424

Q. And did you observe or participate in the discussion of this item?

A. Yes.

Q. And at that time, did you understand and follow the discussion of this item?

A. Yes.

Q. Would you please start by explaining the significance, if any, of the item JCB-93-06A?

A. JCB stands for JEDEC Council ballot, 93 means that it was created in the year '93, it was the sixth standard ballot for that year in JEDEC Council, and A says that it was a revised version of the first issue of the ballot.

Q. And then the caption next to that reads, "Proposed revision of JEDEC manual of organization and procedure." Is this the same provision that you had been discussing that led to the 21-I version of the manual?

A. Yes, it is.

Q. If I could direct your attention to the first paragraph, or the first sentence, excuse me, of that paragraph, it reads, "The comments received from members were extensively reviewed and editorial changes made."

Do you see that?

A. Yes.

2425

Q. Can you please explain what you recall about what was reflected by that sentence?

A. This document was going to create changes in the operation of all of our many committees. We wanted to make sure that we got feedback from all of the various committees so that we understood them before we received final passage. So, we were receiving all of the information that had come back from the people on our different committees to deal with any issues that they had raised.

Q. All right, and the reference to editorial changes made, based on your recollection, what does that refer to?

A. Editorial changes are usually punctuation, misspelled words.

Q. The next sentence reads, "Based on this review, the council voted to accept the amended version of 21H and authorized its circulation for their required second vote." Could you please explain, again based on your recollection of the discussion of this matter, what was meant by required second vote.

A. JEDEC Council practice was to require two votes on documents that would change the organization, and this report was saying that the first ballot vote had been approved, and the council was now authorizing this

2426

ballot to be issued for a second ballot for approval.

Q. The next sentence reads, "A motion was made by Mr. Kelley and seconded by Mr. Olsen to adopt this version at the first reading." Do you see that?

A. Yes.

Q. Did Mr. Kelley in that sentence, does that refer to you?

A. Yes, it does.

Q. And the reference to adopting this version as the first reading, is that the same as the first ballot that you are referring to?

A. Yes, it is.

Q. And the next sentence reads, "The motion unanimously passed." Again based on your recollection of the meeting, was that again the passing of that first ballot?

A. Yes.

MR. OLIVER: Your Honor, may I approach?

JUDGE McGUIRE: Please.

BY MR. OLIVER:

Q. All right, Mr. Kelley, I have handed you a document that is marked as CX-55 for identification. Do you recognize this document?

A. Yes.

Q. What is CX-55?

2427

A. It's the JEDEC Council minutes from our meeting in September of 1993.

Q. Were you present at this meeting?

A. Yes.

Q. If I could please ask you to turn to page 2 of CX-55. And so I can direct your attention to the upper portion of the right-hand page, there's an item there that reads, JCB-93-06A. Do you see that?

A. Yes.

Q. And next to that it reads, "Proposed revision of JEDEC manual of organization and procedure." Do you see that?

A. Yes, I do.

Q. Is that the same item that you looked at in the previous set of council minutes?

A. Yes.

Q. Again, were you present during the discussion of this item in that council meeting?

A. Yes.

Q. And did you observe or participate in that discussion?

A. Yes, I did.

Q. And did you understand that discussion at that time?

A. Yes.

2428

Q. The paragraph description under that heading reads, "It was agreed to modify appendix X." Do you see that?

A. Yes.

Q. Do you recall what modifications were being discussed there?

A. I don't recall the details, but because this is shown has having passed, that tells me that appendix X was changed for editorial reason.

Q. The paragraph continues, "The document was approved as amended on motion by Mr. Brooks and seconded by Mr. Longfellow. The vote was unanimous." Do you see that?

A. Yes.

Q. Now, which ballot, if any, did that vote constitute?

A. This would be the second passage of the revision of standard 21-H.

Q. Did this indicate the final approval beyond revision of the 21-H manual?

A. Yes.

Q. Now, with respect to the revision of the manual that you've been describing, what happened next?

A. The manual was published about a month later.

Q. Okay, and if you could once again, please,

2429

rotate CX-208 in front of you. Do you have CX-208?

A. Yes.

Q. Was CX-208 the actual manual that was published about a month later?

A. Yes.

Q. If I could ask you to turn, please, to page 19 of CX-208. And I would like to direct your attention in particular to paragraph 9.3.1, on that page. Do you see that heading?

A. Yes.

Q. And the beginning of that paragraph reads, "The chairperson of any JEDEC committee, subcommittee or working group must call to the attention of all those present requirements contained in EIA Legal Guides, and call attention to the obligation of all participants to inform the meeting of any knowledge they may have of any patents or pending patents that might be involved in the work they are undertaking."

Do you see that?

A. Yes, I do.

Q. Based on your understanding as a member of the group who was drafting this change, at the time of your working on and finalizing this language, did you understand this to impose a higher duty on the chairperson than on any other JEDEC member that was

2430

present at a meeting?

A. No.

Q. Did you understand, again, based on your participation in the drafting process of this manual, that the obligation of the chairperson would be different in any way to the obligation of any other member present in the meeting?

A. No, the sentence reads, "All those present."

Q. Towards the end of the sentence that I read for you, there's a reference to "The work they are undertaking." Do you see that?

A. Yes, I do.

Q. Again, I would like to ask about your understanding based on your role as a member of the committee working on the draft of this language. Based on your understanding, what was reflected by the term "the work they are undertaking?"

A. At the committee, we would see proposals from various members, and once that proposal was before the committee, then that was considered the work that we were undertaking.

Q. Mr. Kelley, if I could also direct your attention to the footnote at the bottom of the page, which reads, "For the purpose of this policy, the word patented also includes items and processes for which a

2431

patent has been applied and may be pending."

Do you see that?

A. Yes, I do.

Q. Again, as a member of the committee that was working on the redrafting of this manual, what was your understanding as to why that footnote was added to that page?

A. We were including the words in this document which added the requirement of disclosing patent applications to the document as we had been practicing in JC-42 for several years at this point.

Q. If I could ask you to turn, please, to page 29 of CX-208.

A. Okay.

Q. And in particular, I would like to ask you to look at the third of the bullet points listed on that page.

A. Okay.

Q. The sentence there reads, "By its terms, the EIA patent policy applies with equal force to situations involving: One, the discovery of patents that may be required for use of a standard subsequent to its adoption." Do you see that?

A. Yes, I do.

Q. And based on your understanding at the time,

2432

could you please explain your understanding of what that means.

A. If the JEDEC organization, and I say it that way because it was inexclusive of the committee and the council, had found out that there was patent material that applied to a standard that we had approved without the knowledge of that patent material, then the validity of that standard was in question and we often either we removed the standard or expected the patent issue to be resolved.

Q. Actually, Mr. Kelley, I forgot to ask you one question with respect to page 19, if I could have you turn back to page 19, please.

A. Okay.

Q. And again with respect to the paragraph appearing under the heading 9.3.1. Do you see that paragraph?

A. Yes.

Q. And again based on your understanding of the member of the group who was drafting the revisions to this manual, do you believe that this paragraph imposed any greater duty on the member making the presentation as opposed to any other member present at the meeting?

A. No.

Q. Okay, thank you. Mr. Kelley, during your time

2433

as an IBM representative at JEDEC, did IBM adhere to the JEDEC patent disclosure policy?

A. Yes.

Q. Did IBM ever disclose a patent at JEDEC?

A. Yes.

Q. Can you give any examples?

A. In the middle of 1988, I had proposed a new function for a DRAM that we called toggle mode, and at the time I presented that new proposal, I gave the potent number that we held on that concept.

JUDGE McGUIRE: Now, was that an issued patent or a patent application?

THE WITNESS: That was an issued patent, sir.

JUDGE McGUIRE: All right.

MR. OLIVER: Your Honor, may I approach?

JUDGE McGUIRE: Yes.

BY MR. OLIVER:

Q. Mr. Kelley, I have handed you a document that's been marked as CX-21 for identification. Do you recognize this document?

A. Yes, I do.

Q. What is this document?

A. This is the minutes of the meeting of JC-42.5 that we held in September of 1991.

Q. And by the way, what is the 42.5 subcommittee?

2434

A. DRAMs are primarily used in personal computers on little cards called modules, and the modules also have to be standardized, and this was the committee that standardized those modules that contained several DRAMs.

Q. Were you present at this meeting?

A. Yes, I was.

Q. If I could ask you to turn, please, to page 43 of CX-21. That page that has a handwritten note, "attachment I" on the upper right-hand corner, "JC-42.5 8 Byte Simm Proposal." Do you see that?

A. Yes, I do.

Q. Do you recognize this document?

A. Yes, I do.

Q. What is this document?

A. This is a proposal that is recorded from what Mark Kellogg showed -- of the IBM Corporation -- showed at that meeting.

Q. I see initials in the lower, left-hand corner, MK, does that stand for a Mark Kellogg?

A. Yes, it does.

Q. Who is Mark Kellogg?

A. Mark Kellogg is my associate and one of my alternates on JC-42.3.

Q. If I could direct your attention, please, to page 45.

2435

A. Yes.

Q. And this page is still part of Mr. Kellogg's proposal, isn't it?

A. Yes, it is.

Q. At the top of this page it reads, "Proposal Status: IBM wishes to disclose full details of this proposal in 12/95, and underneath that, "Product definition remains volatile, resolution of any potential patent issues prior to showing."

Do you see that?

A. Yes, I do.

Q. By the way, did you observe this portion of Mr. Kellogg's presentation?

A. Yes, I did.

Q. Did you understand what he was referring to in this portion of his presentation?

A. Yes.

Q. Now, could you please explain what he was referring to in this part of his presentation?

A. IBM was putting together a patent application, but had not applied yet. So, this was a prepatent application and Mark was notifying the committee that we intended to obtain a patent on some items that were included in this proposal, and he wanted the committee to be alerted to that.

2436

Q. So, in other words, he was referring to an application that IBM was putting together with respect to aspects of the presentation he had made?

A. Yes.

Q. What did Mr. Kellogg explain with respect to the first item, "IBM wishes to disclose full details of this proposal in 12/91?"

MR. PERRY: Objection, hearsay.

MR. OLIVER: Your Honor, I will withdraw the question.

Mr. Kelley, did you have an understanding of what Mr. Kellogg meant with respect to the item, "IBM wishes to disclose full details of this proposal in 12/91?"

THE WITNESS: Yes, we were trying to include all of the options that had been discussed with our customers, and we wanted to note to the committee that there might be a change in our proposal, not a major change, but a change that occurred between this meeting and the next.

R. OLIVER: May I have just a moment, Your Honor, please?

JUDGE McGUIRE: Go ahead.

MR. OLIVER: Your Honor, we would probably need a minute here, what I would suggest is this might be an

2437

appropriate time for break.

JUDGE McGUIRE: All right, we will take off for ten minutes and we will break. And just while we're talking on the subject, how much more time do you anticipate you're going to need for this witness on direct?

MR. OLIVER: Well, I anticipate that we will not finish the direct today, that the direct will carry over until tomorrow.

JUDGE McGUIRE: All right, fine, very good.

(Whereupon, there was a recess in the proceedings.)

JUDGE McGUIRE: Mr. Oliver, you may proceed with your questioning of the witness.

MR. OLIVER: Thank you, Your Honor. Your Honor, may I approach the witness?

JUDGE McGUIRE: Yes.

BY MR. OLIVER:

Q. Mr. Kelley, I've handed you a document that has been marked as JX-10 for identification. Do you recognize this document?

A. Yes.

Q. What is this document?

A. It's the minutes of the meeting of JC-42.3 in December of 1991.

2438

Q. Were you present at this meeting?

A. Yes.

Q. If I could direct your attention, please, to the top of page 11 of this document.

A. Okay.

Q. And you'll see here that there's a discussion involving -- and I'll try to read these as best I can, I believe it says, "6.7, JC-41.3-91-172 (continued)." Do you see that?

A. Yes, I do.

Q. And please refer to the previous page if you wish to do so in order to understand the context of that discussion. The question I would like to ask you about those would be the third line down.

A. Yes.

Q. See a reference there, "IBM: IBM has a half SAM patent. Patent number is 4,984,214." Do you see that?

A. Yes, I do.

Q. First of all, with respect to the reference to IBM, do you recall which IBM representative would be referred to here?

A. Yes, that was me.

Q. Is this a patent that you disclosed at this meeting?

A. Yes, it was.

2439

Q. By the way, can you please explain what a half SAM patent is?

A. A video RAM is a special type of DRAM that has an output buffer that allows it to stream data to a screen. So, for example, on our screens here, data is very well organized by the processor, and this buffer takes that organized data, puts it into an output buffer and the issue here is should that be a full output buffer or a half output buffer, and we call it a half SAM, which is serial access mode buffer. And IBM was proposing that a half output buffer would be better than a full output buffer. And we were disclosing the patent number that we held on that concept.

Q. Thank you. Is it possible to pull up the previous page as well as this page? On the bottom of page 10, could you pull up the bottom paragraph. And then actually, if you can blow up the top of the next page as well so we can see them both together. Thank you.

I've pulled up now all of item 6.7 so you can see the full context here. Now, does this refer to a discussion involving a ballot at this meeting?

A. Yes, it does.

Q. And I see underneath that reference to a number of different companies. What do those references refer

2440

to?

A. The vote on this ballot is six yes and six no, no votes on the committee require a comment, so there will be at least six companies listed with their comment, and there may be others who also commented without voting no.

Q. By the way, was this an item that IBM itself was proposing?

A. We were proposing the half SAM portion of this item and Texas Instruments was proposing the full SAM portion of this item.

Q. Now, which portion did this ballot refer to?

A. I'm sorry, I don't understand the question.

Q. I'm sorry, did this ballot involve either the IBM portion or the Texas Instruments portion or both?

A. Yes, this item was to decide whether we should do the full SAM or -- I'm sorry, that's not an or -- and
the half SAM as design concepts that would both become standards.

Q. Mr. Kelley, in this same document, if I could ask you to turn, please, to page 3.

A. Okay.

Q. And if we could blow up paragraph 3.2, it's right about the middle of the page. That is unfortunately very difficult to read. This appears to

2441

be a Siemens TV field buffer, item 405, and you see beginning at the end of the first line, DEC, by the way, DEC stands for Digital Equipment Corporation. Is that right?

A. Yes.

Q. "DEC has a patent on triple port DRAM." Do you see that?

A. Yes.

Q. And by the way, did you observe this portion of the discussion at this meeting?

A. Yes.

Q. If we could now turn to page 5. And if we could blow up item 4.12. This is an item "IBM synchronous DRAM versus HST toggle." Do you see that?

A. Yes.

Q. What is your understanding or at this time what was your understanding of HST toggle?

A. HST was our abbreviation for high speed toggle. This was the concept that I had presented in 1988. We were installing it on DRAMs from that time, and we were asking this committee to consider this as a feature on DRAMs as a standard.

Q. Shortly before the break you referred to a patent that you had disclosed in the late 1980s.

A. Yes.

2442

Q. Now, is that patent related to this HST toggle?

A. Yes.

Q. If I could ask you to turn now to page 8, please. And if we could blow up the bottom half of this page, starting with 6.2 V-pack. And if I could direct your attention to the first paragraph under this heading, the ballot has two parts, part A, I'm having difficulty reading this, but at the end of that line, "Comments were: Fujitsu: We believe it should not be standardized." Do you see that?

A. Yes.

Q. And then further down, about three quarters of the way down this particular segment, there's a reference to Samsung, and after that appears "patent issue." Do you see that?

A. Yes.

Q. If I could direct your attention -- Your Honor, if you could bear with me, this is leading to a question.

JUDGE McGUIRE: Go ahead, Mr. Oliver.

BY MR. OLIVER:

Q. If I could ask you to turn, please, to page 9.

A. Okay.

Q. And there is an item on 6.3, if we could blow up that paragraph, please. And about halfway down this

2443

particular blow-up, there is a comment from Siemens, "We will license the technology from our patent for a reasonable fee. The patent number is 4,752,929," I believe that's a 9, but I'm not sure.

Do you see that?

A. Yes, I do.

Q. And then if I could direct your attention further down on that same page, to an item 6.4. And again, the third line underneath here, "Siemens: We have a patent, 4,602,353," I believe it says, "that may cover this. A license letter can be sent to the committee on this." Do you see that?

A. Yes, I do.

Q. If I can now ask you to turn to the next page, on page 10, under item 6.6. Towards the bottom of this blow-up, you see a reference to TI: "We have patent 4,653" -- and I can't read the last three digits -- "that may affect this proposal." Do you see that?

A. Yes, I do.

Q. Then if I could ask you to turn to page 11, please. And here under item 8, Patent Matters, if we could blow up that paragraph. The second paragraph refers to Texas Instruments, "TI corrected the patent number on the V-pack. TI did not have any toggle mode patents, and so the item was stricken from the list."

2444

Actually, let me pause for a moment here and ask whether you have a recollection of that particular discussion.

A. Yes, I do.

Q. Now, could you please explain what was discussed in reference to that item?

A. Yes, in the previous meeting to this one, the committee had asked TI if they had a patent on the concept of toggle mode, which is a dual edge clock operation of the DRAM, and TI was coming back at this meeting and saying, we do not.

Q. If I could now direct your attention to the next line, the Hitachi patent policy was presented, I believe that's attachment U, Hitachi also clarified patents which that were identified as theirs. Again let me pause and ask whether you have a recollection of the discussion of that particular matter.

A. Yes, I believe at the previous meeting, Hitachi had been challenged on whether they had patents on certain items, and here, Hitachi was clarifying so that the committee would know any patent material that they held. And they updated the patent listing.

Q. If I could direct your attention to the next sentence, "Motorola noted that they did not have toggle mode patent, some other identified patents were

2445

updated" -- and I believe that reads "and classified."

Do you see that?

A. Yes.

Q. Mr. Kelley, my question is I believe in looking at these minutes, we've just identified a discussion of patent issues involving Digital Equipment involving the toggle mode, which is an item which you had earlier disclosed a patent, discussion of patent on the V-pack matter, reflecting concerns from Fujitsu and Samsung, two separate disclosures on two separate presentations by Siemens, disclosure by Texas Instruments, clarification by Texas Instruments, clarification by Hitachi, and clarification by Motorola.

My question is, based on your participation, observation and discussion in this meeting, at the time, did you have an understanding as to why there was so many references to patents in a discussion at this 42.3 subcommittee meeting?

MR. PERRY: Objection, calls for speculation about the motive of each of those different companies that he just mentioned. Counsel shouldn't be characterizing the evidence that way.

MR. OLIVER: Your Honor, may question was not to the motives of the company, my question was to the understanding of Mr. Kelley as to his understanding of

2446

why there was so much discussion of patent matters at this meeting.

MR. PERRY: The question called for the witness to describe why other people were doing what they were doing. He's described what they did, really just by reading from the minutes, but he's not here to testify as to why they did what they did.

JUDGE McGUIRE: All right, as to that is sustained, but only to the extent that you will not be allowed to testify as to other people's motives, but otherwise you can answer that question.

THE WITNESS: All right, yes, one of the things that I realized at this meeting is that there was a tremendous growing importance on the issue of patents at my committee. And why that was important to me is that I was responsible for the running of that committee, and it was very clear that it was not going to run as quickly as it had if these patent issues were going to be discussed on every item.

BY MR. OLIVER:

Q. Was it a concern of yours that the discussion at the meetings might not run as quickly?

A. It was a concern, and in fact it was in this time frame that I had a meeting that ran five hours over time.

2447

Q. If I understood your question correctly, you said that the discussion of patent events did add to the time of the meetings. Is that correct?

A. Yes.

Q. But did you take any steps to curtail to shorten the discussion of patents at the meeting?

A. The situation somewhat resolved itself because Jim Townsend had made a significant emphasis at our meeting two meetings before this and this was the result of companies suddenly being triggered on items that had been active for some time, and so we were seeing a lot of activity at this time on old items. What happened in time was that as newer presentations came along, the patent information was disclosed quickly, and I didn't have that time problem that I had in meetings like this one.

Q. With respect to the future point in time at which you said you did not have the same kind of problems, did that affect in any way the degree or the level of disclosure with respect to patents and patent applications?

A. I think we were just seeing more and more of it as people recognized the need and the importance to the committee.

Q. I would like to clarify the time period that

2448

you're referring to, and I believe that will give us the answer, when you said that you were seeing more and more, what time period were you referring to?

A. From this meeting, which was the end of -- the end of 1991, through about the middle of 1992, there was a tremendous amount of activity on the order of ten, eight, seven items where that was patent discussion. By the second half of 1992, that settled down to one or two items per meeting.

MR. OLIVER: May I approach?

JUDGE McGUIRE: Go ahead.

BY MR. OLIVER:

Q. Mr. Kelley, you've been handed a document marked as JX-15 for identification. Do you recognize JX-15?

A. Yes, I do.

Q. What is this document?

A. It's the minutes of the JC-42.3 committee meeting in March of 1993.

Q. All right, were you present at this meeting?

A. Yes.

Q. Could I ask you to turn, please, to page 6 of JX-15. If we could blow up the paragraph appearing at the top of this page.

A. Okay.

Q. At the top of this page there's a heading

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reading "MOSAID Patent Issue." Do you see that?

A. Yes.

Q. Actually, let me please direct your attention to underneath that that reads, "The committee was aware of the Hitachi patent. It was noted that Motorola has already noted they have a patent." And then it reads, "IBM noted that their view has been to ignore patent disclosure rule because their attorneys have advised them that if they do then a listing may be construed as complete."

Do you see that?

A. Yes.

Q. Do you have a recollection of -- let me withdraw that.

Let me ask first, does the reference to IBM in that paragraph refer to you?

A. Yes, it does.

Q. Do you have a recollection of making a statement to the 42.3 subcommittee at this meeting?

A. Yes.

Q. Does this passage accurately reflect the statement that you made to the 42.3 subcommittee at this meeting?

A. No.

Q. Could you please explain what you did say to the

2450

42.3 subcommittee at this meeting.

A. The question came up to me at the committee meeting about IBM providing the committee a list of all of the patents that the corporation might hold or might have pending regarding all issues at all levels of the computer business to the committee. And I could not guarantee that I could deliver the list of all of the material with regard to application of patents around the world, because I was considering probably 25 different locations that I would have to do a search on for all of the patent application activities that might apply.

Q. I notice that in that passage I read to you there's a reference to do a listing, but based on your understanding at that time, was there any particular concern with respect to a list or a listing?

A. I think that probably the issue came up because people were aware that IBM was using some of these features at many levels within many computers, and so therefore they were asking me to provide the committee with a list of all issued patents and patent applications, and I was warning the committee that that was not something that I could do. It was just not a possible task for me to know what was going on all over the world for the IBM Corporation.

2451

I then went on to promise the committee that I would alert the committee to any information that I had that applied to the JEDEC task at hand and if a question came up, I would get them information on any patent that they could describe to me.

Q. By the way, based on your understanding of the JEDEC disclosure obligation between 1991 and 1996, did the JEDEC disclosure obligation obligate members to go back to their companies and search their patent portfolios for relevant patents or applications?

A. I do not think it did. I think that it put the requirement of disclosure on everyone in attendance. I did not think it required disclosure of everyone in every corporation wherever they were.

JUDGE McGUIRE: All right, sir, I'm not clear on that answer. Could you say that again so that I understand what your answer was.

THE WITNESS: I understood the JEDEC policy to require the disclosure of patent or patent applications by everyone in attendance at the meetings, but I did not think that it put a requirement upon the companies that were represented at those meetings to disclose everything that they had going everywhere in the world.

JUDGE McGUIRE: All right, I understand. Go ahead, Mr. Oliver.

2452

BY MR. OLIVER:

Q. Thank you, Your Honor.

If I properly understood your answer, were you trying to draw a distinction between the members' own understanding versus a requirement of searching?

A. Yes.

Q. In a previous answer you gave a moment ago, I believe that you said that you did tell the JC-42.3 subcommittee that you would inform them of any relevant patents or applications of which you had knowledge. Did I recall your testimony correctly?

MR. PERRY: Objection, leading and misstates the record.

JUDGE McGUIRE: Sustained. You can restate.

BY MR. OLIVER:

Q. Thank you, Your Honor.

With respect to anything that you may have told the JC-42.3 subcommittee concerning what you would do, did you tell the committee that the JC-42.3 subcommittee had disclosure based solely on your own personal knowledge, or would it encompass knowledge of anyone else at IBM?

A. I believe that I told them that it would include my own personal knowledge, and any other IBMer in the room.

2453

Q. Now, again, looking at the March 1993 time frame, what other IBM representatives were in the room at JC-42.3 subcommittee meetings?

A. In order to assure that, I should look at the attendance.

Q. Let me clarify my question. My question is not with respect to this one particular meeting, but during the 1993 time frame in general.

A. There were typically four to six IBMers in the room.

Q. Were there other representatives of IBM who attended on a fairly regular basis?

A. Yes, of the four to six, four of them attended regularly, and there were a couple of others that would change.

Q. Can you please identify who those individuals were?

A. Who attended regularly?

Q. Yes.

A. I attended regularly, my alternate, Howard Kalter, attended regularly; my alternate, Mark Kellogg, attended regularly; Bill Hovis from IBM Rochester attended regularly; and Paul Coteus began to attend regularly in the latter part of this period. He was from the research center in New York.

2454

Q. You actually anticipated again my next question, I was going to ask you, perhaps starting with Mr. Coteus, can you please explain a bit who Mr. Coteus was.

A. Mr. Coteus was at the research center doing futuristic considerations for packages and DRAMs for the IBM Corporation. It was not quite basic research, but definitely research.

Q. You also mentioned a Mr. Hovis, is that right?

A. Yes.

Q. And who was Mr. Hovis?

A. Bill Hovis worked at our Rochester, Minnesota location in the application of memory to the mid-range systems that IBM shipped.

Q. And Mr. Kellogg is the same individual that you described earlier in your testimony?

A. Yes.

Q. And then you also identified Mr. Kalter?

A. Yes.

Q. Who was Mr. Kalter?

A. Howard Kalter was my manager and an IBM fellow at IBM Burlington where I worked.

Q. And then you also identified a couple of other individuals who attended from time to time?

A. All right, yes, Mr. John Szarek from our PC division in Boca Raton, Florida often attended; Mr. Dan

2455

Phipps from our workstation division in Austin, Texas, as well as Mr. Bill Caradel from our workstation division in Austin, Texas. And I can list another four or five people if you want.

Q. Mr. Kelley, what steps, if any, did you take to ensure that the other individuals that you have identified here also understood an obligation to disclose to the JEDEC 42 committee the existence of any relevant IBM patents or patent applications?

A. When we would go to a JEDEC JC-42.3 meeting, and often we from IBM would have breakfast together before the DRAM meeting, I would counsel them as a group that the onus to disclose patents and patent applications to the committee was as right on them as it was on me.

Q. And did any of these other individuals you listed previously disclose relevant patents or patent applications to the 42.3 committee?

A. Yes.

MR. OLIVER: Your Honor, may I approach?

JUDGE McGUIRE: You may.

BY MR. OLIVER:

Q. Mr. Kelley, I've handed you a document that's been marked as RX-578 for identification. Do you recognize this document?

A. Yes, I do.

2456

Q. What is this document?

A. After each trip to a JEDEC meeting, I would get back to my office and write a trip report and distribute that trip report to, in this case, to JEDEC counsel to about 50 or 60 people, all IBMers.

Q. If I could ask you to turn to page 2, please. And I would like to direct your attention to paragraph 6 on that page.

A. Okay.

Q. And if I could ask you to read that paragraph to yourself, please.

A. (Witness complied.) Okay.

Q. Mr. Kelley, what were you trying to convey to the recipients of this memo when you wrote that paragraph?

A. I was trying to convey to the IBMers that go to JEDEC meetings with me and to their management that JEDEC had a new policy of checking a box when we were aware that IBM had either patents or items that intended to become patents and that we needed to disclose patent numbers and patent application information when we were aware of it.

I was not suggesting that IBM list all of its applicable patent applications because I did not know how to do that job. I was suggesting here that we would

2457

give the JEDEC committee all published patent information, and that those in attendance at the meeting needed to alert the committee when they knew of patent applications and get them on the list.

Q. Were you intending to say in this paragraph that IBM would not provide JEDEC with applicable patent numbers?

A. No, this has to do with patent applications. I meant this to be patent applications, not patent numbers. We would provide patent numbers, and we did provide patent numbers. My concern is that applications that were in process could not be determined by me unless I was aware of them.

Q. And did you intend to inform other representatives at IBM that IBM would not disclose relevant patent applications to JEDEC?

A. Well, I was trying to let the IBM people who were on distribution know that an IBM application -- a patent application list was untenable, but that where I knew the information, I would disclose it. I think that implies that if they told me that I could take it to the committee if I knew.

Q. And Mr. Kelley, if the portion of that paragraph that begins, "Note," I see that you say, "I do not suggest that IBM list applicable patent numbers. Such a

2458

list could be construed as complete when it is not." What, if any, was the significance of you using the word "list?"

A. We have several occurrences where we have disclosed patent and patent application material. That was not a concern of mine. The concern of mine was the creation of a list that could be construed as complete for the whole IBM Corporation.

Q. Why was the creation of a list be construed as complete for the whole IBM Corporation be a concern to you?

A. Because I did not know what was going on at the research center in Tokyo and Switzerland and Israel and England and even Yorktown Heights, New York, or the Almaden Labs in San Jose, California, let alone the development labs at the systems level that I mentioned before. There was just no way that I could know all of the patent application information that was going on.

MR. OLIVER: Your Honor, may I approach?

JUDGE McGUIRE: You may.

BY MR. OLIVER:

Q. Mr. Kelley, I have handed you a document that has been marked as RX-420 for identification. Do you recognize this document?

A. Yes, I do.

2459

Q. What is this document?

A. This is a memo from me and I'm copying the JEDEC office. And I see where it says who it's to, but I was sending it to the JEDEC office.

Q. And what would to Mr. Ken McGhee at the JEDEC office?

A. Yes.

Q. If I could direct your attention to the subject line reads, "BGA Patent/License Rights." Do you see that?

A. Yes.

Q. What did BGA refer to?

A. Ball grid array.

Q. What is a ball grid array?

A. BGA is a package type. Most of the DRAM packages that we're used to seeing have leads on them, a BGA has solder balls instead of leads, and there was a presentation at JEDEC on a DRAM with solder balls or BGA.

Q. If I could ask you to turn now to the second page. And this appears to be a document sent to a Mr. Jim Townsend. Is that correct?

A. Yes.

Q. And again, "Subject BGA Patent/License Rights."

A. Yes.

2460

Q. Mr. Kelley, can you please explain how it came about that you were sending this document to Mr. Townsend?

A. Yes. There was a proposal by Motorola to offer as an optional package for a synchronous DRAM a BGA package. Motorola was asked in the meeting if they had patents or patent applications under proposed idea on the use of BGA. I was then asked if I knew if IBM had patents on BGA, and I told the committee I would have to go back and do an IBM search of the patent base to find out.

Q. Did you, in fact, go back and do a search of the IBM patent base?

A. Yes, I did.

Q. And what did you learn?

A. We uncovered four to 5,000 patents that we held on BGA that covered a period of over 30 years. I asked the intellectual property law office at my location to generate abstracts on those patents, and I went through about 300 of those abstracts and determined that the patents that IBM had generated over the 30 years applied to a ceramic BGA package and I was aware that the community was not interested in a ceramic BGA package, however the trigger at the IPL office caused the IPL office great consternation, because they were concerned

2461

that these 5,000 IBM patents were going to be offered to the committee, and they would have to do handstands to try to resolve all the patent issues, and so I was asked to send this memo to Jim Townsend who was the chairman of the committee notifying him that our IPL people did not intend to resolve the patent licensing of these 5,000 patents during the committee meeting.

Q. I believe you already stated that you understood that JEDEC was not interested in ceramic packaging. What was the basis for that understanding?

A. After this letter was sent, we had the next meeting of JC-42-3, and I took the list of patents with me and said, we can put these 5,000 patent numbers on the list if -- on the tracking list if you desire. From what I can tell they're ceramic packages and the committee said that they were not interested in a ceramic package for the DRAM.

Q. What type of packaging was JEDEC considering at that time?

A. It was a plastic package, BGA.

Q. At that time, did you have an understanding why IBM was preferring a plastic package as opposed to a ceramic package.

A. Yes. The paramount parameter for DRAM throughout all time is low cost. A typical plastic

2462

package that we built in Burlington was on the order of 50 cents to a dollar, these ceramic packages were on the order of $10. And the committee knew that they could not afford this kind of package increase to a DRAM application.

Q. At that time, what steps, if any, did you take in order to prepare for the possibility that JEDEC might have been interested in following up on some or all of these patents?

A. I was prepared at the meeting to deliver the 5,000 patent numbers and put them on the tracking list, and I was delivered -- I was ready to offer a licensing arrangement where each one of the companies that was interested could work with my IPL office on licensing.

Q. Did you take any steps to prepare for the possibility of follow-up questions?

A. At the meeting, the committee said they weren't interested in these patents, and the item dropped. I didn't have any further interest from the committee.

MR. OLIVER: Your Honor, may I approach?

JUDGE McGUIRE: Go ahead.

BY MR. OLIVER:

Q. Mr. Kelley, I handed you a document that should be marked as JX-17 for identification, but it appears as though the number has been cut off on this particular

2463

document. I believe it is listed on our exhibit list, though, as JX-17.

Mr. Kelley, do you recognize this document?

A. Yes, I do.

Q. What is this document?

A. This is the minutes of the JC42.3 meeting in September of 1993.

Q. Were you present at this meeting?

A. Yes, I was.

Q. If I could ask you to turn, please, to page 6. If we could blow up on paragraph 9.4, the bottom part of this page. The caption here reads, "JC-42.3-93-8216M x4 DRAM w/4 CT Ballot." Do you see that?

A. Yes, I do.

Q. Were you present at the meeting at the discussion of this item?

A. Yes, I was.

Q. And did you observe or participate in the discussion?

A. Yes, I did.

Q. Did you have an understanding of the discussion at the time it occurred?

A. Yes.

Q. First, can you please explain what this item referred to?

2464

A. This was a DRAM ballot. It was on the 42.3 committee, and it had the title of a -- I'm trying to read that -- I think it's CE ballot.

Q. Are you familiar with the term quad CAS?

A. Quad CAS, yes.

Q. Did this have any relationship to the quad CAS technology?

A. Yes, this was one of the quad CAS ballots, that's what the /4 means, it's a /4 organization.

Q. And the caption contains the word ballot, underneath that it reads, the vote was: 16 yes, 1 no (Micron), four abstensions." Do you see that?

A. Yes, I do.

Q. Now, typically the majority of the ballot required two-thirds approval. Is that correct?

A. That's correct.

Q. And did that then indicate that this item passed?

A. No, it did not.

Q. Why not?

A. Because patent issues are almost terminal for a ballot to pass. If a patent issue comes up, unless it's able to be resolved at the meeting, it will -- the ballot will be put on hold or it will fail.

Q. Do you have a recollection as to how patent

2465

issues came up, at least with regard to the quad CAS technology at this meeting?

A. Yes, I do.

Q. Can you explain how the patent issues came up with respect to quad CAS technologies at this meeting?

A. Yes, Micron Corporation notified the committee that Texas Instruments had asserted a patent claims against them and that they were going to charge license fees and royalties for the use of the concept of quad CAS.

Q. What was the reaction by the members at this meeting?

A. I believe the reaction was surprise.

Q. Let me now direct your attention a few lines below that, there's a line that reads, "VLSI moved to put this proposal on hold until the patent issue is resolved. Toshiba seconded. Motion passed unanimously." Do you see that?

A. Yes.

Q. Can you explain in a little bit more detail what actually happened in connection with that sequence of events?

A. When the ballot went on hold, TI was asked to comment on the patent issue that had come up from Micron and their comment was no comment. And so the hold held

2466

and this ballot was not going to go anywhere until this patent issue got resolved.

Q. So, that reference is with respect to the ballot item that's referenced in the caption above?

A. Yes, that hold means that the ballot was on hold.

Q. If I could ask you to turn, please, to the next page on page 7.

A. Okay.

Q. And if we could please blow up the top half of this page. If I could direct your attention to the second paragraph beginning Micron, it reads, "Micron moved that all x4 with four cast proposals should be rescinded from JESD-21 C because of patent concerns. Samsung seconded the motion." Could you please explain what was being discussed in connection with that paragraph.

A. The patents that we were not aware of on the quad CAS concept had been disclosed in the ballot number that we just saw, and what was being proposed in this motion was that all quad CAS standards that we had already passed would be withdrawn or rescinded.

Q. If I could direct your attention two paragraphs further down, the paragraph beginning IBM. Do you see that?

2467

A. Yes, I do.

Q. By the way, is that reference to IBM a reference to you or a reference to another IBM representative present?

A. This would have been a reference to me.

Q. It reads, "IBM moved to issue a ballot to rescind the quad CAS parts. Micron agreed to this change to their motion. Samsung seconded. The vote was unanimous." Do you see that?

A. Yes, I do.

Q. Can you explain to us why the ballot was moving to rescind the quad CAS parts.

A. I did not think it was enough for the committee to wait until the next meeting to decide whether we should ballot a recision of the existing standards had already passed. I was basically making a motion to create a ballot to rescind those ballots at this meeting. And the motion passed. In other words, I was accelerating the process.

Q. Okay, thank you.

Your Honor, may I approach?

JUDGE McGUIRE: Go ahead.

BY MR. OLIVER:

Q. Mr. Kelley, I have handed you a document that is marked as JX-18. Do you recognize that document?

2468

A. Yes, I do.

Q. What is this document?

A. This is the minutes of the 42.3 meeting that was held in December of 1993.

Q. Were you present at this meeting?

A. Yes, I was.

Q. If I could ask you to turn, please, to page 7 of JX-18. And I would like to direct your attention to paragraph 7.5 towards the bottom of the page.

A. Okay.

Q. There's a caption here that reads, "JC 42.3-93-136 withdraw quad CAS 1M, 4M, 16M, DRAM standards item 557." Do you see that?

A. Yes, I do.

Q. Now, were you present at this part of the discussion of the meeting?

A. Yes, I was.

Q. And did you observe or participate in this discussion?

A. Yes.

Q. And did you understand it at the time?

A. Yes.

Q. The item that I draw your attention to at 7.5, is that the same item that we looked at in the previous set of minutes?

2469

A. Yes.

Q. The vote was, reading now underneath that reading, the vote was 13 yes, two no, seven abstensions. Do you see that?

A. Yes.

Q. Now, was that the final approval of that ballot?

A. I believe it was, yes.

Q. Then it continuous, "Mr. Kelley gave some background." That I assume refers to you.

A. Yes.

Q. Do you recall what background you gave at this meeting?

A. I believe I said to the committee that here was an instance where the committee had spent a fairly lengthy period creating these quad CAS standards, and sitting among us was a patent holder on a concept that was going to apply to what we were approving over a period of probably one to two years. And I was basically notifying the committee that we needed TI, who was the holder of these patents, to resolve the issue with Micron and make sure that this patent dispute that had occurred between the two companies got resolved.

Q. If I could direct your attention now towards the end of that paragraph, it states, "A letter was read from Micron to Mr. Gordon Kelley dated November 30 that

2470

was a response to the TI letter (see attachment P)." Now if I could ask you to turn to the next page, page 8.

A. Okay.

Q. Perhaps we can just blow up the entire page. Is that large enough or would you like to blow it up further?

A. That's fine, I can read the paper.

MR. OLIVER: Your Honor, is that large enough for you?

JUDGE McGUIRE: That's fine.

BY MR. OLIVER:

Q. At the top of this page, it reads, "Mr. Kelley noted that the letter from TI does not address the key issue that the committee was not informed of TI's patent." Do you see that?

A. Yes.

Q. Do you recall making a statement along these lines to the committee?

A. Yes, I do.

Q. And what did you intend to convey with that statement?

A. That there had been an expectation of disclosure by the TI representative who was aware of this patent and that disclosure had not occurred, that the committee had not had the opportunity to avoid that patent and

2471

that this resolved in litigation which was a serious problem for the committee.

Q. If I could direct your attention down a little more than halfway is a comment from Samsung there. Do you see that?

A. Yes.

Q. Samsung: "We are reluctant to vote yes because we do not think TI is following the patent policy (see attachment R)." Do you see that?

A. Yes.

Q. What was your understanding at the time of what Samsung was conveying there?

A. My understanding was Samsung's concern for the nondisclosure of a patented item by someone who sat among us while that standard was going through the approval process on our committee.

Q. Let me direct your attention two paragraphs further down which reads, "As a side issue," do you see that?

A. Yes.

Q. "As a side issue, IBM noted that in the future they will not come to the committee with a list of applicable patents on standards proposals. It is up to the user of the standard to discover which patents apply." Do you see that?

2472

A. Yes, I do.

Q. Do you recall making a statement along these lines to the 42.3 subcommittee at this meeting?

A. Yes. This is the same issue that I mentioned before where I was asked if IBM would deliver all of the patent information and patent application information on this concept for the whole IBM Corporation, and I again argued that I cannot guarantee any list that I generated, I would only assure them that I would deliver what I was aware of.

Q. I note again that statement of the side issue, IBM noted that in the future they will not come to the committee with a list of applicable patents on standards proposals. Now, what, if any, is the significance of the term "list" in that sentence?

A. The size of the IBM Corporation does not allow me to know what is going on all over the world all at the same time, so I was really concerned about what was going on that I did not know that might cause somebody a real problem when I just had no way of finding out what that was until the patent was issued.

Q. If I could direct your attention then to the next sentence, "It is up to the user of the standard to discover which patents apply." If I could just withdraw that question and just ask generally with respect to

2473

that entire paragraph, were you intending to debate the 42.3 committee that you would not disclose to the 42.3 subcommittee patents or patent applications relative to JEDEC work of which you had knowledge?

A. No.

Q. If I could direct your attention to the next paragraph that begins Sanyo. And the last couple of lines there reads, "If TI has knowingly and intentionally violated the EIA/JEDEC patent policy, EIA may need to consider additional actions/discussions with TI." Do you see that?

A. Yes, I do.

Q. At the time that you were participating in this discussion, did you have an understanding of what Samsung was referring to?

A. Yes, I don't know if it was at this meeting or the next one, Sanyo made a motion to have TI removed from the committee.

Q. Based on your experience in attending the 42.3 subcommittee and your experience as chairman, is that something that happened frequently?

A. This is the only occurrence of a company being asked that question.

MR. OLIVER: May I approach, Your Honor?

JUDGE McGUIRE: Yes.

2474

BY MR. OLIVER:

Q. Mr. Kelley, you've been handed a document that has been marked as CX-2384 for identification. Do you recognize this document?

A. Yes, I do.

Q. What is this document?

A. This is a letter that I wrote to Buf Slay, who was the Texas Instruments council member.

Q. If I could direct your attention to the first paragraph that reads "The first proposal for quad CAS parts." Do you see that?

A. Yes, I do.

Q. Is that the same technology that had been considered in the September and December 1993 JEDEC meetings that we just looked at?

A. Yes.

Q. If I could direct your attention to the second paragraph, and I would actually like to begin the second sentence. That reads, "If we have companies leading us into their patent collection plates, then we will no longer have companies willing to join the work of creating standards, i.e. widely used designs." Do you see that?

A. Yes, I do.

Q. What did you intend to convey in that sentence?

2475

A. In my mind, the first requirement of standards organization patent policies with regard to patents is to avoid patents, and therefore the impetus to make sure that the standards committee is aware of all technical information that might be patented for the consideration of avoidance.

What I think I was telling Buf was, IBM would not participate in a standards organization where patent information was being hidden while the process of approval went on, and if that's what Texas Instruments was going to do, then we wouldn't participate with them.

Q. If I could continue on to the next sentence, that reads, "In fact, widely used parts will come more from patent protection than good design." Do you see that?

A. Yes, I do.

Q. What did you mean to convey in that sentence?

A. I was very concerned that if we could only design the simplest of standards, because companies were not disclosing their technical information on patents, then we would not end up with good designs, that we would end up with mediocre designs for fear of having patent issues like the one that we had here with the quad CAS.

Q. If I could direct your attention to the first

2476

sentence of the next paragraph, it reads, "Our DRAM work," I can't quite read that next word.

A. I think it's on.

Q. Thank you. "Our DRAM work on JC-42 is particularly exposed." Do you see that?

A. Yes.

Q. Why did you believe that the DRAM work on JC-42 was particularly exposed?

A. In 1994, the DRAM business was approaching $50 billion, and the reason that the DRAM was so popular was because of the work that JEDEC had done, in my opinion. We could buy DRAMs that were interchangeable from 10 or 20 different companies, and because that level of business was so huge in dollar value, it was absolutely paramount that we understand the requirements for a DRAM standard. The first requirement of a DRAM is low cost. If you cannot make a DRAM low cost, then you won't be in the business. DRAM low cost was paramount before our eyes.

Q. Now, if I could return to the first sentence of the second paragraph that reads, "I am and have been concerned that this issue can destroy the work of JEDEC." Do you see that?

A. Yes, I do.

Q. What did you intend to convey in that sentence?

2477

A. If companies like IBM are going to leave the process of standardization out of fear of patented material that is not disclosed during the process of standardization, then the standardization process will be so weakened that it will have very little meaning. It will be destroyed.

MR. OLIVER: May I approach?

JUDGE McGUIRE: Go ahead.

BY MR. OLIVER:

Q. Mr. Kelley, you have been handed a document that has been marked as JX-19 for identification. Do you recognize this document?

A. Yes.

Q. What is this document?

A. This is the minutes of a JC-42.3 committee meeting in March of 1994.

Q. Were you present at this meeting?

A. Yes.

Q. If I could direct your attention, please, to page 4.

A. Okay.

Q. If we could -- I'll wait for the document to come up on the screen. If we could blow up the lower two-thirds of that page, beginning with Patent Policy. Underneath Patent Policy, if I could direct your

2478

attention two paragraphs down, that begins, "TI presented a four page clarification to the committee."

Do you see that?

A. Yes, I do.

Q. And again, were you present for this portion of the discussion at this meeting?

A. Yes.

Q. And did you observe or participate in this discussion?

A. Yes.

Q. And you understood the discussion at that time?

A. Yes.

Q. Now, did this relate to the same quad CAS incident that was discussed in the September and December 1993 meetings?

A. Yes.

Q. If I could direct your attention down to the next paragraph that begins Sanyo. That reads, "Sanyo moved to have TI withdraw from the committee activity until the legal aspects of the proposal are reviewed. The motion was tabled."

Do you see that?

A. Yes, I do.

Q. Is that the motion that you referred to a couple of moments ago?

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A. Yes, that's the one I had in mind.

Q. If I could direct your attention to the paragraph at the very bottom of that page that reads, "Applicability of patents to use of JEDEC standards was discussed. The issue is warning, IBM noted." Do you see that?

A. Yes, I do.

Q. Now, the reference to IBM there, is that a reference to you or is that a reference to another IBM representative?

A. That would be to me.

Q. So, you made that statement?

A. Yes.

Q. What did you intend to convey when you made that statement?

A. I wanted to convey to the committee the importance of what we had just seen, which was a series of standards had been created in the past, and there was patent material that was held by a company, and the member who was listed on the patent was sitting in the room. He did not disclose to the committee, so we could not avoid the patent that he was listed on, and the result was we rescinded the created standards, held the passed ballots and had gotten to the point of motioning the company to be removed from committee.

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I was basically emphasizing to the committee the need to disclose patents.

Q. If I could direct your attention back up to the paragraph beginning TI. Do you see that?

A. Yes.

Q. It reads, "TI presented a four page clarification to the committee on their interpretation of the patent policy (see attachment E)." Do you see that?

A. Yes, I do.

Q. Mr. Kelley, I believe the letter is actually attached with attachment E, I believe we have a clearer copy.

Your Honor, may I approach?

JUDGE McGUIRE: Yes, go ahead.

BY MR. OLIVER:

Q. Mr. Kelley, I've handed you a document that's been marked as CX-352. Do you recognize this document?

A. Yes, I do. This was a document that TI showed at the meeting that we just spoke of.

Q. If I could direct your attention to the first paragraph, "Texas Instruments believes that the JC-42.3 committee on RAM memories should review and clarify its interpretation of the JEDEC patent policy." Do you see that?

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A. Yes, I do.

Q. Now if we could go to page 3. And at the bottom of page 3 is a caption Motion. And the statement underneath that. At the time that you saw this document in the March 1993 -- excuse me, March 1994 JC-42.3 subcommittee meeting, what did you understand Texas Instruments to be trying to do with this document?

A. I understood that they were trying to request of the committee a change in the policy because they didn't believe that the policy was understood well enough as they understood it.

Q. Mr. Kelley, if I could ask you to turn, please, back to JX-19, these are the JC-42.3 subcommittee meeting minutes that we looked at just a moment ago.

A. Okay.

Q. And if I could ask you to turn, please, to the -- to page 5.

A. Okay.

Q. And if we could then blow up the top portion of that page. The beginning of this paragraph reads, "The committee was asked if the patent policy is clear. The committee felt it was clear." Do you see that?

A. Yes.

Q. And at the time that you were observing this discussion, was it your belief that the JEDEC patent

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policy was clear?

A. Yes.

MR. OLIVER: May I approach, Your Honor?

JUDGE McGUIRE: Yes.

BY MR. OLIVER:

Q. Mr. Kelley, I have handed you a document that has been marked as CX-355 for identification.

A. Yes.

Q. Do you recognize this document?

A. Yes, I do.

Q. What is this document?

A. This is a memo from Ken McGhee, who was secretary to JC-42 out of the JEDEC office to the JC-42 committee members.

Q. Do you recall seeing this document in about the May 1994 time frame?

A. Yes.

Q. At that time, did you understand this document to be a response to the Texas Instruments letter that we looked at a moment ago?

A. Yes.

Q. In other words, to clarify for the record, as of about May 1994, did you understand CX-355 to be a response to CX-352?

A. Yes.

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Q. If I could direct your attention to page 2 of CX-355.

A. Okay.

Q. And if I could direct your attention particularly to paragraph 2 on this page. That paragraph reads, "Written assurances must be provided by the patent holder when it appears to the committee that the candidate standard may require," the words may require are underlined, "The use of a patented invention. It is not necessary that the committee make a factual determination that use of the patented invention is, in fact, required to meet the standard."

Do you see that?

A. Yes.

Q. Now, based on your understanding of the JEDEC disclosure policy and JEDEC patent policy, in about May of 1994, did that statement accurately reflect your understanding of the JEDEC patent policy?

A. Yes, it did.

Q. Mr. Kelley, do you recall how this whole quad CAS incident ultimately was resolved?

A. I believe that the litigation between Micron and Texas Instruments was resolved, and I believe that the ballots that were on hold were removed from hold and the ballots that were in recision were reconstituted.

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Q. With respect to the position of Texas Instruments with regard to the JEDEC patent policy and the JEDEC disclosure policy, do you recall how, if at all, that issue was resolved?

MR. PERRY: That's overbroad and vague. They say a lot of things in these four pages, the position of Texas Instruments is vague.

MR. OLIVER: You were, I believe that Mr. Kelley has a very clear understanding of the position of Texas Instruments vis-a-vis JEDEC and I believe that he can answer this question very clearly.

JUDGE McGUIRE: Perhaps he can, but not in that form. Why don't you restate.

MR. OLIVER: Okay, thank you, Your Honor.

JUDGE McGUIRE: The objection is sustained.

MR. OLIVER: May I approach, Your Honor?

JUDGE McGUIRE: Yes.

BY MR. OLIVER:

Q. Mr. Kelley, I have handed you a document that has been marked as JX-25 for identification. Do you recognize this document?

A. Yes.

Q. What is this document?

A. This is the minutes of the JC-42.3 memory committee meeting in March of 1995.

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MR. OLIVER: My apologies, Your Honor, it appears that there was a copying problem with this document. Can we go off the record for a moment?

JUDGE McGUIRE: Sure, let's go off the record.

(Discussion off the record.)

JUDGE McGUIRE: Back on the record.

BY MR. OLIVER:

Q. Mr. Kelley, if I can direct your attention to the screen, we have pulled up page 5 and we have blown up paragraph 8.3 on page 5. Do you see that?

A. Yes.

Q. And the caption reads, "Patent Statement on quad CAS." Underneath that it reads, "A letter from TI was received at JEDEC complying with the EIA patent policy. A motion from Toshiba to take the ballot JC-42.3-93-83 item 521 off hold, seconded by VLSI. The vote was unanimous." Do you see that?

A. Yes.

Q. Were you present at the meeting during that portion of the discussion?

A. Yes, I was.

Q. And did you observe that portion of the discussion?

A. Yes.

Q. Could you please explain for us a bit more

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detail what was reflected in the discussion at that meeting?

A. I understood that Texas Instruments was now in a position where they could completely concur with the JEDEC policy on patent disclosure, and assure the committee that they would disclose when they were aware of a patent or patent application material that applied to our work. They apologized for their representative who had not disclosed -- I personally know that they removed him from the committee, he did not come back, and they settled their dispute with Micron and as far as the committee was concerned, the issue was at this point resolved.

Q. Thank you. At this point, I would like to switch topics, if we could, and ask if between 1991 and 1996, whether you knew an individual by the name of Richard Crisp.

A. Yes, I did.

Q. Who was Richard Crisp?

A. I first met Richard at a special meeting of the DRAM task group in April of 1992. Richard then became the representative for Rambus basically from that time on until we didn't see Richard anymore after the end of 1995.

Q. Did you ever have occasion to discuss with Mr.

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Crisp the subject of Mr. Crisp making a presentation at JEDEC?

A. Yes, I did.

Q. Could you please explain or could you please describe the discussion you had with Mr. Crisp on that subject?

A. At the May meeting in 1992, Richard had come to me before the beginning of the DRAM task group and he notified me that he had a new DRAM proposal that he wanted to present to the committee for Rambus, and asked if he could get on the agenda. I had been warned just before this meeting that there might be patent issues on the Rambus DRAM, and so I asked Richard if he was aware if there were patent or patent application that applied to the proposal that he was going to make, and he told me that he was aware that there was. I asked him if he agreed to the JEDEC policy on disclosure, and licensing, and he told me that he could not agree for Rambus on the policy for licensing.

Q. What happened next, if anything, with respect to the possibility of Rambus making a presentation?

A. I told Richard that he needed to go back to his company and get agreement on the policy and as soon as he had agreement on the policy he could present.

Q. Did Mr. Crisp ever come back to you on that?

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A. Yes, he came back to me and I don't remember which meeting it was, but it was approximately a year later, and made the same request to me privately before the beginning of the DRAM task group, and I asked him if he had resolved the issue on abiding by the JEDEC patent policy, and he told me that they still did not agree with the patent policy on the information in their proposal.

And so this time I told him that because this was a second occurrence, I do not feel that I should make the decision alone as the chairman. I asked him if I could take the decision to the committee. He agreed with me that I could, so when I opened the DRAM task group meeting up, I asked the committee if they wanted to see a Rambus proposal for a new DRAM, but that Rambus would not agree to the JEDEC patent policy, especially regarding licensing, and first of all the committee was wondering what the patent information was, and secondly the committee decided that they did not want to see the presentation.

Q. Mr. Kelley, I would like to be very careful to ensure that the record is clear on this point. Did Mr. Crisp say to you that Rambus would not -- excuse me, strike that.

When you made a reference to Rambus did not

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adhere to the JEDEC patent policy, was Mr. Crisp saying to you that Rambus did not agree with the JEDEC disclosure policy or with the JEDEC licensing policy or was it something else?

A. He had specified to me that the problem was with the licensing policy.

Q. Did Mr. Crisp say anything to you to indicate that Rambus disagreed with the JEDEC disclosure policy?

A. No.

Q. Did Mr. Crisp say anything to you to indicate that Rambus would not comply with the JEDEC disclosure policy?

A. No.

MR. OLIVER: Your Honor, perhaps we can go off the record for a moment.

JUDGE McGUIRE: All right, off record.

(Discussion off the record.)

JUDGE McGUIRE: On the record.

MR. OLIVER: My colleagues thankfully have reminded me that there are certain documents that we've used today that we do need to move into evidence. I am going to try to find what they are.

MR. PERRY: Could I suggest that we start with this, it would make more sense if they were organized overnight.

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MR. OLIVER: That's fine, if we can start with that tomorrow morning. Second, Your Honor, I have been handed a note with respect to the issue of the motion for reconsideration.

JUDGE McGUIRE: Yes.

MR. OLIVER: That opposing counsel filed yesterday, and we would like to request an extension, if we could, until next Tuesday to respond to that motion.

JUDGE McGUIRE: Any opposition by opposing counsel?

MR. STONE: No, Your Honor.

JUDGE McGUIRE: All right, thank you, Mr. Stone. All right, and as I stated yesterday, that earlier order has been stayed until this issue is resolved, so very well, we will give you until next Tuesday.

MR. OLIVER: Thank you very much, Your Honor.

MR. STONE: Just on the subjects of that motion, one of the issues that you discussed yesterday was how to handle a request for interlocutory review. Since that's something that you can sort of decide on our own without us making a motion for it, I think as you go through the motion and look at it, that might be something that you either ask us to address or don't ask us to or resolve on your own. By that I don't mean to say that relieves us of any obligation, we might have to

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file such a request, but all I wanted to say was that as you're looking at the issues, I think it's clear you have the authority just on your own initiative to make a decision in that regard and I want to just suggest that.

JUDGE McGUIRE: I probably do that have authority, I hadn't contemplated that inherently, Mr. Stone, I had intended depending on the outcome of my up coming order, that the parties, if they felt so inclined, would then file an application or a certification for an interlocutory appeal, and I hadn't contemplated doing it sua sponte, but --

MR. STONE: I'm not meaning to shift that from us to you if that would be the case, I just wanted to mention that.

JUDGE McGUIRE: Very good. Anything else we need to discuss?

MR. OLIVER: No, Your Honor.

JUDGE McGUIRE: If not, this hearing is adjourned and we will convene tomorrow at 9:30 a.m. Thank you very much, everyone have a good evening.

(Whereupon, at 5:01 p.m., the hearing was adjourned.)

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C E R T I F I C A T E O F R E P O R T E R

DOCKET/FILE NUMBER: 9302

CASE TITLE: RAMBUS, INC.

HEARING DATE: MAY 20, 2003

I HEREBY CERTIFY that the transcript contained herein is a full and accurate transcript of the notes taken by me at the hearing on the above cause before the FEDERAL TRADE COMMISSION to the best of my knowledge and belief.

DATED: 5/21/03

_____

Sally Jo Bowling

C E R T I F I C A T E O F P R O O F R E A D E R

I HEREBY CERTIFY that I proofread the transcript for accuracy in spelling, hyphenation, punctuation and format.

_____

Sara J. Vance