1 THE COURT: Let's get the jury. 2 MR. HOLLEY: Your Honor, before the jury comes in, 3 can I make the observation that Microsoft filed a motion in 4 limine on whether or not Novell could pursue the claim that 5 PerfectOffice is middleware, and that motion was granted. So 6 I'm not sure why we're talking about PerfectOffice being 7 middleware. That theory is foreclosed. 8 THE COURT: I've wondered about that. In fact, my 9 recollection -- I was confused. 10 Mr. Schmidtlein. 11 MR. SCHMIDTLEIN: He's going to just describe the 12 various technologies and why they're middleware. I think 13 we've heard testimony in the case that --14 THE COURT: I think -- I think -- frankly I think 15 that the objection is well taken. I'm going to reconsider and 16 reverse myself. For purposes of this only, I think now that 17 we're here to explain the technology, you're able to do that. 18 So to the extent that -- I'm not overruling it completely, but 19 I'm going to allow testimony about it. 20 I understand your objection. I was curious with 21 that, too. But I think the jury has seen it up there, and I 22 think we just ought to continue. I think to explain why it's 23 middleware, I understand it may not be relevant, and that was 24 my ruling.

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

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(Whereupon, the jury returned to the court proceedings.)

THE COURT: Excuse me. I think I interrupted you when you were describing AppWare and OpenDoc as to why you considered them middleware.

THE WITNESS: You remember better than I do.

THE COURT: You want to ask him your question?

- Q. BY MR. SCHMIDTLEIN: Describe for the jury what AppWare and OpenDoc are and why they are in your definition middleware.
- A. AppWare is an application framework that defines a set of application programming interfaces which if a programmer uses those AppWare defined program interfaces his application will be portable across multiple platforms.

The OpenDoc technology is similarly defined as a set of interfaces that permit applications to work together to, we call it compound documents. So what that means is you have a word processing application and you're typing away in text and you want to include a graph that came from your spreadsheet program so you want to put it into the -- into the word processing program and then you want to edit the graph inside the word processing program, previously you would have to go, before this kind of technology would have to go back to the spreadsheet program, make your changes in the spreadsheet program and copy the graph back into the word processing

1 program.

OpenDoc and COM technology, which is Microsoft analog, allowed you to do in-place editing and allowed multiple applications to work simultaneously on the document. And those permitted application developers, because OpenDoc was cross-platform you could perform those kinds of functions across multiple platforms.

- Q. And did AppWare and OpenDoc expose APIs that would allow software to be written to qualify on those APIs?
 - A. Yes.
- Q. The last example you have on your slide there is PerfectOffice, and the jury has heard already the term of PerfectOffice. Can you sort of summarize what PerfectOffice was?
- A. Well, PerfectOffice was a suite of programs and technologies and development tools that Novell designed and built to allow users as well as independent software vendors to develop applications that would work with Novell's Office productivity applications and to develop solutions that would appeal to, for example, law offices that would include special software for special applications that worked with the word processer and the e-mail programs to do additional things beyond what a standard Office product application would do.

THE COURT: Ladies and gentlemen, let me tell you at this point, and I don't know if this will be helpful to

- you. But for legal reasons, I may not permit Novell to pursue a claim regarding PerfectOffice. That's something I just have to figure out. Rather than kind of sort that out now, though, I'm allowing the testimony as to why Mr. Alepin thinks it's middleware. That's something I've got to decide. That's in my lap. I see no reason why not to have the witness say why he considers it middleware.
- Q. BY MR. SCHMIDTLEIN: Well, in terms of the number of APIs exposed and the functionality they provided, can you compare Netscape Navigator with WordPerfect plus AppWare as those products existed in the mid 1990s?
- A. The combination of WordPerfect and AppWare exposed more programming interfaces numerically than what Netcape Navigator did.
- Q. Okay. And the same question with respect to PerfectOffice.
- THE COURT: I think I'm going to sustain that.

 Don't talk about PerfectOffice at this point, in light of my prior ruling.
- Q. BY MR. SCHMIDTLEIN: Mr. Alepin, did you have experience with sort of development in sales with middleware as part of your professional experience?
 - A. Yes, I do.
 - Q. Okay. Can you explain that?
 - A. Yes. I was the general manager of Fujitsu software

division and particularly its middleware division. So I was the general manager for North America and Europe of middleware software business for Fujitsu. That included managing the software development, the sales, support and planning for that stack of products.

Q. Switch subjects here, and let's go to the second opinion. Microsoft had no legitimate technical justification for de-documenting and withdrawing support for the NameSpace extension APIs.

The jury has heard already a fair amount of the NameSpace extension APIs. Can you describe those generally?

- A. The NameSpace APIs were a set of APIs, part of the shell extension APIs in Windows 95 and beyond that permitted application programmers to develop applications that allowed for the addition of new types of information sources to be included in their view -- in the view provided by the shell of data sources available for the user.
 - Q. And who developed the NameSpace extension APIs?
 - A. Microsoft's developers.
- Q. And can you tell the jury roughly when the NameSpace extension APIs were first shown to entities external to Microsoft?
- A. From the record, I believe the first instance would have been in or around April of 1993.

THE COURT: Mr. Alepin, again let me ask you, and

1 again, the fact that I'm asking these questions don't draw any 2 significance. I'm just trying to figure out the answers. I 3 think I now understand the concept of the NameSpace extensions 4 and the shell. But to use that analogy used before, what it 5 does is as opposed to setting on top of an application on the 6 top of the program, what the NameSpace extension allowed was, 7 for example, Spell Check, to look through a variety of data 8 sources of information and Quick Find or something of that 9 nature. Is that the significance of the NameSpace extensions 10 combined with the shell? I'm just asking for my own 11 understanding and perhaps for the jury's, as well. Or if 12 that's wrong you can tell me. 13 THE WITNESS: Well, I don't know the context. 14 Maybe I could try a different analogy. 15 THE COURT: Try to use an analogy just to help us 16 along. 17 BY MR. SCHMIDTLEIN: Talk into your microphone. Q. 18 THE COURT: I hope -- I'm really just trying to 19 understand for all of us. 20 THE WITNESS: So if you would think -- I don't know 21 if you used or were familiar with Windows 95 originally. But 22 Windows 95 and the shell, as it came --23 THE COURT: You can tell the jury. Don't tell me. 24 THE WITNESS: Okay. As Windows 95 came out of the

box, it included a set of information sources, I call them

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information sources. And so there was the My Computer icon, which was an information source that when you looked inside of it it included the information on your disk drive, for example. The Network Neighborhood icon was part of the information sources, and that included the other computers to which you were connected. And there were others of these information sources.

You might want to have your music as an information source, and you might want to see that where -- on your desktop, and you might also want to see it when you look inside the Explorer. The Explorer was the window that -- it was part of the shell, but it was the panel through which you were going to look at the information on your computer. Obviously you could use icons and shortcuts. But if you wanted to see all the things, all of the information sources that were available to you and work with them, you would look at the Explorer and there you would find My Computer on your desktop. You would find Network Neighborhood. You would find the Briefcase. You would find all these other sources listed. But if you wanted to see your music, too, well music NameSpace extensions, you could put My Music up there. And when you clicked on the My Music button on the right-hand side of the screen, you would then be able to browse through your music.

And you might not want to browse through your music as a set of files, but rather as album covers or some other

information about the individual music elements, not to treat them as files, but to treat them as music in meaningful ways to use the NameSpace browser function that was developed to display the music information would show you different information, not file information, but information that was important to music, different from if you wanted to have your pictures up there. NameSpace browsing could add My Pictures information source and show information about your pictures in the right-hand side of the window.

So using the NameSpace extensions, I can add information sources to the list of sources that are available, and I can provide unique ways to view that information on the right-hand side without having to launch programs, without having to launch iTunes. For example, I can look at My Music and see who is the artist, what was the rating, how long the music clip is and things like that, things that I'm not interested in seeing when I click on My Pictures. I don't care how long the picture is. I care about when the picture is taken. Different information for different information sources. Did that help?

THE COURT: (Indicates by nodding head up and down.)

Q. BY MR. SCHMIDTLEIN: In reviewing the record in this case, did you find evidence that Microsoft had as early as 1993 been, to use the NameSpace extensions for future

Microsoft products?

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MR. HOLLEY: Your Honor, I object to this, having an expert witness testify about what the record evidence is when these points are inconsistent with my understanding of what the evidence produced this far is. I thought that was exactly what we weren't going to do.

MR. SCHMIDTLEIN: These are I think background for context and facts. These are consistent with what the record is in this case.

THE COURT: Well, ask him what his opinion is. And then Mr. Holley can explore the basis of his opinion.

- Q. BY MR. SCHMIDTLEIN: Mr. Alepin, in your view of the record, did you find documents or testimony that demonstrated that Microsoft's Capone product was using the NameSpace extension APIs in April 1993?
 - A. Yes, I did.
 - Q. And what is Capone?
- A. Capone was the code name for Microsoft's mail program that was to be part of the Windows 95 before coming Windows 95 package.
- Q. And the second bullet up there says, Microsoft plans in 1993 to ship an extensible shell in Microsoft Office 1996.

Did you find documents or testimony in this case that demonstrated that Microsoft had a plan in 1993 to ship an

1	extensible shell in Microsoft Office, the version that was
2	going to be 1996?
3	MR. HOLLEY: Your Honor, can I have a standing
4	objection to this entire
5	THE COURT: You can. And I wouldn't phrase the
6	question quite that way, but that's okay. You can answer.
7	You have a continuing standing objection. But don't you
8	all know the ground rules. I don't want simply opinions that
9	are in the documents. Go ahead.
10	THE WITNESS: There are documents that discuss the
11	inclusion of extensible shell in the Office 96 product in the
12	record that I've examined.
13	Q. BY MR. SCHMIDTLEIN: Did ISVs express their desire
14	to get access to the NameSpace functionality?
15	A. Yes, they did.
16	Q. And in terms of the record that you reviewed with
17	respect to ISVs wanting the NameSpace functionality
18	THE COURT: Just ask him what his opinion is. Yes,
19	he did. What's the basis for the opinion?
20	MR. SCHMIDTLEIN: Okay.
21	Q. BY MR. SCHMIDTLEIN: What's the basis for your
22	opinion that ISVs wanted NameSpace extension functionality?
23	A. There is correspondence in the record that recaps
24	interactions between Microsoft employees and independent

software vendors and between Novell or WordPerfect employees,

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two separate sides that reflect a desire -- a desire on the part of ISVs to obtain that functionality and the Microsoft's reporting that ISVs have that desire.

- Q. And the documents here, the PX references here, PX 64 and PX 105, are these some of the documents that you found and you relied upon for these opinions?
 - A. That's correct, yes.

MR. SCHMIDTLEIN: And, Your Honor, these documents are already in evidence.

THE COURT: That's fine.

And, ladies and gentlemen, this is a problem for me, not for you. But I really don't think that the opinion adds anything to the extent that there is already documents in evidence. Of course, counsel can refer to that in order to ask questions on that. But I'm not sure that an opinion about what's in the document adds anything at all clearly, unless you all know what's going on. But, frankly it's going to be up to counsel to argue about what's in this.

- Q. BY MR. SCHMIDTLEIN: Let's go to the next slide.

 Now, did Microsoft document the NameSpace
 extensions in June 1994?
- A. Microsoft provided partial documentation of the NameSpace APIs and the shell extensions in June 1994.
- Q. You said the M6 beta shipped in June of 1994. Have you reviewed the M6 data?

- 1 A. Yes, I have reviewed the M6 beta.
 - Q. Have you reviewed the documentation that came with the M6 beta?
 - A. Yes.

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- Q. And did that documentation allow ISVs to at least start their development products using the NameSpace extensions?
- A. Well, the documentation was preliminary. It provided a means for commencing development on the NameSpace extensions.
- Q. And was that information that was provided in the M6 beta from your technical perspective sufficient to allow ISVs to complete all of the code?
- A. No. It was insufficient to complete the code. And I should add that it was sufficient to begin developing with the ability to make use of information resources inside Microsoft, so the ability to contact Microsoft support people when you had questions, because the documentation was incomplete. It was important during this time given the state of the documentation.
- Q. In your experience, I think you testified -- let me step back. Was the M6 beta the final beta that Microsoft was going to release before Windows 95 was released to the general public?
 - A. No. "M" means milestone. I don't know if that's

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been covered. But Milestone 6 was not the final beta. There were two, at least two more releases before the Gold Master was produced in the middle of July of '95 of the next year.

- Q. In your experience, is additional or final documentation typically provided in subsequent beta releases?
- Α. The documentation is built up over time in Yes. part as you find out what questions people are asking, so what particular problems they're having. You begin to supply programming examples that are meaningful for third parties to be able to understand that. You put that into the documentation process. So typically early documentation may be written by the programming team that developed the software. And they may be great programmers, but they're not great writers typically, not great documenters, and they're more valuable as programmers than they are as documenters. what you may -- what you often do is you get the developers to write some slim documentation, and then you put it in the process to put -- to complete it, to finish, to make it comprehensible to users and in the standardized form of the company. So that's what happens as documentation evolves through the beta process to the final, to the final product.
- Q. Based on your experience, is it common that even after sort of final documentation is provided that ISVs would be continued access or support from the software vendor to answer questions or ambiguities about the documentation?

A. Oh, absolutely. Absolutely. It's that -documentation is an odd beast. Some of it is readily
understood, but there are edge cases, there are certain
people, what does it mean by that word? What does it mean by
always? Does it mean always when I'm doing this, or always
regardless of whether I'm doing this?

So words and context, they're ambiguities, and they have to be resolved. And sometimes a developer working with the documentation and product can resolve them by developing a test case, but other times it's not possible and so she has to call the technical support person to get these things resolved.

And, in fact, in the late '80s and '90s Microsoft offered for a substantial amount of money good value in contact within Microsoft for these independent software vendors, each one having a different one, who could run to ground questions the developers had. Everybody is on a deadline. Everybody has things to do. So you don't want your developers stopped because they can't figure out the answer to a question. So they make use of this Premier Support hotline to answer questions that are beyond what's documented in what might be good quality documentation.

Q. Now, at some point did Microsoft decide to de-document or withdraw support for the NameSpace extension APIs?

1 A. Yes.

said doctor.

2 Q. And --

not sure. I've glanced at this. I'm not sure there's anything that your opinion adds that really is record evidence. But to keep the pace moving, you can go ahead. I think this is reflected not -- all I'm saying I'm not sure the doctor's opinion adds anything, but it may or may not. But you can certainly look at the next slide.

- Q. BY MR. SCHMIDTLEIN: And you're aware that Mr. Gates, that the e-mail that the jury has seen before and you reviewed was in October of 1994?
 - A. Yes. I'm aware of that, yes.
- Q. And your sub bullet there talks about APIs being made private, APIs read only. I'm not sure the jury has heard a lot about that. But what does it mean to make APIs private?

 THE COURT: I think I made a mistake. I think I

THE WITNESS: Yes. I was going to ask for an increase in pay rate here. So thank you.

So the -- in the programming languages that were being used, it was you can decide whether or not interfaces, programming interfaces are available to be used by other parties. And one of the ways that you do that is you can mark an interface or function private. And after that, it's not

- available to independent software vendors or third parties.

 The read only is a similar kind of marking of a function or an interface which says that it can't be extended, can't be used by software vendors in ways that would allow them to add, in this particular case add NameSpaces to the shell.
- Q. BY MR. SCHMIDTLEIN: Now, the next bullet here is M7 beta does not contain documentation for the NameSpace extension APIs.

Did you -- the M7 beta was the beta that was released after the June 1994 beta that we just talked about?

- A. That's correct. It's fourth quarter 1994. M6 was third quarter -- so second -- late second quarter, 1994, June.
- Q. And did you review the M7 beta and the documentation that came with that?
 - A. Yes.

- Q. Okay. And did that beta have documentation for the NameSpace extension APIs?
- A. It did not. It had been edited to remove the documentation as well as the interfaces.
- Q. Okay. The jury has heard evidence or testimony about de-documented APIs being potentially subject to change or breaking.

Based on your technical expertise, would you recommend to a software developer to develop a product to a de-documented API that is subject to change and breaking?

- A. I'm sorry. Would I --
- Q. Would you recommend or approved a developer working for you ${\hbox{\scriptsize --}}$
 - A. Oh.

- Q. -- who wrote a software program to a de-documented API that was subject to change and breaking at any time?
- A. No, I would not let him. And if I found out he did, I would not let him do it again for me.
 - Q. And why is that?
- A. Well, developing software is a complicated business, and it's costly, and it's very hard to undue things that you built in. So if I've built in dependencies on a certain interface, taking out that interface after the software has been developed and tested can be very costly and expensive. It's hard to figure out all the connection points that have been tied into this and have become dependent.

So we -- in the software industry typically what we have come to work from is this model of APIs being published, being documented. And then if there is foreseeing a change in the future, we will say they're deprecated, deprecated meaning that they're not the way we think you should program in the future. We're not going to change them now, but sometime in the future, not now, they're going to go away. So you should make plans eventually when you get around to it to choose the alternative that we're providing instead of the deprecated

one. So it's a very bad thing to use something that you know that you're on notice is going away and to begin work with something that you know is going away or that you're on notice that something could break. And that makes your software less likely to be able to be sold for a longer period of time or to customers who purchase, let's say, the next version of the software which your software works. So you have to try and stay within the set of documented supported APIs, not the ones that are not going to be available.

- Q. Okay. During the opening statements in this case Microsoft's counsel put a slide up that set forth technical justifications for Microsoft's withdrawing of the NameSpace extension APIs, and I think we've tried to reproduce that.

 Okay. And these are the three points that we have tried to duplicate from Microsoft counsel's opening. Have you considered each of these technical justifications?
 - A. Yes, I have.

Q. Okay. Let's talk about the first one. A program written to use the NameSpace extension APIs could potentially crash the Windows 95 shell.

Will you go to the next slide?

What do you understand the point here to be that NameSpace extensions could crash the Windows 95 shell?

A. Well, I understand that the way in which the interfaces for NameSpace work and, indeed, all shell extension

APIs, so it's not just the NameSpace APIs, but all of the shell extension APIs work in the same way, and that is when the interface is called by the independent software vendor program, it runs in the same process as the shell. And, therefore, if it becomes unresponsive, so if it decides that it's going to cast to infinity and back again, which is the way of saying it goes into a loop, (making sound), it will make the system nonresponsive, and the shell -- because you're running in the shell, the shell will not respond to you clicking saying stop. You click on an icon or click on something, nothing will happen. The system becomes unresponsive, the system crashes. So that's what I understand by the -- by this.

- Q. Have you gathered a number of the facts in this case that you have analyzed to look at in forming your opinion as to whether this issue of crashing a Windows 95 shell was a legitimate justification for de-documenting the NameSpace extension APIs?
 - A. I'm sorry. I lost the front of the question.
- Q. Have you put together in this slide a number of the factual points from the record that go to your opinion as to whether the technical justification of crashing the Windows 95 shell was a legitimate justification for de-documenting the NameSpace extension APIs?
 - A. I did. My technical assessments together and

1 | summarized it on this slide here.

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Q. Let's talk about the first bullet there. Microsoft re-documents later in 1996 without changing the NameSpace extension APIs.

Can you describe that?

- A. Well, the NameSpace APIs were, we talked about them being removed. They are restored, and they work the same way. Their definitions are the same. So the interface is described and defined in the same way before and after, before when they were documented in 1994 as when they were re-documented in 1996.
- Q. And have you reviewed the documentation in '94 and then the later documentation in 1996?
 - A. I have.
- Q. And did the NameSpace extension APIs continue to run in process after the re-documentation in 1996?
- A. The NameSpace extension continued to run in process, yes, with the same exclusion.
- Q. And this in-process issue, that was one of the purported justifications for why they de-documented them; is that correct?
 - A. Yes, that's true.
- Q. The next bullet point you have there is, Microsoft Athena PIM runs in process on Windows the 95.

What was the Athena PIM product?

1	A. Athena was a personal information manager that
2	would include contacts, and so you can store your contacts
3	like an address book and you could store your e-mail and your
4	calendar. The Athena code name later became I believe a
5	version of Outlook for the Internet, I think is where it
6	ultimately ended up.
7	Q. Can we go to the next slide?
8	And this is can you describe what this is?
9	A. This is a screen shot taken of Windows 95 system
10	with Athena operating.
11	Q. And does that screen shot reflect that Athena was
12	up and running in process on Windows 95?
13	A. It does.
14	Q. Can we go back now?
15	The next bullet point is, Microsoft Internet
16	Explorer uses the NameSpace extension APIs.
17	Can you describe how that relates to your opinion?
18	A. Well, the Internet Explorer operated on was
19	installed and made use of the NameSpace extensions when it was
20	introduced into the system.
21	Q. And did the Internet Explorer run in process?
22	A. Yes.
23	Q. Your next bullet point there is, other processes
24	put the shell at equal if not greater risk.
25	Can you describe that?

A. Well, there are, there are lots of -- there were lots of ways to get Windows 95 to crash, lots of programming interfaces that if not used properly could result in the system failing. And, in fact, some of the fundamental designs of the Windows 95 operating system gave rise to problems which were much, much more severe than the potential for the system becoming unresponsive because of a NameSpace extension. But, for example, the device drivers or the basic Windows 95 memory model allowed obligation programmers to write -- read and write information that if modified could cause the system to crash. And there was no protection.

vendors and Microsoft programmers are held to a standard of writing good quality tested software that does not cause the system to fail. And if it does, people don't buy that software anymore, and the company gets a bad reputation. So people understand that -- people programmers understand that there are interfaces that are benign. You can use them, and nothing bad will ever happen. And there are other interfaces that are -- that have to be used carefully and by senior programmers and that you have to test the software. That's a burden and responsibility that independent software vendors take on.

Q. When Microsoft withdrew the NameSpace extension APIs documentation, did they withdraw all of the shell

extensions?

- A. No, they did not.
- Q. The next bullet on your slide there is, the issue should have been apparent early in the development process.

Can you describe how that supports your opinion?

- A. Well, this is a weigh in, it's a question of weight. If the potential for crashing the system or making the shell nonresponsive was a high button item, a very important consideration, it wasn't something that was hidden. It was always known and should have been brought up and evaluated. Perhaps the decision to document the APIs was made in 1994. It wasn't an issue that arose after the decision to document the APIs was made.
- Q. The decision to de-document that we saw earlier, excuse me, was in October of 1994, and the jury has seen PX 1 that describes that decision.
 - A. (Witness indicates by nodding head up and down.)
- Q. Was that decision early or late in the development process for Windows 95?
- A. That decision was late in the -- very late in that process of bringing the Windows 95 product to market, and even much later at the time because the Windows 95 product was going to ship, at least the plan announced to the public and also managed internally at least according to what I've seen in the record was for the product to ship in the first part of

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1995, not when it ultimately shipped in 1995 August. So it was -- October of 1994 is very close to the first part of 1995 when the product was going to ship. It's very close.

Q. The last point there is, not a technically difficult fix. And then you've got a sub point, was accomplished for Windows NT by March 1995.

Explain how that relates to your opinion on this issue.

- Well, the ability to make the NameSpace extension APIs user, that is, an independent software vendor, not have even the potential to in this way make the system nonresponsive is controlled through a fix that Microsoft introduced that called for the user to run in a separate process. So rather than -- as would happen originally and as it turns out afterwards, rather than my software product calling the NameSpace extension and my product running in the same process as the shell what would happen is I would start running in a new process. So the shell process would stay over here, and I would be in a separate process. And that was the fix. And that was not difficult to do. In fact, that was one -- that was a solution that Microsoft itself discussed using for one of the pieces of software that it had already under development that was using the NameSpace extensions in October of 1994.
 - Q. Let me go to the next issue that we have seen on

Microsoft counsel's slide, which was incompatibility with future versions of Windows. And have you prepared this slide to summarize some of the evidence that you considered in forming your opinion as to this justification by Microsoft?

A. Yes.

Q. Okay. And the first bullet point there is, the Chicago shell chosen as the shell codebase for future Windows operating systems in September 1994, before Mr. Gates' decision to de-document the NameSpace extension APIs.

Explain how that relates to your opinion in this case.

A. All right. To do that I need to talk a little bit about the different things that were going on at the same time, If I can take a moment to do that.

So in the period around here, around September of 1994, Microsoft had under development the Windows 95 product Chicago, and that was one operating system with one shell, one user interface interaction. It had a second operating system that was also under development, and that was the Windows NT operating system. And it was going to have a different shell possibly. And then there was a future operating system called Cairo that potentially had its own, how to user interface. So there's different operating systems with different shell and different user interactions. And so it's in -- a part of the coordination and planning has to involve how you -- how

compatible and interoperable you make these various versions of these various operating systems. You have Microsoft Windows phone, and that's a version of Windows. But it does not have to have the same degree of inoperability as Windows desktop as maybe the Windows desktop operating system would have to have with a server operating system or a work station operating system. So there's different levels of compatibility that you need to take into consideration.

In order to deal with these various shells and development plans in September of 1994, Microsoft executives made the decision according to the record and shows up in the products afterwards that the Chicago shell was going to be the shell that was going to be put on Windows NT, the next version of Windows NT, as well as on Chicago. And what we mean by codebase is the source code that was developed for the Chicago shell was going to be used as the source codebase for the Windows NT product.

And this, as I said, took place in September of 1994, before the decision on the NameSpace APIs.

That gets to the next point.

Q. I was going to say your next point, as a result the Cairo shell compatibility was no longer an issue.

Explain that.

A. Well, the concern about Cairo and whether Cairo was going to be compatible with the various -- with the Chicago

1 shell functionality went away because Cairo was no longer 2 going to be the shell for Windows NT, and it was no longer 3 going to be one of the two principal operating products that 4 Microsoft was going to be selling in the near future. 5 And is it fair to say as a result of that the 6 decision was made that the NameSpace extensions were going to 7 be put on the Cairo operating systems shell? 8 I think -- I think it was going to be put on the 9 Windows NT. 10 Q. Sorry. 11 Α. Not the Cairo shell. It was going to be put on the 12 Windows NT. 13 THE COURT: That's a good example of a leading 14 question not being answered. 15 MR. SCHMIDTLEIN: I confused Cairo with NT. 16 THE COURT: I absolutely understand. But it was a 17 leading question, but you made a mistake. 18 MR. SCHMIDTLEIN: But it was a poorly worded leading question. 19 20 Ο. BY MR. SCHMIDTLEIN: Let's talk about the next 21 bullet right there, making NameSpace extension APIs run 22 robustly on Windows NT and poses no issues. 23 Explain how that factual statement fits into your 24 opinions in this case.

Well, you have to -- you have to consider

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qualitatively whether the interfaces that you're going to put onto this other operating system are going to fit the environment in which this other operating system is going to operate. And that's a concern because, for example, Chicago and Windows 95 was intended for home users, small office, home office users as well as enterprises, but not enterprises that had more demanding requirements. For that market and for the market for specialty work station kind of computing, the kind of computing that you use for computer-aided design, that you use for graphic animation stuff, that's for a work station. In that environment you have a higher need for a robustness. People pay more for the computers. They expect that they're more reliable. They don't break. They're more secure.

And so the concern here that I was evaluating was whether the NameSpace extension APIs could be made to run on the Windows NT operating system in a robust manner, in a manner that NT users or customers would expect. And the answer to that, according to the document -- according to the record as well as according to the products that shipped was, yes, it did not pose any robustness issues to make the NameSpace extension APIs run on the Windows NT system.

- Q. The last bullet there is, NameSpace extension APIs were Ole compatible. I'm not sure the jury's heard a whole lot about the Ole technologies. Can you explain those?
 - A. Ole was the core technology from Microsoft that was

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part of their object-oriented design and object model for Windows and for many of its strategic products. So to make -- so it was important that if you were introducing new functionality that it be -- that it make use of strategic technology that was in the mainline of the company and provide, in this case here, the developers of the NameSpace extensions and, indeed, of the shell extensions more generally make sure that they used Microsoft Ole 2 technology to make -- to provide access to their interfaces so they were out of the box using the interfaces that were to be the future themselves. They were using interfaces that were the future of the company.

Q. I'd like to go to the last bullet point from Microsoft counsel's slide about, the NameSpace extension APIs never achieved hoped for functionality.

We've talked a little bit about the Athena product.

And your first bullet point there is, Athena used the

NameSpace extension in the manner that Bill Gates envisioned,

i.e., the right-hand pane.

And can we go back to that Athena?

Does this screen shot of Athena on Windows 95 show that Athena is running in the right-hand pane?

- A. Yes. Yes, it does.
- Q. And you might want to use your sort of a laser pointer there to describe that for the jury.

A. Yes. The idea here is not only that you, you can navigate down the left-hand side here of these information sources and that you can add elements, add information sources like My Music and My Pictures and other like that, but as a second order of thing, you want to be able to provide the interesting information about the lists of items that correspond to the item on the left-hand side. So I'm packing that rather poor statement.

What you would like to do is if your cursor is pointing to the floppy disk drive, what you want to see is what the files are on the right-hand side that are on that floppy disk. And when you go down here to Control Panel, what you want to do is to see the list of programs that are available that help you manage your fonts or add a new program or the other elements that are part of the Control Panel. You want to see here, when you browse here, you want to see the printers. That's step two in the use of these NameSpace extensions.

Step three is you actually would like to be able to do -- to have the program do work for you, that the program that is associated with the elements that you are browsing, you want that program to actually interact with the user. And here what we see is an e-mail program, which is not just displaying the list of e-mail messages that you have, but actually showing the e-mail and allowing you to perform

actions like writing a new message or replying to group or replying to author and other things. So you're able to work with the program and do stuff without launching the program.

So the big advantage of this is that you don't have to leave here, leave this screen to go and work with the program, launching another window and having that window, and then coming back and finding yourself back again, back on this screen, and where is the window that contained the document that I was working on, and all those kinds of thing. You could end up spending more and more time here as more and more programs, learn to use the NameSpace extensions to not just add information sources and allow you to browse them, but to actually work within the object itself.

Q. Can we go back to that previous slide?

The next bullet point, the NameSpace extensions are, quote, trivial and unimportant.

The jury has seen I think video deposition testimony where Mr. Gates referred to in his deposition in this case the NameSpace extension APIs as being trivial and unimportant. From a technical perspective, do you agree that the NameSpace extension APIs are trivial and unimportant?

- A. No, I do not.
- Q. And explain why that is.
- A. First of all, looking at sort of the feedback that came from the initial exposure of the NameSpace APIs or at

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least their capabilities to the independent software development community back in 1993 resulted in a strong pull from the developer community saying, we like these APIs. think we can do good work with them. We would like to have The demand is sufficient. It would appear to persuade them. Microsoft to document these APIs, whereupon independent software vendors began using them. And you have to remember, you have to keep in mind sort of the time frame. The APIs are disclosed and documented in June of 1994. And by October when the decision is made to pull them, there's already a number of software developers who have started work with them. And software developers are working on schedules to deliver products. And what this must have meant was they changed their development plans to include the use of those technologies. Within a very short amount of time, they found them to be -- I mean, they found them to be very useful.

The next point was that within Microsoft the number of products and components that had incorporated these APIs already or who had established plans that depended on the use of these APIs was significant. There were easily a half dozen products that had included NameSpace extensions in them before the product had ever been released. And that is another indicator of how significant these APIs could be, what their potential was to build products.

I should point out that at this time, in the

1993-94 time frame, there were other operating systems on the market for personal computers. In fact, OS/2 from IBM was on the market, and OS/2 was coming, the next version of the product was coming with what was called an extensible shell.

And IBM was advertising that as an important attraction to get software developers to develop for OS/2. The BOS operating system was also being marketed, and it, too, had extensible shell capabilities. The next operating system from Steve Jobs, the operating system that is now the heart of the MacIntosh under the OSX, that operating system back in mid 1990-1994, was based on the concept of the extensible shell. So the extensible shells and the APIs to get at them so independent software vendors could build products that tied into the shell was an idea that had a lot of attraction.

The next point in this is that when they were re-documented and in the months and years that have gone by since then, there are hundreds of applications — there are dozens of applications because I haven't counted over a hundred, applications that have made use of these NameSpace extension APIs to deliver the benefits of adding new names, new information sources and allowing users to navigate and browse these new information sources. So there's no doubt in my mind that these are compelling pieces of technology that allow for tremendous amounts of intervention.

Q. Did Microsoft get a patent on the NameSpace

1 extension API? 2 I believe they got at least one. Α. 3 Q. Okay. 4 Your Honor, I don't know if you wanted to take --5 THE COURT: I understand your issue. And the 6 problem is the lunches don't come until 20 of. But I know we're to Number 3. 7 MR. HOLLEY: Your Honor, before we move to Number 3 8 9 may we could be heard at the bench, please? 10 THE COURT: Should we just let the jury have a half 11 hour? And the lunches will come when they come. I assume 12 they won't be here for about 20 minutes. 13 THE CLERK: I'm thinking about 20 to, quarter to. 14 THE COURT: Why don't you all approach the bench. 15 We'll keep you here for a second and see how long it's going 16 to take. 17 (Whereupon, the following proceedings were held at the bench:) 18 MR. HOLLEY: Your Honor, point Number 3, as I 19 understand it, relates to MAPI and its impact not only on 20 2.1 Lotus Notes but also on GroupWise because that's the way I 22 read the slide. Now, Novell's told the Court that it does not 23 seek to use evidence relating to MAPI to establish any harm to 24 Novell, but only somehow to show that MAPI conduct harmed

Lotus Notes, Lotus was middleware, Notes was middleware and

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that Microsoft's attack on Lotus Notes impacted competition in the PC operating system market.

We filed a motion in limine on this. Your Honor said that you were not inclined to exclude the evidence entirely, but you wanted to think about the 403 implications at the time it was about to come in. Well, it's that time.

THE COURT: I better start thinking.

MR. HOLLEY: And, Your Honor, I think it's fair to say that this is very far afield from the matters at issue in this case. The notion is somehow that in order to use the Lotus Notes client you had to have the Microsoft exchange in box on the Windows desktop. How that relates to a middleware threat to Windows is frankly beyond me.

And so all we have is evidence of some, you know, free floating bad act by Microsoft which frankly is very arcane, and it just shouldn't, isn't really probative of anything that's relevant.

THE COURT: Mr. Schmidtlein?

MR. SCHMIDTLEIN: Your Honor, I think you have said that it is appropriate and it's permissible for us to get into other conduct that took place during the relevant time period. This is actually even under Your Honor's sort of definition of relevant time period. This is conduct that took place during the relevant time period. Professor Knoll is going to explain its competitive significance. He is only going to testify

about sort of the technical aspects of what occurred and, you know, and how it happened. He's not going to testify from a technical perspective. He's not going to draw the competitive connections or discuss the middleware threats and all those types of things. And I do believe they've made the motion already and lost it. And we should be allowed to proceed.

I think I've got two slides. And we have scaled back significantly sort of the scope of this MAPI story, if you will, in light of Your Honor's rulings and in light of trying to move things along here. I think I've got two slides maybe.

MR. HOLLEY: Your Honor, very briefly. I don't want to belabor this but on October 6th, the Court said: The focus -- in discussing MAPI. The focus has got to be on what Microsoft did generally and specifically what it did to Novell.

And you then said Your Honor, I think an amended jury instruction will probably address that. I still have to make a 403 determination, and I will hear this.

And, Your Honor, I can't believe this is so tangential to this case that the preface of having some bad act come in outweighs the probative value of the testimony.

MR. SCHMIDTLEIN: I think this is no different than Netscape and Java, which you said does come in. And we have cut out, you know, reduced --

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                 THE COURT: I will let it in. But I will also say
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      I'll instruct the jury that there's, none of this is related
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      to any Novell product.
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                 MR. HOLLEY: Well, that helps.
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                 THE COURT: You still have your objection.
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                 MR. HOLLEY: Understood.
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                 THE COURT: If you didn't hear me, I'm going to
      give an instruction that this particular testimony does not
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 9
      relate to any Novell product.
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                 MR. HOLLEY: Yeah. Thank you.
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                 MR. SCHMIDTLEIN: Thank you, Your Honor.
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                  (Whereupon, the following proceedings were
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            held in open court:)
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                 THE COURT: Ladies and gentlemen, I'm going to
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      allow testimony as far as this next slide is concerned. But
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      I, as I think you probably know already, this really relates,
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      does not relate to any -- this testimony and this portion of
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      Mr. Alepin's opinion does not relate to any Novell product at
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      all. So I'm still going to allow testimony about it, but
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      there is -- this has to do with I think an e-mail, and it has
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      nothing to do with any Novell product at issue in this case.
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                 Does that help? Is that right?
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                 MR. HOLLEY: I believe so, Your Honor. Thank you.
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                 THE COURT: Okay. Fine.
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                 BY MR. SCHMIDTLEIN: All right. Mr. Alepin, the
            Q.
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third opinion we have here is, Microsoft had no legitimate technical justification for forcing competing mail products to install Microsoft's mail application software on the desktop.

Can we go to the next slide, please?

Your opinion on this issue relates to something called the messaging programming application interface; is that right?

- A. Almost. Almost. It's the messaging application programming interface. It's MAPI.
 - Q. MAPI.

- A. MAPI.
- Q. And what the MAPI?
- A. MAPI is a couple of things. MAPI is a set of application programming interfaces that allow independent software vendors and Microsoft to access and use the services of messaging software in an operating system. So it's both the APIs -- what MAPI refers to is the APIs that you use to call the services, and it refers to the software that actually provides the services. So depending on the context of APIs themselves or it may be the software that actually does the work that the APIs ask the software to do.
- Q. In your overarching opinion of this, I should have asked you this one question before, you made reference to -- can we go back to that? You made reference to mail product. What do you mean by mail product here?

- A. E-mail products. And e-mail products which may have been a simple e-mail standing alone just -- by that I mean only e-mail or e-mail as part of a GroupWare product suite, which would have included calendaring and address books and even in some instances workflow and document management, maybe even more elaborate. But e-mail is the core concept.

 O. And did you prepare sort of a demonstrative slide
- Q. And did you prepare sort of a demonstrative slide to try to explain MAPI to the jury?
 - A. I did.

Q. Can we have that?

May I approach, Your Honor?

THE COURT: Of course. And since we have a separate slide about this, I think I'll say again this has nothing to do with any Novell product involved in this case.

- Q. BY MR. SCHMIDTLEIN: You've got it up there?
- A. I've got it.
- Q. So this is -- I know this is a little confusing. But can you walk the jury through how the MAPI interface works here?
- A. What MAPI does it allows -- the fundamental concept starts from, I'm in a word processing program and I want to e-mail the document that I'm working on or I might even want to write an e-mail inside the word processing document. It might be the case that I would have to save the document, exit the word processing program and then load up the e-mail

program and then, say, copy the message, the document that I'd just written into my e-mail, and then send an e-mail. That was -- that was a good idea, but not a great idea in terms of ease or ease ability.

What software developers decided to do in place of that was to give the send command to a user from inside the word processing program or inside almost any program now that you use, you'll find a send function that allows you to send the thing that you're working on as an e-mail out. And to do that, you will be using -- certainly in the 1990s you were using MAPI if you were using the Microsoft operating systems.

And what MAPI did was it allowed the desktop applications to follow a MAPI function to transmit the document and to present information about how to address the document and from whom -- for whom you intended the document, which information it got typically from your address book. And so you got to prepare the e-mail for transmission, and then depending on what server software you had or who your supplier, your e-mail supplier was, the message would go out from your computer and over to the e-mail server if you were working in a company. It was a little differently if you're -- if you're connected to the Internet and you're using AOL or some other mechanism to get e-mails out.

But in this case here, you would send from your application, it invokes the MAPI middleware to get your

document into a form that can be transmitted to collect the addressing information that you want to send it to and then to route it to the computer server that's going to be responsible for distributing the e-mail to whomever you intended it for.

Q. Who developed MAPI?

- A. MAPI was developed by -- well, it's standard -- it's a standard, so it's a set of specifications which Microsoft was the author, and then the MAPI API implementation. So the functionality that is behind these application programming interfaces was developed by Microsoft on the Microsoft operating systems.
 - Q. And do GroupWare products make use of MAPI?
- A. GroupWare products other than Microsoft GroupWare products, if I understand your question?
 - Q. Yeah.
 - A. And the answer is yes.
- Q. Have you had professional experience regarding GroupWare products?
 - A. Yes.
 - Q. Can you describe that for the jury?
- A. As I have mentioned, in the late 1990s, I was part of Fujitsu team working on Fujitsu team where servers and GroupWare and its efforts to expand its market into North America.
 - Q. Do you recall roughly around the time that MAPI was

developed?

- A. It began I believe in 1991 and actually became available for use in the 1993 time frame, I think, on Windows 3.1. I believe that's the case.
- Q. During this time period, what was the leading GroupWare product in the market?
 - A. The leading GroupWare product was Lotus Notes.
- Q. And I believe you testified previously that Lotus Notes was a middleware product; is that correct?
 - A. That's correct.
- Q. Okay. I think you made reference a few moments ago to an open standard. Describe what is an open standard?
- A. Well, we have standards. In the computer industry we rely on standards a lot in order to be able to build products because standards define the way two products from potentially two different companies are going to be able to work together. So to really simplify it, we need standards so that the manufacturers of plugs and the manufacturers of faceplates and outlets can kind of work together with the people who have appliances that they want to connect to the electrical grids. So there is there are a lot of standards there that specify how big the plug is and what the shape is and how much current is going to be transmitted and other things, you know, shut-off circuits and all of this other stuff that have to be taken into consideration.

Those standards are -- when those standards are publicly owned, by that I mean when there is a standards organization that independently accepts suggestions for additions and considers them by the group for acceptance, you know, no one company owns the standard, we call that an open standard. So the standard is the rules. Open standards are rules where the process for amending them is not under control of a single company, but rather part of a standards body which adopts the decision according to the rules of the standards organization.

In the context of the Internet, for example, we have lots and lots of standards that have made it possible for us to make a lot of progress in a short amount of time. So looking at the 1995 Internet and looking at the 2010 Internet, for example, there's a big difference, and that's -- a good deal of that is due to adoption of open standards.

Non-open standards are closed standards or propriety standards are the most commonly used term, are standards which are made available by a vendor, a particular vendor, but another vendor has an ownership interest in it.

And that ownership interest may be that only the vendor will or can modify it, or the vendor can control the rates in which the products using the standards can operate.

So it's different from an open standard, meaning that there is a company or some companies that control how the

1 standard gets changed and who can use the standard and when.

- Q. During the time that MAPI was being developed by Microsoft, was there another competing standard that was under development?
 - A. Yes. Yes.

- Q. What was that?
- A. That was called VIM, or vendor independent messaging.
 - Q. And who were the developers of VIM?
- A. VIM was being promoted primarily by Lotus, and I believe Novell was a participant in it, as well as some of the other third party e-mail companies. I think cc:Mail. I'm not sure whether cc:Mail, which was Da Vinci, was part of Lotus or not at the time. But there were a number of companies that had gotten together to announce VIM and to promote its use.
- Q. You made reference earlier today to development platforms. Was Lotus Notes a development platform that competed against Microsoft?
- A. Yes. It was a development platform that competed against Microsoft on a couple of levels.
- Q. Was Lotus Notes developed to run on different operating systems?
 - A. Yes, it was.
- Q. Is it fair to say that Lotus Notes was a cross-platform application?

1 Yes, it was. Α. 2 The fourth bullet you have here on your slide is, Q. 3 Microsoft promised the industry that MAPI to be an open 4 standard. 5 Can you describe what that meant? 6 Well, in order to recruit independent software Α. 7 vendors, import independent software vendors to join and to build their products with MAPI instead of the competing 8 9 standard, at the time VIM, Microsoft indicated that MAPI would 10 be open and would not be Microsoft specific, would not favor 11 Microsoft in its design or in its specifications. 12 Did eventually Lotus Notes and others adopt MAPI in 13 light of those representations about open standard? 14 Yes, they did. Α. MR. SCHMIDTLEIN: Your Honor, at this time we would 15 16 like to move the exhibit of PX 16, 22 and 275. 17 THE COURT: Well, I'll consider that later. We're a little far afield, I guess. So I'll consider that outside 18 19 of the presence of the jury. MR. SCHMIDTLEIN: Okay. We're going to go on the 20 last slide, or do you want to break? 21 22 THE COURT: Well, let's go to the last slide, if 23 you don't mind, and finish up with that. 24 MR. SCHMIDTLEIN: Okay. 25 BY MR. SCHMIDTLEIN: The last slide here that we Q.

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have prepared is, the forced installation of Microsoft e-mail application software on the Windows desktop. And your first bullet here is, MAPI compatible products from Lotus and Novell required Microsoft e-mail software, and it talks about Microsoft exchange client loaded during the installation process.

Can you explain what you mean by that bullet and how it supports your opinion?

All right. As I mentioned before, MAPI was APIs, Α. but it was also a software that implemented the APIs, so that it was the functions that were called when an application would send mail inside Windows PC. And in 1994 and 1995, not everyone who bought a Windows PC was connected to the Internet or to a network. And so just like with other features, some portions of the Windows operating system were not installed on every computer until the user said, I intend to use certain functions and features. So if a customer said that the user of Windows 95 said, I want to use e-mail, he or she would have to have the MAPI software installed from the installation disk. And what that would do is it would not only -- and they would not only copy the MAPI software that implemented these APIs, but it would also stick an icon on your desktop that said, in box. And it would do that regardless of whether you were planning on installing Lotus or cc. Mail or Microsoft Exchange or MS mail or anything. It would just stick that

icon saying in box on your desktop and also copy the MAPI software.

If you click on the icon, you would be asked to complete setting up Microsoft's exchange server for its e-mail product. So that would in some cases come as a surprise to you, especially if you thought you were preparing to set up Lotus or some other product.

The other part of this was that in box, and I'm going now to the third bullet, was not an icon like other icons. This was an icon that was really stuck on the screen. So if you tried to delete it, you couldn't delete it. Some people pressed the button and right mouse click, and they saw delete, and they think they can delete it and depress the delete key and try to delete it and move it to the recycle bin and try to delete it and they can't delete it.

And ultimately there were a number of bulletin boards and forum postings across the Internet that answered the question, how do I get rid of the icon off of the desktop? The answer was in part for some you go into the registry, the Windows 95 registry, which you're told only sophisticated smart users should open the registry and do it because modifying can crash your system, so don't touch this. But that's how you get rid of a desktop icon.

The sort of takeaway for the independent software vendors of the middleware product was they would end up with

customers who were saying, I'm clicking on this icon and I'm not getting to your software. Why is your software broken?

And it's axiomatic in that the PC in PC business that if you have two icons that do the same thing on your desktop, you're always going to get a support call. A support call costs you money, and you have an unhappy customer because of wait times and other things like that.

So having two icons on your desktop, one for your e-mail product and one for the Microsoft product, that you didn't install costs the software developers money in the form of support, and they were not happy with that.

THE COURT: Let's break for lunch. I'll take up the issue of the exhibits after, unless there's some reason, after the jury leaves this afternoon.

Just so you all don't think I'm crazy, it's a little hard to describe this. This as I said is not related to any Novell product, so you're wondering, why is the Judge letting this in? Both in terms of that testimony and there's other evidence you've heard including some of the things that Mr. Taskier has read or is going to read to you, to provide the broader context of what was going on for what you are considering, I'm just allowing some evidence, a limited amount of evidence concerning Microsoft's conduct in relation to other people like Lotus here and I think Sun or Netscape.

So that's why I'm letting it in. So don't think

Case 2:04-cv-01045-JFM Document 425 Filed 01/18/12 Page 49 of 50 I'm entirely crazy. But there's no specific Novell product involved here. (Recess.)

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