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IN THE UNITED STATES DISTRICT COURT  
DISTRICT OF UTAH  
CENTRAL DIVISION

NOVELL, INC., )  
Plaintiff, )  
vs. ) CASE NO. 2:04-CV-1045 JFM  
MICROSOFT CORPORATION, )  
Defendant. )  
\_\_\_\_\_)

BEFORE THE HONORABLE J. FREDERICK MOTZ  
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November 15, 2011

Jury Trial

A P P E A R A N C E S

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I N D E X

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Witness	Examination By	Page
Roger G. Noll	Mr. Tulchin (Cross Cont.)	
Roger G. Noll	Mr. Johnson (Redirect)	1951
Roger G. Noll	Mr. Tulchin (Recross)	1960
Video Deposition of Cameron Myhrvold		1966
Video Deposition John Ludwig		1990

Exhibit	Received
(No exhibits received.)	

1 November 15, 2011

8:00 a.m.

2 P R O C E E D I N G S

3  
4 THE COURT: Good morning, everybody.

5 The critical fact is when you graduated from East  
6 High School.

7 THE WITNESS: Yeah, I have been asked that  
8 question about five of times. It was 1958, Judge. All  
9 right.

10 THE COURT: You're a young kid.

11 MR. TULCHIN: It was a good year.

12 (WHEREUPON, the jury enters the proceedings.)

13 THE COURT: Good morning, everybody.

14 The answer to the all important question is 1958.

15 MR. TULCHIN: You are not referring to me, Your  
16 Honor?

17 THE COURT: No.

18 MR. TULCHIN: Okay.

19 CROSS-EXAMINATION (Cont.)

20 BY MR. TULCHIN

21 Q. Good morning, Professor Noll.

22 A. Good morning, Mr. Tulchin.

23 I'll bet you can't top that.

24 THE COURT: Don't put anything past him.

25 BY MR. TULCHIN

1 Q. Professor Noll, you would agree with me, would you not,  
2 that it does not raise any antitrust concerns for the  
3 developer of an operating system to do the best job that the  
4 company can do in making the best operating system?

5 A. No. That is attempting to be superior. That is an  
6 efficiency offense.

7 Q. You said no. You do agree with me that it does not  
8 raise any concerns?

9 A. Well, yes. It was a double negative problem. Yes, to  
10 my knowledge there is no basis for saying that it is  
11 anticompetitive to try to make a better product.

12 Q. In fact, it is pro-competitive for a company making an  
13 operating system to do the best possible job in making the  
14 best operating system?

15 A. Within limits, yes. I mean, the notion that if  
16 something is imperfect and somebody else, nonetheless, is  
17 using it well, and you withdraw it for that reason as  
18 opposed to because the imperfection is something that causes  
19 the system to be unstable, then in that condition it would  
20 be anticompetitive to use as an excuse for the withdrawal  
21 the superior efficiency argument.

22 Q. You have said, Professor Noll, that operating systems  
23 can be very large and can contain millions of lines of  
24 source code, correct?

25 A. I did say that a long time ago. I didn't say it in my

1 testimony, but I said it in my expert report.

2 Q. Yes, you said it in the report that you submitted in  
3 this case.

4 A. That is correct.

5 Q. And there are times when the company developing an  
6 operating system has to make compromises in the interest of  
7 getting the operating system out the door, released to the  
8 public, correct?

9 A. There is always a decision about whether to release  
10 something or to continue to work on it to make it better.

11 Q. And you would agree --

12 A. That is a trade off.

13 Q. Sorry, sir.

14 A. It is a trade off.

15 Q. Right. And the company making the operating system has  
16 to make judgments, has to make those trade offs. When do I  
17 stop working to improve it, and when do I get it ready so  
18 that we can get something to the market, correct?

19 A. Yes, companies have to make that decision.

20 Q. So not every operating system can include every feature  
21 or all of the functionally that might have been once  
22 envisioned for it. Do you agree?

23 A. Well, I agree that that can happen, yes.

24 Q. Am I right that in some cases APIs can remain  
25 undocumented without undermining the value of the operating

1 system?

2 A. That is true, there are cases in which not commenting  
3 an API is a valid act.

4 Q. Examples are APIs that are referenced by the operating  
5 system itself or that are not used because they are  
6 unstable; is that right?

7 A. I think I said that word for word, right? Are you  
8 quoting me?

9 Q. You did.

10 A. Any footnotes --

11 Q. There were many footnotes in your report but none  
12 there. None there.

13 So we have agreed that an example of an instance where  
14 the developer of an operating system can choose not to  
15 document APIs are where those APIs are unstable, correct?

16 A. That is one valid reason for not documenting an API.

17 Q. And by unstable what you mean is instances where use of  
18 the APIs might crash the entire system?

19 A. That is right. In this case it is called blue death,  
20 where your computer screen turns blue because everything has  
21 died.

22 Q. Professor, will you agree then that if use of the  
23 namespace extension APIs could crash the operating system,  
24 could create the potential that Windows 95 would crash when  
25 being used by an application, that Microsoft would be

1 entirely justified in not including those APIs in the final  
2 version?

3 A. Well --

4 THE COURT: Do you mean the APIs or the  
5 documentation for the APIs?

6 MR. TULCHIN: Well, I asked first about the APIs,  
7 Your Honor.

8 THE WITNESS: You're asking if removing APIs --  
9 BY MR. TULCHIN

10 Q. No.

11 A. I didn't -- I'm sorry. I didn't quite understand the  
12 question.

13 Q. Okay. Let's back up one step.

14 A. Yeah.

15 Q. I think we agreed and you even pointed out to me that  
16 the statement that I made was something that I was reading  
17 from your report. The examples of situations where the  
18 developer of an operating systems is free not to document  
19 APIs, are where those APIs might crash the whole system?

20 A. Yes. There are circumstances under which the harm  
21 created by -- the potential harm created by a particular set  
22 of APIs exceeds the potential benefits, and in those cases  
23 it is perfectly valid not to document the APIs.

24 Q. Right. And you haven't yourself examined the technical  
25 issue of whether use of the APIs here, the namespace

1 extension APIs have the potential to crash Windows 95?

2 A. No, I have not. I am not offering myself as a  
3 technical expert about the nature of those APIs. I am  
4 relying upon the people who actually are computer scientists  
5 and software engineers for that. Any of my opinions are  
6 based upon what they have testified to.

7 Q. The "they" in your last answer is Ronald Alepin,  
8 correct?

9 A. Well, he did testify about -- yes, about namespace  
10 extension APIs. Yes.

11 Q. I am just trying to find out when you use the word  
12 "they", which implies the plural, whether you're referring  
13 to anyone else besides Ronald Alepin?

14 A. You're correct that he is the only person who has  
15 testified here. That is exactly right.

16 Q. So if Mr. Alepin is wrong on this subject, then your  
17 opinion would be that it is okay not to document the  
18 namespace extension APIs?

19 A. I agree with that. If in fact they were sufficiently  
20 unstable and the harms exceeded the benefits of documenting,  
21 then it would be perfectly valid to withdraw them.

22 Q. Now, yesterday, Professor Noll, you spoke at some  
23 length about the applications barrier to entry.

24 Do you recall your testimony, sir?

25 A. Yes, I do.

1 Q. I think you even had a slide that contained a brick  
2 wall.

3 MR. TULCHIN: Maybe we can show that,  
4 Mr. Goldberg.

5 THE COURT: There were a couple of slides of brick  
6 walls and one he showed a pile of the bricks on the ground.

7 MR. TULCHIN: Right. I think it was slide 14, if  
8 you have that. I hope I have the number right.

9 BY MR. TULCHIN

10 Q. Do you see that in front of you, sir?

11 A. Well, I sort of see it. It is being -- there is  
12 something preventing me from seeing the whole picture.

13 Q. Let me get one for you if that makes --

14 A. No. It is okay. I know what it looks like. I will  
15 remember it.

16 Q. All right. The brick wall there was your way of trying  
17 to depict this barrier, the applications barrier, correct?

18 A. That is correct.

19 Q. Now, in some cases you will agree with me, will you  
20 not, Professor Noll, that the makers of operating systems  
21 engage in competition to try to get the makers of  
22 applications, ISVs, to write their applications for that  
23 company's operating system?

24 A. Right. When I used the phrase evangelize that is  
25 exactly the process. Under the normal circumstance,

1 certainly any circumstance in which an operating system  
2 vendor is not a maker of applications, they want to get as  
3 many people to write applications to their operating system  
4 as possible.

5 Q. Would you agree with me that that is one of the things  
6 that Mr. Gates was focused on for many years before 1994,  
7 was to evangelize, to try to get ISVs to write applications  
8 to Microsoft operating systems?

9 A. I do not agree with that characterization. I agree  
10 that at times that was the strategy and the policy, but I do  
11 not agree that it was uniformly the policy. Indeed, there  
12 are many examples prior in history to Microsoft undertaking  
13 similar acts to undermine competition in the applications  
14 market that they want to dominate.

15 Q. Professor Noll, let's assume for a minute in this slide  
16 14 that the alternative operating system is OS2.

17 Are you with me?

18 A. Yes.

19 Q. And in 1994, for example, OS2 was owned by IBM,  
20 correct?

21 A. I bet it was after Microsoft broke up the partnership,  
22 yes.

23 Q. Right. And IBM at the time was a much larger company  
24 than Microsoft, correct?

25 A. Well, of course. It was making computers as its main

1 business. Its software business was not bigger than  
2 Microsoft's.

3 Q. No, I asked you if it was a much larger company and it  
4 was.

5 THE COURT: Go ahead.

6 BY MR. TULCHIN

7 Q. It would be perfectly legitimate competition for  
8 Microsoft on the left side of your slide, the maker of  
9 Windows, to be attempting to convince ISVs to write  
10 applications to Windows, while IBM on the right side was  
11 attempting to convince ISVs to write applications to OS2,  
12 correct?

13 A. That would be the normal incentive but, in fact, they  
14 didn't do that. Microsoft tried to encourage to write to  
15 OS2 because they knew IBM could never meet the release  
16 deadline once they withdrew from the partnership.

17 Q. IBM certainly tried to get people to write to OS2?

18 A. That is absolutely correct.

19 Q. And that is a perfect, legitimate form of competition?

20 A. That is correct.

21 Q. So you didn't mean to imply by this brick wall that  
22 there is necessarily something wrong with the applications  
23 barrier to entry? It can be a function of pure competition,  
24 correct?

25 A. The applications barrier to entry is simply a fact.

1 Like all other facts you have to analyze the circumstances  
2 that give rise to it and that cause it to continue. It can  
3 be the result of either pro-competitive activity or  
4 anticompetitive activity.

5 Q. Now, Professor Noll, it is true, is it not, that  
6 Microsoft as a company is of course not guaranteeing that  
7 everything in a beta is going to be in the final release  
8 version?

9 A. All beta versions of all software are provisional no  
10 matter who --

11 MR. TULCHIN: Mr. Goldberg, you can take that  
12 down.

13 BY MR. TULCHIN

14 Q. I'm sorry, sir.

15 A. I said all beta versions of all software are  
16 provisional, and they are not guarantees of what the program  
17 will contain upon final release. Indeed, I have been using  
18 a Google software that has been a beta for nine years.

19 Q. Okay. So do I understand correctly that you're  
20 agreeing with me, that there is no guarantee that the final  
21 release will contain everything that is in a beta?

22 A. No. There is no guarantee. There is a practice in the  
23 industry, however, which is that the only changes to the  
24 beta are things that result of discovering major flaws and  
25 major problems.

1 Q. Well, now I know yesterday you said, Professor Noll,  
2 that you only skimmed some of the testimony of Bob  
3 Frankenberg.

4 Do I have that right?

5 A. I did not read word for word the entire testimony. I  
6 did skip over some of it, yes.

7 Q. Did you go back to look at any of it last evening by  
8 any chance?

9 A. No.

10 Q. Did you happen to see Mr. Frankenberg's testimony at  
11 page 1,204 of the transcript, that it was widely understood  
12 in the software industry that beta products are of  
13 prerelease quality, have not been fully tested, and may  
14 contain errors and omissions?

15 A. I don't disagree with that. I think that is what I  
16 just got through saying.

17 Q. Did you also see his testimony that it was widely  
18 understood in the industry at the time as well that the  
19 maker of an operating system does not guarantee that beta  
20 products will become generally available to the public at  
21 all?

22 MR. JOHNSON: Your Honor, objection. He is not  
23 actually quoting Mr. Frankenberg's testimony. He is quoting  
24 from the disclaimer agreements as to which Your Honor  
25 instructed the jury.

1 THE COURT: If it is a quote, say where the quote  
2 is from.

3 BY MR. TULCHIN

4 Q. Well, let me ask you this, Professor Noll. I don't  
5 know if you saw page 1,208, but the question was asked of  
6 Mr. Frankenberg, was it your understanding at the time in  
7 1994 when you were C.E.O. of Novell, that when Novell got a  
8 beta version from Microsoft of what eventually became  
9 Windows 95, that the beta version might change, correct?

10 His answer was yes.

11 Did you happen to see that? I am happy to show you the  
12 transcript if you want it.

13 A. I don't recall whether I saw it, but I certainly don't  
14 disagree with it. I know what a beta version is and I know  
15 what the practice is with respect to beta versions are, and  
16 I know what the license agreement is. I have read that. So  
17 none of this is news to me. That is exactly consistent with  
18 what I said in response to your first question.

19 Q. Thank you, sir.

20 Now, I think you told me yesterday somewhere between  
21 1:00 and 1:30 that to an antitrust economist, that there  
22 can't be any harm to competition under the facts here, if  
23 the conduct at issue, the decision to withdraw support for  
24 the namespace extension APIs, did not cause any delay.

25 Do you remember that?

1 A. That is correct. I agree with that statement.

2 Q. Thank you, sir.

3 Do you also agree that it was common in the software  
4 industry at the time for companies to experience delays when  
5 developing new software products?

6 A. Delays happen. In fact, Windows 95 was delayed by  
7 several months.

8 Q. And delays can happen for any one of a number of  
9 reasons. Do you agree?

10 A. Well, the reason that delays happen -- there is a  
11 generic reason why they happen, which is that the code is  
12 not finished, and the code cannot be finished for one of two  
13 reasons. One reason is that it is more difficult to code a  
14 particular functionality than you thought it was going to  
15 be, and the other is that the platform that you're intending  
16 to run it on changes and it causes you to revise it at the  
17 last minute. Those are the two reasons why software  
18 releases can be delayed.

19 Q. Well, certainly you're aware, are you not, that prior  
20 to October of '94 Novell, and WordPerfect before that, were  
21 at times late in coming out with products for certain  
22 platforms?

23 A. Everybody is occasionally late, yes. All software  
24 vendors tend to -- there are occasions when they release  
25 software late.

1 Q. Will you agree that in 1994 Novell, which had acquired  
2 WordPerfect in June, was working on coming out with new  
3 versions of WordPerfect, QuatroPro and Perfect Office that  
4 were written to the Windows 3.1 platform, the older 16 bit  
5 version of Windows?

6 A. Yes, they were producing an upgrade to their software  
7 that ran on 3.1. They were producing 6.1.

8 Q. And from your review of the record, are you aware that  
9 as of August of 1994 Novell had put very few resources on  
10 the Windows 95 project, that is, developing versions of  
11 WordPerfect, QuatroPro and Perfect Office that would run on  
12 the new 32 bit version of Windows?

13 A. That is correct. Their principal resources were their  
14 last upgrades to 3.1.

15 Q. Are you aware as well, Professor, that as of August of  
16 1994, one of the issues for Novell at the time was getting  
17 company resources focused on QuatroPro?

18 A. That is one of the issues they were doing, yes, is  
19 focusing on QuatroPro and upgrading QuatroPro.

20 Q. That was an issue for Novell at the time, was trying to  
21 get resources placed on the QuatroPro project, the new  
22 version of QuatroPro that would run on Windows 95?

23 A. Well, I am not sure what you mean by getting resources,  
24 but one of the major issues was what would they do with  
25 QuatroPro to upgrade it to something that would take

1 advantage of the 32 bit processor.

2 Q. And you're aware, of course, that as Mr. Frankenberg  
3 testified, on November 7th, page 1,071, when Novell bought  
4 QuatroPro from Borland, some of the QuatroPro developers  
5 left, they quit and went to get new jobs, correct?

6 A. My recollection was that the quitting of QuatroPro  
7 people was mainly later, but there were some that quit then,  
8 yes.

9 Q. Am I right as well, Professor Noll, that by December of  
10 1994 Novell recognized that a release date for QuatroPro of  
11 September 30th was barely achievable with all of the  
12 resources, all available resources that might be put on  
13 QuatroPro?

14 MR. JOHNSON: Your Honor, I rise to object. We  
15 seem to be reviewing their version of the facts without even  
16 a real question. It is outside the scope of anything Dr.  
17 Noll has testified about in this case.

18 MR. TULCHIN: I would be happy to show him a  
19 document, Your Honor.

20 MR. JOHNSON: If we are ever going to finish this  
21 trial, perhaps some questions as to his testimony --

22 THE COURT: I have given up on finishing the  
23 trial.

24 MR. TULCHIN: We will finish, Your Honor. I  
25 promise.

1 BY MR. TULCHIN

2 Q. Professor Noll, let me hand you Defendant's Exhibit  
3 211.

4 Let me ask you first, and I think we can agree on this,  
5 for Novell to release Perfect Office, a version of Perfect  
6 Office for Windows 95, QuatroPro for Windows 95 had to be  
7 finished, correct?

8 A. Yes. It had to be a product that they would be willing  
9 to release to run on Windows 95, yes. It didn't have to be  
10 perfect, but it had to be something that would be a well  
11 reviewed product that would run on Windows 95.

12 Q. Right. Now, Exhibit 211, Defendant's Exhibit 211 does  
13 not have a date on it, but I think we can tell pretty much  
14 when it was written. If you look at page 5 it says at the  
15 top --

16 THE COURT: I'm going to let you get into this,  
17 but Mr. Johnson has a point. Just don't review all of the  
18 testimony.

19 MR. TULCHIN: We won't, Your Honor. This goes to  
20 his testimony yesterday on direct --

21 THE COURT: I understand --

22 MR. TULCHIN: -- about delay.

23 THE COURT: There is always a trade off.

24 MR. TULCHIN: Okay.

25 BY MR. TULCHIN

1 Q. You'll see at the very top appendix A, Professor Noll.  
2 Storm is the code name for the Perfect Office release to  
3 follow the Perfect Office 3.0 product that is shipping  
4 December 1994.

5 Do you see that?

6 A. I see that, yes.

7 Q. And that was Perfect Office 3.0, as you know, and it  
8 did ship in December of '94. Will you agree with me that we  
9 can tell from the tense of this document that the product  
10 had not yet shipped?

11 A. The document was written sometime in the fall of 1994  
12 after the namespace extensions had been withdrawn and before  
13 Perfect Office 3.0 had been released, and it is the first  
14 planning document for how to deal with the fact that  
15 namespace extensions won't be there, because it requires  
16 starting over on the part of the code that interconnects  
17 with Windows 95.

18 Q. Professor, there is nothing whatsoever in this  
19 document, is there, and it goes on for, let's see, 15 pages,  
20 nothing in any of the 15 pages anywhere that refers to  
21 withdrawal of support for the namespace extension APIs? Am  
22 I right?

23 A. There is nothing in the document about that, but there  
24 has been testimony about the document. Moreover, the  
25 restarting on the part of the code that connects with

1 Windows 95 was something that was instigated by the  
2 withdrawal of the namespace extensions, so it has to be in  
3 that time period.

4 Q. Well, good, we have the time period, the fall of '94.  
5 You know the testimony of Adam Harral to the effect that  
6 QuatroPro, the QuatroPro product itself wasn't dependent on  
7 the namespace extension APIs --

8 MR. JOHNSON: Can we have a page reference,  
9 please.

10 BY MR. TULCHIN

11 Q. -- only shared code was. Am I right?

12 MR. JOHNSON: Do you have a page reference to give  
13 us for that testimony?

14 BY MR. TULCHIN

15 Q. Am I right?

16 A. Shared code is what I was referring to, yes. Shared  
17 code is the part that has to be completed. QuatroPro, like  
18 WordPerfect, is supposed to be a self-contained program that  
19 through shared code then can be run on multiple platforms.  
20 It is not quite right to say that it is not part of  
21 QuatroPro, because if you're going to sell QuatroPro as a  
22 standalone product it has to have the component of shared  
23 code that connects it to the operating system.

24 But, nonetheless, the part that has to be redone is how  
25 you connect the actual program that performs a function,

1 whether it is the word processor or the spreadsheet, to the  
2 operating system and that is the shared code.

3 Q. Can we look at the first page of Exhibit 211, Professor  
4 Noll?

5 MR. JOHNSON: Do we have a page reference for Mr.  
6 Harral?

7 MR. TULCHIN: We'll get that, Mr. Johnson. I will  
8 show it to you. I would be happy to. I don't have it at my  
9 fingertips.

10 BY MR. TULCHIN

11 Q. Professor Noll, project proposals for Storm. Do you  
12 see that, sir, the first page?

13 A. Yes.

14 Q. And proposal one, and there are three proposals set  
15 out, and you're familiar with the document, right?

16 A. Yes. I have read this document and I remember it.

17 Q. Proposal one on the first page has a column on the left  
18 entitled problems.

19 Do you see that?

20 A. Well, the document is so small on the screen I can't  
21 read it. I guess I can read this one here.

22 Q. I gave you a hard copy, sir.

23 A. Yes.

24 Q. Let me know if you need --

25 A. Which one do you want me to read, number two,

1 QuatroPro?

2 Q. All I asked you was whether there was a column on the  
3 left entitled problems?

4 A. Yes.

5 Q. The second item below that says QuatroPro, QP, believes  
6 this is barely achievable with all of their resources and  
7 with no added functionality, correct?

8 A. That is correct.

9 Q. That was the strategy for releasing Perfect Office on  
10 September 30th of '95.

11 Do you agree with me?

12 A. This was as of the fall of 1994, QuatroPro thought it  
13 was barely possible to finish in the year. That is what  
14 they said there. That is not what they said later on and it  
15 is not what actually happened.

16 Q. We're going to get to that. I'm just trying to  
17 establish what you just said, that in the fall of '94  
18 QuatroPro believes that it is barely achievable to make a  
19 September 30th deadline, right?

20 A. That is correct.

21 Q. Okay. Now, am I correct that as of February of 1995,  
22 just a few months later now, there is a document reflecting  
23 that QuatroPro was still working on international versions  
24 of the old product that had been released in the fall, the  
25 QuatroPro product for Windows 3.1?

1 A. Well, yeah. That is simply language translation. That  
2 is what they were doing was translating into foreign  
3 languages.

4 Q. Yes. Language translation, and that was a major  
5 problem, was it not, for the QuatroPro group?

6 A. I don't think it was a major problem. Those people who  
7 know the languages have to do their job and do it, and it is  
8 true for every program and it is typical for software to be  
9 released at different dates in different countries.

10 Q. Can I bring you Exhibit 219, sir. This is entitled  
11 notes from Storm coordination meeting, February 2nd of 1995.

12 Have you seen this before?

13 A. Yes.

14 Q. You'll see in the first page that in February the next  
15 version of Perfect Office --

16 A. Where are you? I don't know where you are.

17 Q. I'm sorry, sir. Second paragraph under dates --

18 A. Next version of Perfect Office to ship 11-30?

19 Q. Right. So by February the proposed ship date for  
20 Perfect Office had been moved back to November 30th,  
21 correct?

22 A. That is what this document says, yes. Yes.

23 Q. On the second page of the document, just about midway  
24 down, you'll see under product notes QuatroPro folks still  
25 working on international versions of QuatroPro 6.0.

1 Have you got that?

2 A. Yes.

3 Q. That was the version of QuatroPro 6.0 that had come out  
4 in the fall of '94, right? Is that right?

5 A. Yes.

6 Q. And it was written for Windows 3.1?

7 A. Yes.

8 Q. Okay.

9 A. That doesn't require rewriting the whole program. It  
10 just means changing the interfaces to be in another  
11 language. It is not rewriting the whole program.

12 Q. Professor, I don't think I asked you whether it was. I  
13 am pointing out to you that as of February the QuatroPro  
14 folks were still working on international versions of the  
15 old product. And you understand, do you not, that not all  
16 international versions of the old product had even gone out  
17 yet as of February?

18 A. Of course that is --

19 MR. JOHNSON: Your Honor, I rise again. All this  
20 is going to do is require us to go through Mr. Gibb, who is  
21 the appropriate person to ask these questions, and put up  
22 all his testimony with respect to these issues. This is an  
23 antitrust economic expert. This is not a fact witness.

24 THE COURT: Why are you getting into this  
25 testimony with this witness?

1 MR. TULCHIN: Well, Your Honor, if I could have a  
2 little leeway here I would appreciate it. The reason I'm  
3 getting into it, and I don't want to argue in front of the  
4 jury, is because Professor Noll was asked on direct about  
5 delay, and the documents that I intend to go through deal  
6 directly with the reason for delay.

7 THE COURT: But it seems to me that that is  
8 already in evidence and you can argue that to the jury. I  
9 don't think you have to examine the witness about it. He  
10 said what he said and you have a contrary view based on what  
11 caused the delay.

12 MR. JOHNSON: Thank you, Your Honor.

13 MR. TULCHIN: Your Honor, I will move through  
14 this, if you tell me to do that --

15 THE COURT: Yes. I would rather have you move on.  
16 This is just going to -- I mean, the evidence is the  
17 evidence with respect to the position that caused the delay,  
18 and I think you can argue that to the jury.

19 MR. TULCHIN: I would like to ask just a few more  
20 questions on this subject, if I may.

21 THE COURT: Just a few more.

22 MR. TULCHIN: I will try to be brief.

23 BY MR. TULCHIN

24 Q. Professor Noll, is it correct from the evidence that  
25 you have reviewed, that Novell had targeted dates for

1 QuatroPro in the fall of '95, but due to QuatroPro  
2 localization delays QuatroPro was moved back to December of  
3 '95?

4 A. Localization delays refers to translating it into  
5 foreign languages, yes. And there were going to be delays  
6 in foreign language releases. I agree with that.

7 Q. And you agree that the evidence and the record here  
8 shows that it was due to QuatroPro localization delays that  
9 the Perfect Office shipping date was moved back to December  
10 of '95?

11 A. I do not agree that the release date of Perfect Office  
12 was determined by QuatroPro. I don't believe the summation  
13 of the evidence shows that. But, in any case, I am relying  
14 completely on the analysis -- the testimony of WordPerfect  
15 witnesses and Mr. Alepin for my view of what the cause of  
16 the delay was. I did not offer any independent opinion  
17 about that.

18 MR. TULCHIN: Well, with the Court's indulgence, I  
19 would like to show this witness one more document on this  
20 subject.

21 THE COURT: Indulgence it is.

22 MR. TULCHIN: I'm sorry, Your Honor?

23 THE COURT: Indulgence it is.

24 BY MR. TULCHIN

25 Q. Professor, I'm showing you Defendant's Exhibit 227.

1 This is a document that came from Novell's files in this  
2 case; isn't that right?

3 A. Yes, it is.

4 Q. And it is addressed to Bob.

5 Do you see that?

6 A. I see that.

7 Q. And will you agree with me that it was written in March  
8 of 1995 or later?

9 A. I believe that it was written sometime in the spring of  
10 '95, but I don't know the precise date.

11 Q. On the very first page of Exhibit 227, just slightly  
12 more than halfway down, do you see a paragraph numbered two?

13 Do you have that, sir?

14 A. Yes.

15 Q. And it says December '94, we all determined that after  
16 we shipped Perfect Office 3.0, and let me just stop there.  
17 That took place in December of '94, right?

18 A. Yes.

19 Q. Okay. After we shipped Perfect Office 3.0 our number  
20 one goal is to get Perfect Office on Windows ASAP. We  
21 initially targeted October '95, but due to QuatroPro  
22 localization delays we moved the date back to December of  
23 '95.

24 Do you see that?

25 A. As of March of 1995 that was what they said.

1 Q. Right. And as of March of 1995 the decision that  
2 Mr. Gates made to withdraw support for the namespace  
3 extensions had already taken place something like six months  
4 earlier, correct?

5 A. October of '94 is when the namespace extensions were  
6 withdrawn. The issue is what determined the delay is the  
7 relevant question, and there is other evidence you are not  
8 showing, and testimony you're not referring to, that says in  
9 fact it was the connection to Windows 95 to produce full  
10 functionality that was, quote, the critical path, unquote,  
11 of the project. That was what determined the timing of the  
12 release.

13 There is also other information in the record that says  
14 that the QuatroPro people were overly pessimistic in their  
15 expectations about when they could finish and that, indeed,  
16 they did finish their product sooner than the documents  
17 anticipated.

18 Q. Professor Noll, is it correct that there is nothing in  
19 Exhibit 227, no mention anywhere of any delay caused by  
20 Microsoft's decision to withdraw support for the namespace  
21 extension APIs?

22 A. I don't think namespace extensions is mentioned here.  
23 What they are discussing is various problems they have in  
24 bringing the product to market. They are not discussing  
25 Microsoft.

1 Q. And am I correct, sir, that you don't know of any  
2 document that states that the reason for delay, the reason  
3 for moving the date back to December of '95 had anything to  
4 do with the namespace extension APIs?

5 A. The documents discuss the shared code, writing the  
6 shared code and revising the shared code, and so the issue  
7 is when would the shared code have been finished if the  
8 namespace extensions still would have been there, versus when was  
9 it actually finished given the withdrawal of the namespace  
10 extensions? That change is due to the withdrawal of the  
11 namespace extensions. That differential was due to the  
12 namespace extensions.

13 So when they talk about shared codes, they are talking  
14 about writing the code that is necessary to overcome the  
15 withdrawal of namespace extensions, among other things.

16 Q. Well, I want to ask about that in a moment, but I just  
17 want to be clear about something. This document says that a  
18 date was moved back, a date for the release of Perfect  
19 Office, due to QuatroPro localization delays, correct?

20 A. That is what it says.

21 MR. JOHNSON: Your Honor, how far does the  
22 indulgence extend on this one?

23 THE COURT: That is a good question.

24 BY MR. TULCHIN

25 Q. Is there, Professor --

1 THE COURT: It seems to me that this is all fair  
2 argument. I'm not sure, and this witness has testified that  
3 he relied upon other evidence on the delay issue, and I  
4 don't see why rehashing this is getting us anywhere. You're  
5 free to argue it. Obviously it is a disputed point. I  
6 don't see why, since this witness's knowledge of this is all  
7 derivative based upon what he has heard and the testimony  
8 that he has reviewed, I don't think this is advancing the  
9 ball.

10 It is sustained.

11 MR. JOHNSON: Thank you, Your Honor.

12 THE COURT: It is not irrelevant, but I mean the  
13 issue is not irrelevant, but just don't go into it with this  
14 witness.

15 BY MR. TULCHIN

16 Q. Professor Noll, would I be right, sir, that if Novell  
17 was faced with three choices about how to proceed after  
18 Microsoft decided to withdraw support for the namespace  
19 extension APIs, and if it turned out that Novell simply made  
20 a bad choice about which of the three paths to take, that to  
21 an antitrust economist that wouldn't raise any competition  
22 issues?

23 A. Not necessarily, because you have to ask the question  
24 why were they faced with those three choices? If the three  
25 choices put them into a box that they had no reasonable way

1 to get out of, then the fact that among the three bad  
2 choices they picked not the best would not be the crucial  
3 fact. The crucial fact was why were they put into a  
4 position to have to make one of those choices to begin with.

5 Q. Well, you are aware, are you not, of the three choices  
6 and what the developers have testified to about those  
7 choices?

8 A. Yes, I am aware of the testimony on that issue, and it  
9 is also discussed in one of the documents you showed me.

10 MR. TULCHIN: Can we show slide 123.

11 BY MR. TULCHIN

12 Q. Mr. Harral testified here on October 20th that one  
13 option would be to continue to use the documentation that  
14 Novell had for the namespace extensions APIs.

15 Do you remember that?

16 A. Yes.

17 Q. You have seen that?

18 A. I have seen that.

19 MR. JOHNSON: Your Honor, despite your instruction  
20 we continue to go over the evidence and not --

21 THE COURT: I will let it go. There may be some  
22 relevance. Go ahead.

23 MR. TULCHIN: Well, Your Honor, if counsel is  
24 saying that this witness's testimony is not connected to the  
25 evidence at all, I will move on.

1 THE COURT: He is not saying that and you know  
2 that he is not. It is just that his knowledge is  
3 derivative.

4 Go ahead. You can ask a few more.

5 BY MR. TULCHIN

6 Q. Let's look at slide 124.

7 You remember seeing this testimony from Mr. Harral --

8 A. Yes, I do.

9 Q. -- about the first option utilizing the namespace  
10 extension APIs?

11 A. Option one was to use them, yes, and that was rejected.

12 Q. Right. And Mr. Harral testified on October 24th that  
13 Novell in fact tied into the namespace extension APIs and  
14 they were being used before October, correct?

15 A. Yes. That is exactly the point. The shared code was  
16 almost done in October of 1994 when the APIs were withdrawn.

17 Q. In fact, the testimony on slide 124 from Mr. Richardson  
18 is that Steve Giles, in working with the documentation that  
19 had been received earlier in June, had already written  
20 Novell's own file open dialogue that made use of the  
21 namespace extension APIs, correct?

22 A. Exactly. It was precisely this that scared Microsoft,  
23 the fact that they were doing such a good job with it.

24 Q. Well, Professor, excuse me, you have no information at  
25 all, do you, that Microsoft knew that Steve Giles had

1 actually written that code?

2 A. Of course I don't know whether they knew who had  
3 written it, but I know it was demonstrated, yes, before  
4 Microsoft.

5 Q. Well, in fact, the evidence is that when Microsoft  
6 asked Novell about withdrawal of support for the APIs,  
7 Mr. Struss, who was the contact with Novell, wrote an e-mail  
8 saying that WordPerfect appears to be okay with that  
9 decision.

10 You have seen that, haven't you?

11 A. I have seen that and it is not credible to me.

12 Q. It is not credible that Mr. Struss wrote that?

13 A. That characterization of WordPerfect can't possibly be  
14 right, because it required them to start all over with the  
15 shared code. They had already almost finished it and then  
16 they had to start over. It is completely implausible to me  
17 that among the people writing shared code they didn't care  
18 that namespace extensions had been withdrawn.

19 Q. So it is your testimony that you know these facts  
20 better than Mr. Struss who talked to WordPerfect; is that  
21 correct?

22 A. No. What I'm saying is that there are lots of people  
23 who are testifying about what namespace extensions  
24 withdrawal did to WordPerfect. You find one person who  
25 wrote one line that you like and that is all you are

1 quoting.

2 Q. But where is the line -- where is the evidence that in  
3 October or November of 1994 anyone at Novell ever said  
4 anything to Microsoft to the effect that we object to the  
5 withdrawal of support for those APIs?

6 MR. JOHNSON: Your Honor, once again --

7 THE COURT: Well, there wasn't an objection to the  
8 prior question, and this is fair follow-up in light of the  
9 answer that was given.

10 Go ahead.

11 THE WITNESS: What I know is what I said about  
12 them having to redo the shared code. I am not going to try  
13 to put myself in the position of the WordPerfect people. I  
14 am relying on what they testified to, which is that they  
15 knew at the time that they had to start over, or they could  
16 rely upon the APIs and push forward, but that was extremely  
17 dangerous, because it would mean that they may never even  
18 get a product out that works on Windows 59. And so instead  
19 of doing that they chose to try to work around it and start  
20 over with shared code.

21 BY MR. TULCHIN

22 Q. You are aware of the testimony that option two was to  
23 use the Windows file open dialogue, correct?

24 A. I'm aware of that, and I'm also aware of the testimony  
25 that had they done that they would have had to have

1 retrogressed in the quality of their product, because that  
2 would have made their products worse than the versions that  
3 were on Windows 3.1.

4 Q. Let's look at slide 126. You remember this testimony  
5 from Mr. Harral and you have seen this, October 24th. Mr.  
6 Harral was asked whether Novell could have come out with a  
7 product in '95 that utilized the Windows common file open  
8 dialogue.

9 A. Yes.

10 Q. That was a choice that Novell had, and he answered that  
11 was the choice that they had.

12 A. I agree that he did answer that was one thing that they  
13 could have done and I agree with that, that that is one  
14 thing they could have done.

15 Q. Let's look at the next slide, 127, which adds the  
16 testimony of Mr. Gibb. October 26. What Mr. Gibb said in  
17 this courtroom on October 26 about option two, using the  
18 Windows file open dialogue, is that it would have been easy  
19 to do that. He says it would be a huge step backwards for  
20 our customers, correct?

21 A. That is right. That is what I was referring to, was  
22 degrading the quality of the product and causing it to have  
23 bad reviews.

24 Q. There is a point -- excuse me. Let me strike that and  
25 withdraw that.

1           Isn't it correct, Professor, that sometimes a company  
2 faces difficult choices in business, correct?

3           A.    Yes, there are difficult choices in life in general.

4           Q.    If it was absolutely critical for Novell to get a  
5 product out at about the time Windows 95 was released, which  
6 turned out to be August of 1995, if it was so critical for  
7 Novell, Novell could have done that by using option two,  
8 correct?

9           A.    They could have done it but it would have been a  
10 disaster.  If you get badly reviewed products on Windows 95  
11 their product would have been dead in the water.

12          Q.    Would it be a disaster not to get the products out at  
13 all?

14          A.    They were faced between -- they had two different ways  
15 to commit suicide.

16          Q.    Am I right, Professor Noll, that the document we looked  
17 at a few moments ago, says that the reason for delay was  
18 QuatroPro, not shared code at all?

19          A.    That is not true.  That is in this document that you  
20 cite, but there is other information that says that the  
21 critical path was shared code.  The thing that was causing  
22 the delay was shared code.

23          Q.    That information that you're referring to is just the  
24 testimony of the two developers, correct?

25                   THE COURT:  I am going to object.  Move on to

1 something else. Clearly the witness knows the testimony and  
2 all of his information is based upon the testimony.

3 Move on to something else.

4 BY MR. TULCHIN

5 Q. Professor, I think you said yesterday that OS2 and  
6 Linux and Unix were operating system competitors to Windows,  
7 correct?

8 A. Yes. In this time period of '94 to '96 Linux wasn't  
9 really a competitor at the beginning of that period. It had  
10 been introduced by the end.

11 Q. And am I correct that OS2 was not an effective  
12 competitor?

13 A. The release of OS2 that was contemporaneous with  
14 Windows 95 was not an effective competitor.

15 Q. So the release of OS2 that you're referring to, that  
16 was in 1995; is that right?

17 A. Yes.

18 Q. And I think what you have just said, and let me see if  
19 I have this right, is that the release of OS2 in 1995 was  
20 not much of a threat to Windows because OS2 was not very  
21 attractive?

22 A. I didn't say it wasn't attractive. I said it wasn't an  
23 effective competitor.

24 Q. Well, by effective competitor you mean on the merits  
25 people were choosing Windows?

1 A. I didn't say on the merits people were choosing  
2 Windows.

3 Q. I know you didn't say that, but I'm asking you if that  
4 is what you mean when you say that OS2 was not an effective  
5 competitor?

6 A. I disagree that they lost on the merits. They lost  
7 through the anticompetitive conduct by Microsoft.

8 Q. Well --

9 A. You know, I can go into full blown the history of OS2,  
10 but the product reviews of OS2 were good. It was the  
11 inability to get it on any platform over than an IBM PC that  
12 was the thing that determined the fate of OS2.

13 Q. OS2 was certainly on the IBM platform, all the IBM PCs,  
14 right?

15 A. It was on IBM PCs and IBM was at that time a little bit  
16 less than ten percent of the market and so, yes, they had a  
17 portion of that part of the market and that was it.

18 Q. In fact, I know you have testified before, Professor,  
19 that IBM chose to install Windows on many of its own PCs in  
20 this same time period, 1995?

21 A. In 1995 all OEMs, including IBM, had to have the  
22 ability to install Windows 95 on their PCs in order to be  
23 significant players in the market because it was the  
24 dominant operating system.

25 Q. Now, Professor Noll, am I correct that the conduct

1 directed at Netscape, the conduct to which you referred  
2 yesterday, didn't have any effect on the market until after  
3 March 1 of 1996?

4 A. Netscape as a product did not have a substantial -- did  
5 not undermine -- was not in a position to have undermined  
6 the monopoly in operating systems in 1995 to early '96, yes.  
7 The conduct that was undertaken had a long term effect on  
8 Netscape, but the impact had not been felt to any  
9 significant degree by March 1st, 1996.

10 Q. Is that a yes to my question that there was no --

11 THE COURT: I think he answered your question.

12 MR. TULCHIN: I am not sure, Your Honor.

13 THE COURT: I am.

14 Move on.

15 BY MR. TULCHIN

16 Q. Is it correct, Professor Noll, that even Netscape's  
17 browser by itself posed no threat to Microsoft?

18 A. By itself it posed no threat. It had to be in  
19 conjunction with Java. That was what posed the threat.

20 Q. And is it also correct, sir, that QuatroPro by itself  
21 posed no threat to Microsoft?

22 A. It is true that in and of itself, had nothing happened  
23 to any other product, there is no single product out there  
24 that threatened Microsoft's monopoly in the operating system  
25 market.

1 Q. And that would include WordPerfect?

2 A. Yes.

3 Q. And Perfect Office?

4 A. That is correct. Had all the others not experienced  
5 any anticompetitive conduct, then a single product having  
6 been withdrawn would not have effected competition in the  
7 operating system market.

8 Q. Professor Noll, yesterday there were a couple of places  
9 where in your answer, or maybe in the questions, there was  
10 reference to whether certain products had the potential to  
11 threaten the applications barrier to entry that you say  
12 protected Microsoft.

13 Do you remember that?

14 A. I remember talking about the issue, but I am not sure  
15 that I used that particular line of words. But, in any  
16 case, I remember the general subject area.

17 Q. And just to be clear, it is not your testimony that  
18 WordPerfect or QuatroPro or Perfect Office, either  
19 separately or the three of them together, actually had the  
20 potential to threaten Microsoft's position in the PC  
21 operating system market?

22 MR. JOHNSON: Your Honor, I am going to rise for  
23 an objection. This gets into a legal issue which has  
24 already been decided by the Fourth Circuit, and we seem to  
25 be going down a path that was objected to by the court.

1 THE COURT: Overruled. I think these are facts.  
2 Go ahead.

3 THE WITNESS: Had nothing else happened to anybody  
4 except Novell then that statement is true, but it is not  
5 true in the following sense, given that all these other acts  
6 had occurred, the WordPerfect platform is half of the PCs  
7 and the threat of WordPerfect was if -- if Novell could have  
8 succeeded in maintaining its platform share, its installed  
9 base share, then it would have been a significant threat to  
10 Microsoft in a world in which they were the only ones left.  
11 Nothing had happened to them, but OS2 had been knocked out  
12 and Netscape and Java had been knocked out, and the only  
13 thing left functioning is Novell, in that case Novell would  
14 have been a significant threat to the Microsoft operating  
15 system monopoly.

16 But in a world in which all the other people are  
17 still operating and competing, then the loss of Novell would  
18 not have been a significant factor in effecting competition  
19 in the operating system market.

20 BY MR. TULCHIN

21 Q. So in the real world, the world as it existed, nothing  
22 that Microsoft did that might have effected Perfect Office  
23 or WordPerfect or QuatroPro threatened Microsoft's position  
24 in the PC operating systems business, correct?

25 A. No, because in the world that existed these other

1 threats have been eliminated. In particular the Netscape  
2 Java threat is the biggest one, and if that has been  
3 eliminated then the next biggest one is WordPerfect, Novell.

4 Q. Professor, you have testified, haven't you, that  
5 monopoly power can arise because of superior skill or  
6 superior foresight or just because one company has the best  
7 product, correct?

8 A. That is correct.

9 Q. And you have not testified here in this case or  
10 elsewhere that Microsoft's monopoly in operating systems was  
11 not achieved in anything but a competitive way, correct?

12 A. Again, that is misleading. I said that I had not  
13 analyzed the issue prior to 1987, and I assume that their  
14 position in 1987 was due to superior efficiency. But then  
15 since 1989 their position has not only been maintained, but  
16 in the mid 1990s was enhanced by anticompetitive conduct,  
17 increased by anticompetitive conduct, so that  
18 characterization of my testimony is completely false.

19 Q. Well, I don't think so, sir. I mean, there is a  
20 distinction, is there not, between acquiring something and  
21 maintaining it? That is the distinction that you were just  
22 making. Microsoft's market share in the PC operating system  
23 market has been very high going back to the mid '80s,  
24 correct?

25 A. Yes, but it declined from the late '80s to the mid '90s

1 and then it came back.

2 First of all, it declined. The operating system market  
3 was becoming more competitive in the early 1990s, and then  
4 through a series of anticompetitive acts Microsoft regained  
5 the position that it had in 1987.

6 Q. Well, let me just see if we can understand a couple of  
7 basic things. You have testified in deposition that the  
8 market power enjoyed by Windows 3.0 was largely the result  
9 of the quality of the product, correct?

10 A. Yes, I testified about that, but it is also the case  
11 that Windows 3.0 was supposed to be for OS2, and it was kept  
12 secret by Microsoft that that product was going to be  
13 released separately by them instead as part of OS2.

14 Q. Professor, let me hand you a copy of your deposition in  
15 this case. It was taken in 2009.

16 Could I ask you, sir, to turn to page 200. Feel free  
17 to look at page 199 or any other page that you want.

18 A. Okay. I have got it.

19 Q. At page 200, line 6, and you'll see the deponent and  
20 that is you, correct?

21 A. Yes.

22 Q. And you say here, yeah, I mean I think what I said here  
23 is that in this report, with the reply report was similar to  
24 that. I said that the market power enjoined by Windows 3.0  
25 was largely the result of the quality of the product. And

1 then you go on to say Windows 3.0 -- instead of being  
2 Windows 3.0 been the components of OS2, and OS2 been  
3 released at the same time, the same statement would have  
4 been true. That would have been the dominant product,  
5 correct?

6 A. Yes. That is exactly what I answered the first time.

7 Q. Right. So Windows 3.0, as you have testified, was a  
8 revolutionary technological event, correct?

9 A. Yes, it was in conjunction with a breakthrough in the  
10 microprocessor, and it had operating system functionality  
11 and took advantage of advances in the microprocessor that  
12 were occurring simultaneously. Personal computers had  
13 combined that microprocessor with an operating system that  
14 could take advantage of it, were a significant forward jump  
15 in the quality of personal computers.

16 Q. Let's just see if we can do it this way. Windows 3.0  
17 came out in 1990, May of '90, right?

18 A. That is correct.

19 Q. And you have agreed it was a revolutionary  
20 technological leap, true?

21 A. That is correct.

22 Q. And you have also agreed that every single version of  
23 Windows that was released thereafter in the 1990s was an  
24 improvement, true?

25 A. I believe -- well, yes, I believe every version of

1 Windows released in the 1990s was an improvement over the  
2 previous version, yes.

3 Q. Correct. And Windows 95 you have talked about as the  
4 other big one besides Windows 3.0, correct?

5 A. Yes, because that was the 32 bit microprocessor, and  
6 that was an operating system to take advantage of that  
7 functionality, and also it was going to be extremely  
8 important combined with that microprocessor.

9 Q. In fact, in the same deposition you told me that  
10 Windows 3.0 and Windows 95 were the two biggies?

11 A. The two biggest advances in personal computer  
12 technology were those two operating system combined with  
13 those two microprocessors.

14 Q. Of course in this case Mr. Harral and Mr. Richardson  
15 and Mr. Gibb also testified that Windows 95 was a  
16 significant step forward, correct?

17 A. That is correct. I don't know that anybody disagrees  
18 with the notion that an operating system that could take  
19 full advantage of the 32 bit microprocessor was a  
20 substantial step forward.

21 Q. Now, am I correct, Professor Noll, that what you have  
22 said in this case, is that you think that the market share  
23 of Perfect Office, had it come out in 1995, would not have  
24 been materially different than the market share that Perfect  
25 Office had on Windows 3.1 near the end of the life of

1 Windows 3.1?

2 A. That is my expectation, yes, although I have not  
3 attempted to quantify that myself. That is Dr. Warren  
4 Bolton's turf. But, yes, there is no reason to anticipate  
5 that there would have been a substantial difference in its  
6 share on 3.1 and its share on 95.

7 Q. Right. And the Perfect Office share on Windows 3.1 as  
8 of the summer of 1995, that would be what you referred to as  
9 the end of the life of Windows 3.1, correct?

10 A. I'm sorry. What year did you say?

11 Q. I'm sorry. Your testimony was that you would have  
12 expected -- you would expect that the market share that  
13 Perfect Office would get on Windows 95, had it been out in  
14 1995, would have been about the same as the Perfect Office  
15 3.0 market share on Windows 3.1 near the end of the life of  
16 Windows 3.1?

17 THE COURT: I think you added the summer of '95.

18 BY MR. TULCHIN

19 Q. Right. I'm just asking that near the end of the life  
20 would be the summer of '95?

21 A. Well, people are not being a lot of any product  
22 associated with 3.1 right in the face of the imminent  
23 release of Windows 95. So what I meant when I used the term  
24 at the period at the end of 3.1, I was not referring to the  
25 last month, I was referring to the last couple of years.

1 The crucial event is the release of WordPerfect 6.0 and the  
2 version of Perfect Office that goes on Windows 3.0, and  
3 those occur earlier than that.

4 And I also, as you know, did not characterize this with  
5 respect specifically to Perfect Office, but it is the shares  
6 in word processors selling it independently versus selling  
7 it in an office suite, and in selling QuatroPro  
8 independently and selling it as part of a suite.

9 Q. Could you look at page 123 of your deposition in this  
10 case.

11 A. 1.3?

12 Q. 123. September 10th, 2009. Starting at line 17 you  
13 were asked this question and you gave this answer.

14 Question, do you have any opinion as to whether or not  
15 Perfect Office's share of this category, office suites,  
16 would be significantly higher if Perfect Office had been  
17 released in October of '95 instead of 1996? Answer, again,  
18 the precise estimate of that is not my task, but there is no  
19 reason to believe that their market share in Windows 95  
20 would have been materially different than the market share  
21 in Windows 3.1 near the end of the life of Windows 3.1.

22 Do you see that, sir?

23 A. Yes. That is what I said in answer to your first  
24 question, but I am saying more now than I said then, because  
25 there is no follow up, and what I'm saying is what I meant

1 by the end of the life is not the last month, because  
2 obviously the last month before there is a brand new  
3 product, Windows 95 with a 32 bit microprocessor, is not a  
4 good indicator of what was happening on that platform during  
5 the point it was actually on the platform. You wouldn't  
6 look at just the last month. You would look at the last  
7 couple of years.

8 Q. Well, in fact, near the end of the life refers to the  
9 summer of 1995, does it not?

10 A. If you want to refer to it that way that is fine, but  
11 that is not the way I thought of it and that is not the way  
12 I do things. What I think of it as is the last couple of  
13 years on that platform. Remember Windows 3.0 was introduced  
14 in 1990, and so what I am talking about is the end of the  
15 life of that family of operating systems. I would say the  
16 last 18 months to two years would be the end of the life.

17 Q. Wasn't it correct that Novell had about eight percent,  
18 Perfect Office had about eight percent of the market in 1995  
19 up until August?

20 A. Yes. That is why the right way to think about Novell's  
21 products is not to separate the office suite from the  
22 separate sales of the software. The combined shares of  
23 those two are higher than that. That is the installed base,  
24 and that determines the installed base and that determines  
25 the advantage due to switching costs that Novell enjoyed

1 with those customers, as those who already have those  
2 products on their computers, regardless of whether they are  
3 bought separately or as part of the suite.

4 Q. Did you answer my question, yes, that Perfect Office's  
5 share of the suite market in '95 up until August was about  
6 eight percent?

7 A. The reason I had to answer it long is there is no such  
8 thing as a suite market. There are markets for categories  
9 of software like word processors and spread sheets. A suite  
10 is a bundle. It is a product that is bundling things that  
11 themselves are sold in a separate product market. So share  
12 of a suite market is an economically meaningless concept.

13 Q. Well, Professor, let me change my question. I think  
14 you may have answered the first one yes, but let's try it  
15 this way.

16 Instead of using the word market we use the word  
17 category. Is it correct that Perfect Office's share of the  
18 suite category in 1995 up until August was about eight  
19 percent?

20 A. I do not have that number memorized, but I think that  
21 is roughly accurate. I have no reason to disagree with  
22 that.

23 Q. And you didn't mean to imply in one of your slides  
24 yesterday that Perfect Office's share was something much  
25 greater than that, did you?

1 A. No. The shares that I represented yesterday were  
2 actual market shares of relevant market products, they were  
3 not what you're trying to get at which is a particular way  
4 of marketing products in those markets.

5 Q. Now, Professor Noll, on direct examination yesterday  
6 counsel took you through a fair number of the findings of  
7 fact that had been issued by a court in 1999 in the District  
8 of Columbia, correct?

9 A. Correct. I did have some of those findings of fact  
10 from that case in my testimony.

11 Q. I'm sorry, sir?

12 A. I did have some of those findings of fact in my  
13 testimony.

14 Q. I wonder if you could look at finding 28. This is our  
15 slide 105.

16 This is one of those slides that, as Novell's lawyers  
17 said yesterday, is binding in this case, correct?

18 A. Yes. This is one of the findings of fact that is  
19 binding in this case.

20 Q. And you looked at it yesterday?

21 A. Yes, it was in my testimony yesterday.

22 Q. And what the court said there was that currently, and  
23 currently refers to 1999, right?

24 A. That is right.

25 Q. Currently no middleware product exposes enough APIs to

1 allow independent software vendors, ISVs, profitably to  
2 write full featured personal productivity applications that  
3 rely solely on those APIs.

4 Now, prior to 1999, am I correct that there had never  
5 been a middleware product that exposed enough APIs to allow  
6 ISVs profitably to write full featured personal productivity  
7 applications that relied solely on those APIs?

8 A. It is true that they can't serve as an operating  
9 system, which is what this statement is about. They cannot  
10 serve as an operating system.

11 Q. Well, Professor, am I right that -- I mean, this says  
12 that currently, which means as of 1999, there had never been  
13 a middleware product that had this characteristic. My  
14 question is had there ever been one before '99?

15 A. To my knowledge there has never been a middleware  
16 product that can function as an operating system and that is  
17 what this is about.

18 Q. And since 1999, and we're talking about another 12  
19 years now, 1999 to today, 2011, has there ever been a  
20 middleware product that exposes enough APIs to allow ISVs  
21 profitably to write full featured personal productivity  
22 applications that rely solely on those APIs?

23 A. Well, this is actually technically incorrect because  
24 shared code --

25 Q. I'm sorry.

1 A. Shared code actually is something that supports  
2 WordPerfect so, you know -- but it has to be connected to an  
3 operating system. You can't avoid an operating system.  
4 That is the point. Shared code does support WordPerfect,  
5 but it needs an operating system. It can't substitute for  
6 the operating system.

7 Q. Do you agree then that in the last 12 years there has  
8 never been a middleware product that has been able to  
9 supplant or replace Windows?

10 A. That is exactly what this means, that no middleware  
11 product can substitute for an operating system, and that is  
12 why they are not in the same relevant market.

13 Q. Could we look at finding of fact 29, our slide 106.

14 This is another one of those findings that is binding  
15 on the parties here, correct?

16 A. That is correct, and this is saying the same thing the  
17 last one said.

18 Q. That was going to be my question. This says the same  
19 thing?

20 A. Yes.

21 Q. It says it remains to be seen whether there will ever  
22 be a stream of full featured applications written solely to  
23 middleware, correct?

24 A. Yes.

25 Q. And it has never happened?

1 A. Well, except for this exception that I gave, but the  
2 exception that I gave still relies on an operating system.

3 Q. So in fact as of 1999 the Court here said it remains to  
4 be seen whether there will be a sustained stream of full  
5 featured applications written to middleware. And as of  
6 today it has never happened, correct?

7 A. That is what it says.

8 Q. All right. Let's look at finding 32, our slide 107.  
9 The highlighted material is to the same effect, is it  
10 not?

11 A. Yes.

12 Q. So the Court is saying here that as of 1999 there had  
13 never been middleware of the kind that you were testifying  
14 about yesterday, correct, middleware that could replace or  
15 supplant Windows?

16 A. Well, it can never be a viable alternative to incumbent  
17 Intel compatible PC operating systems. There is nothing  
18 that can replace an operating system. All that it can do is  
19 in fact intensify the competition among operating systems.  
20 And, indeed, until the 2000s nothing ever came into  
21 existence in the NetWare sphere, for example, that could  
22 have been a full replacement for an operating system.

23 Q. And nothing ever came into existence that could imperil  
24 the applications barrier to entry, agreed?

25 A. As of 1999. We do have things now, but not then.

1 Q. Well, let's look at finding of fact 77. Just before  
2 you testified yesterday, early in the morning one of  
3 Novell's lawyers, Mr. Taskier, who is not here today, read  
4 this to the jury and showed finding 77, without the  
5 highlighting, to the jury at the same time.

6 Do you remember that, sir?

7 A. Yes.

8 Q. What finding 77 says in the highlighted portion is what  
9 we were just talking about, that as of 1999 there had never  
10 been any middleware that could imperil the applications  
11 barrier to entry, agreed?

12 A. That is right.

13 Q. And that was true from 1994 through 1999, right?

14 A. Absolutely true. This is, again, a good explanation of  
15 why middleware cannot replace an operating system, it can  
16 only intensify competition among existing operating systems.

17 Q. But it is also true that as of 1999 there had never  
18 been any middleware that enhanced competition in the  
19 operating system market, any middleware that imperiled the  
20 applications barrier to entry?

21 A. Two things in your question are not the same thing.  
22 One of them is right and the other is wrong. All right.  
23 That is to say, it certainly did not imperil the monopoly  
24 position of Microsoft in the operating systems market, but  
25 it is not true that it had no effect on competition. All

1 right.

2 So, yes, Netscape Java did have an effect on competing  
3 and eliminating them was anticompetitive, but they have not  
4 yet progressed to the point where they were going to succeed  
5 in completely, you know, commodifying the operating system  
6 market.

7 Q. If I understand your answer, Professor, what you're  
8 saying is that Netscape and Java together might have become  
9 such a threat, correct?

10 A. Netscape and Java might have become a substitute for  
11 the operating system. Before that they could become a  
12 platform that commodified operating systems. Before that  
13 they could become sufficiently extensively used that they  
14 had some pro-competitive benefit in the operating system  
15 market, but didn't yet completely erode the monopoly  
16 position of Microsoft.

17 MR. TULCHIN: Could I ask, perhaps, if we could  
18 look at slide 33, your slide 33. It was put up yesterday.

19 BY MR. TULCHIN

20 Q. Am I right, Professor, that you were hypothesizing here  
21 the possibility that some third party application would be  
22 written for PerfectFit and/or appware?

23 A. I don't understand what you mean by possibility. Yes,  
24 there was -- what PerfectFit and appware did is create the  
25 opportunity to write applications that would run on this

1 platform, this middleware platform and thereby be  
2 cross-platformed.

3 Q. I'm asking you whether any third party application, any  
4 popular personal productivity application was ever written  
5 for PerfectFit and/or appware?

6 A. Well, applications were written for it, and I don't  
7 know for sure what you mean by the word popular, but if  
8 we're going to say does any application that ranks in the  
9 top few in sales in something like word processors or spread  
10 sheets, which are the major -- and e-mail and things like  
11 that, which are the major office productivity products, none  
12 of them -- there were not any applications that would have  
13 appeared on that list of top sellers.

14 Q. And to use the language in finding of fact 28, there  
15 were never any full featured personal productivity  
16 applications that were written to PerfectFit and/or appware;  
17 is that right?

18 A. Well, I don't know how to say it other than the way I  
19 said it in my previous answer. There were applications  
20 written, but they wouldn't fall into the category of things  
21 that would have threatened the applications barrier to  
22 entry, because they were top sellers in the corporate  
23 activity market.

24 Q. That was my question. There were not any applications  
25 that would threaten the applications barrier to entry that

1 were ever written to this platform, PerfectFit and/or  
2 appware?

3 A. No. Again, you left out the word third parties.  
4 Obviously --

5 Q. Correct. Of course.

6 A. Obviously WordPerfect is such an application.

7 Q. Of course.

8 A. But no third party applications.

9 Q. Right.

10 Is it correct, Professor, that to be middleware in the  
11 sense of some product or platform that could imperil the  
12 applications barrier to entry, the middleware program has to  
13 be present on all or nearly all of the PCs that use the  
14 operating system to which the application otherwise would be  
15 written?

16 A. Most, yes. Not all, but it has to have a large market  
17 share. Each individually to be a threat, as opposed to be  
18 part of a collective threat among multiple pieces of  
19 software, to be an individual threat all by yourself you  
20 have to be on most of the dominant operating system.

21 Q. And it is not correct, is it, Professor, that Perfect  
22 Office or WordPerfect or QuatroPro in 1994 or 1995 was  
23 present on all or nearly all of the PCs that used Windows,  
24 correct?

25 A. They did have in fact the highest installed base in the

1 word processor domain.

2 Q. No, on MS DOS, sir. I asked you about Windows.

3 A. On Windows, no, you are right. On Windows no, but on  
4 MS DOS plus Windows -- the operating system is the DOS part,  
5 so on the operating system yes, they did have the highest  
6 install base. But on Windows, Windows 3.1 they did not have  
7 the highest install base.

8 Q. So is it correct then that WordPerfect and QuatroPro  
9 and Perfect Office could not have been middleware in the  
10 sense that in some product that imperils the applications  
11 barrier to entry, unless those products were present on all  
12 or nearly all of the PCs that run Windows as of 1995?

13 A. Okay. Since my belief is that the relevant concept is  
14 the number, the installed base of PCs running Microsoft  
15 operating systems, the way you posed the question is not the  
16 relevant question -- is not the way to put it to answer the  
17 question. The relevant part is the installed base of  
18 existing, running personal computers that are using a  
19 Microsoft operating system, all right, or Microsoft  
20 compatible operating system.

21 From the point of view of analyzing the barriers to  
22 entry, that is the relevant concept. So when I heard the  
23 word Windows I was just thinking Microsoft operating  
24 systems, but the right way to conceptualize the applications  
25 barrier to entry problem is in terms of people who own a

1 personal computer today have a certain install base, and  
2 then they are migrating to the next platform, and if you can  
3 retain that install base, and then if you're the largest  
4 single entity in that install base you have a natural  
5 advantage, although there are switching costs, and you can,  
6 if you then become middleware, increase competition in the  
7 operating system market.

8 Q. Let's look at slide 130. This is an excerpt,  
9 Professor, from the report that you submitted in this case.  
10 It is from page 24. I'm happy to give you the full report  
11 if you want to see it.

12 THE COURT: This is just for identification?

13 MR. TULCHIN: Yes, sir. Of course. It is just a  
14 demonstrative, Your Honor. Slide 130.

15 BY MR. TULCHIN

16 Q. Professor, you say here that two conditions have to be  
17 met for middleware to become a threat to the applications  
18 barrier to entry, correct?

19 A. You're overstating what I have said. I said this  
20 alternative can be an attractive option if two conditions  
21 are met.

22 Q. Fair enough.

23 A. That is what I said.

24 Q. Fair enough. I'm with you.

25 The first of the two conditions is that the middleware

1 program has to be present on all or nearly all of the PCs  
2 that use the operating system to which the application  
3 otherwise would be written, correct?

4 A. That is right. That is what I'm thinking of as  
5 Microsoft operating systems, all right, not just Windows  
6 3.1, but the category of Microsoft or Microsoft compatible  
7 operating systems.

8 Q. And the second condition is that the middleware program  
9 has to be cross-platformed, correct?

10 A. Yes.

11 Q. It has to be available on a number of alternative  
12 operating system platforms?

13 A. Yes.

14 Q. Correct?

15 A. Yes.

16 Q. Okay.

17 A. Notice though at the end it says this is a condition  
18 for eliminating the applications barrier to entry,  
19 commodifying the operating system. It is not correct to say  
20 that something less than that couldn't increase competition.  
21 It is just that the last sentence is crucial. It is about  
22 eliminating the applications barrier to entry.

23 Q. Now, I think you said yesterday in one of your answers  
24 on direct examination, and your words were once we get to a  
25 world in which there is a middleware product that runs on

1 various operating systems, and then the sentence is very  
2 long, and I will show you the whole thing if you want, but  
3 the words you used to start your sentence were once we get  
4 to a world in which there is a middleware product that runs  
5 on various operating systems.

6 Do you remember that?

7 A. I remember talking about it but, of course, the context  
8 is vague now and I don't remember those precise words. But,  
9 in any case, when you get to the point of the question I  
10 probably will remember it.

11 Q. What you were saying here, Professor Noll, and I  
12 apologize because the transcript that we were given last  
13 night does not have any page numbers. I have given a copy  
14 of the page to Mr. Johnson, but I can't refer to a page.

15 Again, I will show you the whole thing if you want, but  
16 what you said is once we get to a world in which there is a  
17 middleware product that runs on various operating systems,  
18 and I think that very clearly says to us that that world has  
19 not yet arrived.

20 Agreed?

21 A. Well, Netscape was on a large number of personal  
22 computers, but at the time it had not yet developed as many  
23 APIs as were in process, and particularly when you combine  
24 Netscape with Java, so the requirement to be on a large  
25 number of PCs was met by Netscape, but before it achieved

1 the ability of being a serious middleware alternative it was  
2 basically snuffed out.

3 Q. Is the answer to my question yes, that that world has  
4 not yet arrived?

5 A. Well, part of it -- see, that is the thing. There are  
6 two parts to the issue. The first part Netscape had  
7 achieved, the second part it hadn't and was still in  
8 process. I don't know who to answer it other than that.

9 Q. Well, what if I do this and I will try to help. What  
10 if we leave Netscape out, and I will ask you this question,  
11 other than with respect to Netscape have we yet arrived at a  
12 world in which there is a middleware product that runs on  
13 various operating systems?

14 A. Today? You can't possibly mean today, right? Because  
15 the answer would clearly be yes today. Okay.

16 Q. Professor, I was just reading your testimony from  
17 yesterday.

18 A. No. I mean, the testimony yesterday is about the  
19 period of the case, and the period not only of this case but  
20 of the other case where the findings of fact come from. At  
21 the time that is relevant to those cases no middleware  
22 product was exposing enough APIs, and then if you exclude  
23 Netscape then no middleware product at that time was on  
24 enough computers that it could have completely eliminated  
25 the applications barrier to entry and commodified operating

1 systems. Not even close.

2 Q. How about in the period, let's say, 1994 through the  
3 year 2000? Other than Netscape was there ever a middleware  
4 product that ran on various operating systems?

5 A. That was exactly my answer. I said the period of this  
6 case plus the government's case, and that would be from '93  
7 to -- or '94 rather to '99, so in that period there never  
8 was.

9 Q. There never was?

10 A. There never was one that achieved enough penetration to  
11 eliminate the applications barrier to entry. That is  
12 correct. By itself it couldn't have done so.

13 Q. So the only one that you know of, the only one that  
14 existed potentially was Netscape.

15 Is that your testimony?

16 A. The only one that could satisfy the condition of being  
17 on such a large number of personal computers that had had  
18 that possibility was Netscape.

19 Q. Can I show you, sir, table 3 from the report that you  
20 submitted in this case.

21 Again, Professor Noll, if you want the whole report, it  
22 is very long, but I would be happy to give it to you.

23 Just take a moment, if you would, to look at this.

24 A. This is the market share?

25 Q. Right. What you report here, Professor, are market

1 shares, and I'm just looking at the left column. Excuse me  
2 just a moment.

3 Microsoft market shares in the operating system market.  
4 Do you see that, sir?

5 A. Yes.

6 Q. And what we did, is using the numbers in your report  
7 for Microsoft's share of the PC operating system market, we  
8 prepared another slide.

9 MR. TULCHIN: Can we see that one?

10 BY MR. TULCHIN

11 Q. We started in '91, which was the first year that you  
12 reported data.

13 Do you see that?

14 A. Yes.

15 Q. This is, according to your report, you went through the  
16 year 2001 and then you stopped. These are Microsoft's  
17 market share in the PC operating system market. I am  
18 inviting you to compare your table three with what looks  
19 like the market share on our slide 120.

20 Does this look about right?

21 A. Yes. I am not going to testify that it is exactly  
22 right, but it looks roughly correct.

23 Q. Okay. Now, had Novell issued in 1995, let's say within  
24 a month or two or three of the release of Windows 95, had  
25 Novell come out on the market with Perfect Office,

1 WordPerfect and QuatroPro written for Windows 95, would  
2 Microsoft's market share in the PC operating system market  
3 have been any different than what is depicted on slide 120?

4 A. The market share could have stayed the same, but the  
5 price might have been lower. The issue of how Microsoft  
6 would have responded to more competitive pressure could be  
7 either -- they would retain their price and have a decline  
8 in market share, or they could lower their price and retain  
9 their market share. I don't know which of those they would  
10 have done.

11 Q. Am I correct, Professor, that it is not your testimony  
12 here today that Microsoft's market share in the PC operating  
13 system market would have been any different, any different  
14 at all had Novell been able to release WordPerfect,  
15 QuatroPro and Perfect Office written for the Windows 95  
16 platform within a month or two or three of the release of  
17 Windows 95?

18 A. I don't know how to answer other than to say what I  
19 did. They could have retained market share by lowering the  
20 price a little bit. I don't know which they would have  
21 done. I can't possibly know what they would have done.

22 Q. And you have not done any analysis as a matter of  
23 economics to determine if price would have been dropped at  
24 all, correct? That wasn't what you did here?

25 A. There would have been intensified competition later on

1 with Linux. All right. Linux achieved about a five  
2 percent, a four or five percent market share, and its market  
3 share would have been higher, but how much higher depends on  
4 what Microsoft's strategy would have been.

5 THE COURT: It is almost a quarter of. Let's take  
6 a short break. Let me stay in here with counsel, if I can,  
7 for a moment.

8 (WHEREUPON, the jury leaves the proceedings.)

9 THE COURT: I am sorry. We're in an area where I  
10 might as well ask now, and I just may have an  
11 misapprehension. I am trying to figure this out.

12 Your answer about you don't know whether Microsoft  
13 would have reduced its price and retained its market, the  
14 premise of that is it might have done that in response to  
15 competitive pressure?

16 THE WITNESS: That is right.

17 THE COURT: If Novell had come out with a  
18 WordPerfect or perfect suite product at or around the time  
19 of the release of Windows 95, where would the market  
20 pressure have come from?

21 THE WITNESS: It would have -- now, we're  
22 assuming, I assume, that all the other conduct that was at  
23 issue in the government's case happened. So basically the  
24 premise of the question, as I assume and as I think you mean  
25 it, is that everything that had it happened exactly the way

1 it was except Novell had been able to overcome namespace  
2 extensions and other acts and come out on top, so that all  
3 the other players were out such as Netscape, Java and OS2,  
4 and in that world the only remaining source of the reduction  
5 in the applications barrier to entry is Novell. And in that  
6 world the only product left standing in the operating system  
7 market is Linux, which is just being introduced commercially  
8 at this time. It is just introduced at this time.

9 So the issue would have been if you look at Linux  
10 from, you know, '95 through '99, which it eventually grew to  
11 about five percent of the operating system market, despite  
12 the fact that there were no applications that ran on it at  
13 the time it was released. WordPerfect and Perfect Office  
14 did run on Linux, and so it would have been a more  
15 competitive threat to Microsoft had Perfect Office been  
16 released in a timely fashion on Windows 95 and retained more  
17 of its market share than it did.

18 That would have occurred over the course of the  
19 next few years as people switched from whatever PC they had  
20 to the next PC and faced the choice of using either Linux or  
21 Windows.

22 THE COURT: Part of this, and, again, this could  
23 be a total misapprehension, I had understood from the  
24 testimony of Mr. Harral and Mr. Richardson, mainly Mr.  
25 Harral, that Novell and I assume Mr. Harral was very excited

1 about the technological improvements brought by Windows 95,  
2 and that certainly as of '96 and into the foreseeable  
3 future, what they were going to write to was Windows 95,  
4 which actually would have had, since he thought it was  
5 going to be a better product, WordPerfect rather than Word,  
6 or Perfect Office rather than Office, with Windows, that if  
7 anything what they would have done would have been to  
8 increase the market share of Windows in '96 and into the  
9 foreseeable future. I may have just misunderstood and maybe  
10 you can help me out from the point of antitrust --

11 THE WITNESS: Yeah. I think that what -- again,  
12 I'm not going to characterize what is in --

13 THE COURT: I understand.

14 THE WITNESS: What is the circumstance facing not  
15 only Novell but anybody in 1995 is that starting in August  
16 of 1995 forward and for several years Windows is going to be  
17 the dominant operating system, and if you can't operate on  
18 Windows you have virtually no market. All right. So, of  
19 course, the primary target of any software vendor is going  
20 to be to work on Windows 95, but they still were issuing  
21 cross-platformed products.

22 Indeed, they still released versions for Unix and  
23 versions for Linux. That was what was left. Basically all  
24 that was left -- Linux was the most important thing that was  
25 left. The other thing that was left was Solaris, which was

1 a Unix system. Those things were still there. Once you  
2 have already written your program to run on Windows 95, then  
3 they did port it to these other operating systems.

4 Those systems were running on the 32 bit  
5 microprocessor, so the functionality of Linux plus the  
6 microprocessor was still this advanced functionality arising  
7 from the innovation that had taken place, but they had a  
8 very tiny market share. So you would always write to them  
9 secondarily, but it is still in your interest, whether  
10 you're IBM or Lotus and Smart Suite, or whether you're  
11 Novell with Perfect Office, it is still in your interest to  
12 try to be cross-platformed for the purpose of increasing  
13 competition in operating systems. So that is why they  
14 continue to write their products to work on these other  
15 systems even though their market share is small.

16 THE COURT: I realize, and you honestly said you  
17 don't present yourself as a technical witness, but you know  
18 more than I do.

19 THE WITNESS: Well, I am not sure. You have been  
20 doing this for years.

21 THE COURT: I can assure you that that means  
22 nothing. Your understanding of the shared code was that it  
23 could be easily ported. If written for Windows 95 it could  
24 be easily ported to a cross-platform?

25 THE WITNESS: My understanding of it is as

1 follows. That you have a core program, a core piece of  
2 software which is the spread sheet or the word processor,  
3 and then the shared code component is the part that connects  
4 to an operating system. This can grow over time to increase  
5 the number of operating systems in a Word product, which  
6 they eventually called PerfectFit.

7 The idea of this is sort of like the layer cake  
8 again, that you have WordPerfect and QuatroPro and  
9 Presentations and Group Mail, and all their other  
10 productivity applications sitting there as independent  
11 entities, that are independent of which operating system  
12 they are on, and then you have this thing called shared code  
13 between them and the operating system, and that that entity  
14 can work on multiple operating systems.

15 The first one they try to make it work on, of  
16 courses, is Windows 95 because that is the dominant  
17 operating system, and they have to succeed on Windows 95 in  
18 order to be successful. That was the first one they did.

19 THE COURT: Again, maybe this will be clarified in  
20 the course of time, or maybe I am the only one that is  
21 confused, I had understood that what Mr. Harral  
22 Mr. Richardson were doing, since the APIs were being  
23 withdrawn, was to re-create by their own code the  
24 undocumented APIs and that allowed them to get into Windows.  
25 I had understood that this was Windows 95 specific, that it

1 was not easily portable to a cross-platform.

2 THE WITNESS: No. Once you have written that code  
3 yourself -- eventually the thing that supports the code is  
4 the microprocessor and the computer itself. Okay. What  
5 they basically got themselves in the business of doing,  
6 whether rightly or wrongly, was essentially writing a  
7 component of an operating system and sticking it in  
8 middleware or sticking it in an application program. And  
9 they would then have to do more work to plug that into other  
10 operating systems, but namespace extensions was just a  
11 component of Windows 95, and once you have written that  
12 component yourself then you have it and you can plug it into  
13 Windows 95, and by plugging it into other APIs, not the  
14 namespace extension APIs, or you can develop other ways to  
15 plug it into other APIs, say in Linux or Solaris.

16 What they really got into the business of doing is  
17 moving some operating system functionality into middleware.  
18 That is really what they did. That was what the shared code  
19 project was about after the withdrawal of the namespace  
20 extensions. That is my understanding of it.

21 THE COURT: While I have got you here let me ask  
22 you another question which is fairly legal, but one of the  
23 things I am struggling with in this case, and I understand  
24 that Microsoft did things which have been found not  
25 appropriate and violate the antitrust laws, most obviously

1 the processor license with OEMs, but there is an issue in  
2 this case, as I understand it, and it is different, and I  
3 want to make sure that it is different, from other antitrust  
4 claims which have been lodged against Microsoft. And that  
5 is that Microsoft essentially is being asked to extend and  
6 to make available the APIs on Windows 95 and the namespace  
7 extension APIs, to share with its competitors. Essentially  
8 so its competitors can use Windows 95, and there is a legal  
9 issue which I have to decide, but your insight I want to  
10 have, which is it seems to me that that is qualitatively  
11 different, to ask a competitor not to do independent  
12 business things which violate the antitrust laws. It is  
13 quite different to ask the competitor to share its own work  
14 product so that it can be exploited or used, so that they  
15 can be used by persons whom its sees as competitive threats.

16           However ugly the e-mails may be and the internal  
17 memos may be, I have a problem if the antitrust laws as a  
18 matter of policy essentially require, absent various  
19 extraordinary circumstances, require a competitor to share  
20 its work product, here Windows 95, its technological  
21 improvements with a competitor.

22           Indeed, I would think as an investor in Microsoft,  
23 I would not want to the CEO or the chairman of the board to  
24 make any decision other than the one made by Mr. Casey. He  
25 owes a fiduciary obligation to me. If he sees a competitive

1 threat, I don't want him using my capital to share the work  
2 product that my capital has been used to compile with a  
3 competitor when the competitor may engage -- I forget the --  
4 the word I use is a paradigm shift, you use another word, to  
5 essentially make the work I have done irrelevant.

6 Can you help me with that?

7 THE WITNESS: Yes. I understand the problem and  
8 let me give you three points. The first point is that the  
9 namespace extension APIs is not materially different from  
10 any of the other API issues. They are all basically about  
11 the same set of issues, which is Microsoft develops  
12 capabilities in its operating system, and then is it in some  
13 sense obliged to document those capabilities for the  
14 competitors of its other products that make use of them?

15 All right.

16 Or is it the case that it can withdraw an API  
17 because it believes a competitor is using it competitively?  
18 That is what the issue is. So now let's get to whether that  
19 is anticompetitive. I am not going to try to be a lawyer,  
20 but --

21 THE COURT: I just want to know the relevant  
22 policy issues.

23 THE WITNESS: And so the policy issue to me is,  
24 first of all, the evangelization part. There are Aspen ski  
25 issues, that a bunch of people make investments, other

1 people make investments based upon the premise that  
2 Microsoft is going to deliver certain products to them and,  
3 indeed, Microsoft does publicly state that its goal in life  
4 is to get as many applications running in Windows 59 as  
5 positionable, because that is the normal insensitive of an  
6 operating systems vendor, is to have as many applications as  
7 possible running on that operating system.

8 So it engages in this behavior, this pattern of  
9 behavior that goes back for a decade of evangelizing people  
10 to write to APIs, and in particular to the APIs that create  
11 new capabilities that will increase the demand for  
12 everybody's product, right, the PC, the operating system and  
13 the applications. And then it cuts them off. So the  
14 cutting off of something that you have evangelized strikes  
15 me as putting it into a different category than I simply  
16 invent a product and do I have to sell it to my competitor?  
17 That strikes me as the crucial difference here.

18 The test we normally use for whether a refusal to  
19 deal like this is anticompetitive, is really a test about  
20 what is the incentive facing the operating system vendor?  
21 And did they go against that incentive to advantage  
22 themselves in some other market? That is the mindset that  
23 we have. I think, you know, to be completely neutral about  
24 it, from my perspective as an economist, it really hinges on  
25 whether the benefits of withdrawing namespace extensions

1 exceeded the costs.

2           If the costs to the market, the competition  
3 exceeded the benefits of withdrawing it, then it was an  
4 Aspen ski or refusal to deal like case, where they actually  
5 sacrificed some performance characteristics of Windows 95  
6 that would have been implemented by Novell, but were not  
7 implemented by other people and, thereby, reduce the quality  
8 of Windows 95 as perceived by users, and that is not what  
9 the incentive of an operating system operator is.

10           THE COURT: That is a fair and helpful answer.  
11 Let me ask you one more thing, which may reflect an  
12 incorrect understanding of facts but a potential version.  
13 Suppose what happened was that within Microsoft there really  
14 were competing groups, one of which -- certainly the one  
15 group wanted to evangelize and one wanted the ISVs to be  
16 able to write. The others didn't. And what happens is that  
17 Bill Gates goes off to the Agenda 95 conference and he is  
18 spooked by what he sees Bob Frankenberg present on the  
19 prototype, which never comes into existence for sales and  
20 says, oh, my God, Novell is way ahead of us. I have to make  
21 the decision now, whether in a couple of days -- I may have  
22 the evidence wrong -- he comes home and says now is the time  
23 for recision, and I'm going with the people who don't want  
24 to expose the namespace extensions. And he says some  
25 pretty, and they are in e-mails, and I don't know who says

1 them --

2 THE WITNESS: I know.

3 THE COURT: I may have it confused who wrote what.

4 THE WITNESS: I believe --

5 THE COURT: Essentially until we are ready, our  
6 applications people are not ready to take advantage like  
7 Novell is yet, and I am making the decision to cut it off.  
8 And I understand your answer about the fact that other  
9 people invested because of the evangelism, and that is  
10 helpful, but cynical as it sounds, there is really nothing  
11 wrong with that is there to say, look, you know, if it  
12 wasn't for the evangelism concern, the fact that other  
13 people had invested, thinking you're going to expose it, if  
14 that did not exist and you come back and you say, my God,  
15 I'm not going to let other people use all the benefits of  
16 Windows 95 until we can catch up. Its sound ugly, but I  
17 don't see what the public policy issue is.

18 THE WITNESS: Here is the policy issue. I think  
19 your characterization, as far as I can tell, is consistent  
20 with the facts, that it is the office people who are afraid,  
21 and it is the Windows 95, the operating system people who  
22 want to go ahead.

23 THE COURT: Or maybe the NT people. I don't know.

24 THE WITNESS: So it is operating system people who  
25 are interested in evangelism, and it is office people who

1 are not evangelists. The thing that I would say from a  
2 purely economic standpoint and should be borne in mind here,  
3 is that the issue is in the first instance consumers, and in  
4 the second instance the effect on competitors. It is still  
5 the case that an operating system entity that was trying to  
6 maximize its profits would evangelize and facilitate as many  
7 competitors as possible.

8 If you use the operating system monopoly to  
9 advantage yourself in another market, that harms consumer by  
10 lowering the quality of the applications, and it reduces  
11 competition, in the first instance in the application  
12 market, but in the second instance it even reduces  
13 competition in the long run in the operating system market  
14 if these competitors are middleware producers as well as  
15 applications producers. And so that is where you have to do  
16 the balancing act, and that is where you address this  
17 question of the harms versus the benefits.

18 THE COURT: Again, a fair answer, and I'm sorry to  
19 monopolize the conversation but I'm really trying to  
20 understand. What I have got to decide though is does it  
21 really hurt consumers at the next level to force an  
22 operating system manufacturer to share a product which may  
23 be used not only against your applications group, but may  
24 result in a paradigm shift which undermines your whole  
25 business, and to force them to provide -- to incent them to

1 share with what the law requires them to share, isn't the  
2 consumer hurt at another level in that it is going to hurt  
3 innovation in that who is going to try to come through with  
4 the next big one?

5 THE WITNESS: Well, the point is, though, the  
6 operating system would have benefited from having a  
7 capability that no other operating system had. So the  
8 reason that the operating system --

9 THE COURT: Not if you cross-platform.

10 THE WITNESS: No, it does. That is the point, is  
11 that WordPerfect, per se, simply as a word processor and  
12 QuatroPro as a spread sheet are only threats to  
13 applications. It is this fact that they are assembled with  
14 middleware that makes them a threat to an operating system,  
15 and the fact that they are cross-platformed that makes them  
16 a threat.

17 So, you know, what that means is that if you're  
18 going to succeed as the dominating operate system you have  
19 to continue to innovate. You have to continue to be the  
20 best. That incentive is still there because it is the  
21 invention of namespace extensions that is going to be  
22 rewarded, right? Because if WordPerfect does not invent  
23 around name namespace extensions on Windows 95, those  
24 capabilities are not going to be present on the other  
25 operating systems so they are not going to do it. All

1 right.

2           They are retaining them in the operating system  
3 and other operating systems have to compete with those  
4 capabilities, and their position in the operating system is  
5 going to be fully determined by how innovative they are in  
6 that operating system market. When preservation of that  
7 market position stops being about innovation and starts  
8 being about preventing others from competing with you  
9 because you have that dominant position, that is the point  
10 at which it becomes anticompetitive.

11           THE COURT: Thank you.

12           Again, I'm sorry. I am just trying to understand.  
13 I really am. Anybody is free to argue anything at any time.  
14 I am just trying to understand.

15           Tell the jury we'll be another five or ten  
16 minutes. I am ready any time anybody else is.

17           (Recess)

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