

Microsoft Presentation for the
1989 IBM PS/2 FORUM

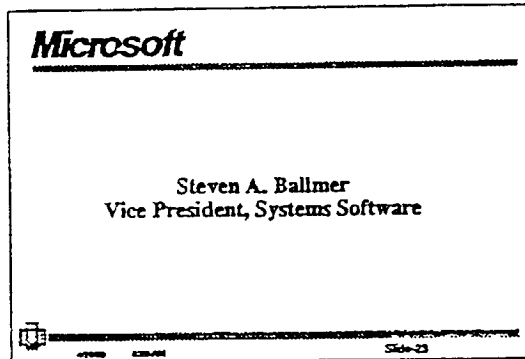
Introduction from IBM Executive:

Today we are fortunate to have with us a gentleman who is uniquely qualified to talk about PS/2 and OS/2.

He is the vice president for systems software at Microsoft. Microsoft and IBM have a long history of cooperation beginning with the original PC and DOS.

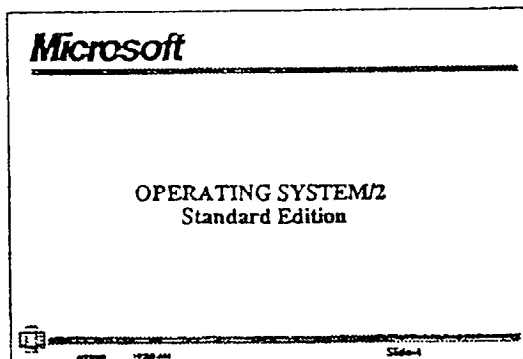
Today Microsoft is our joint development partner for OS/2. This gentleman is responsible for Microsoft's work on that project, ladies and gentlemen please help me welcome Steve Ballmer.

Ballmer:



Good Morning.

I would like to thank IBM for inviting me to talk with you this morning because it gives me a chance to talk to you about our plans are for OS/2 and try to reinforce some of its benefits.



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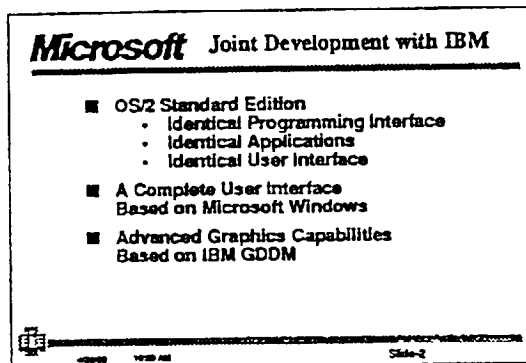
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It would be helpful for me, to understand this audience, if I could please have show of hands:

How many of you in the audience have had an opportunity to actually sit down at a computer that had OS/2 with the presentation manager installed on it?

And how many folks would have plans some place in your organization, not necessarily everywhere, but some place in your organizations to install OS/2 and OS/2 applications within the next year?

O.K. This is a real good group. There are enough zealots that I won't be drowned out and there are enough people that need conversion to justify my giving this speech.



Microsoft Joint Development with IBM

- OS/2 Standard Edition
 - Identical Programming Interface
 - Identical Applications
 - Identical User Interface
- A Complete User Interface Based on Microsoft Windows
- Advanced Graphics Capabilities Based on IBM GDDM

IBM Microsoft
Slide 2

The first key point that I'd like to make today is that IBM and Microsoft share a common view of personal computing.

As _____ mentioned, our relationship goes back to 1980 when we did the original work on the IBM PC and DOS together. Our relationship has flourished over the years and almost four years ago now, both IBM and Microsoft saw that we were really at a key juncture and that without a significant step forward in the systems software platform, personal computing was going to stagnate.

We needed to do something innovative to provide a next generation platform on which software developers could give full expression to their creativity and their best thoughts. We decided to do that as a joint product and take advantage of the best ideas, thinking, creativity, talent in both Microsoft and IBM.

We wanted to give a very consistent message to the software development community. So, we built OS/2 (standard edition) as a joint development project; there are people from both Microsoft and IBM working on the product. It combines the best of both of our prior technology: IBM and its GDDM work and some of its other host experience, our experience with the DOS and Windows products.

The standard edition products that we make available are identical. So we can send very consistent message that goes out to software developers and to customers like you all here this morning. OS/2 from IBM or Microsoft will have the same user interface, same programmatic interface, and you can count on a very large base of common applications. Applications will be built on top of OS/2 continuing the incredible momentum that's allowed us to sell over 35 million copies of DOS and that's a market that's now growing at roughly 10 million units a year. Together, we expect to repeat that DOS experience with OS/2.

Microsoft Easy to Learn - Easy to Use

- Consistent User Access
 - One Way to Edit Text
 - One Way to Select Command/Options
 - One way to Scroll, Etc.
- Uniform Keyboard Functionality
- Provides Confidence and High Comfort Level
- The CUA user interface is the most popular graphical interface in the world today

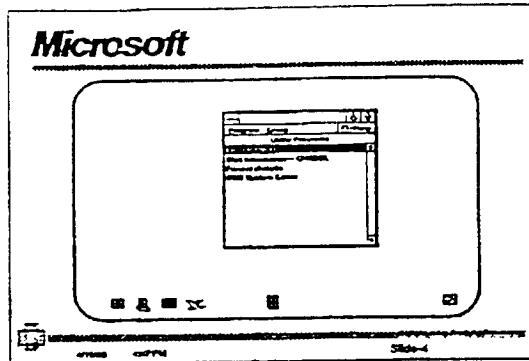
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OS/2 has three key characteristics:

First and most important, OS/2 is designed to encourage software developers to build applications that all work in the same way. 'F1' always gets you Help. When you work with menus, or fill in information, or scroll through a document, it's always done the same way. So that once you have learned how to copy a file, or learned how to use a spreadsheet, it's going to be much quicker learning how to use the second, the third, the fourth, the fifth application.

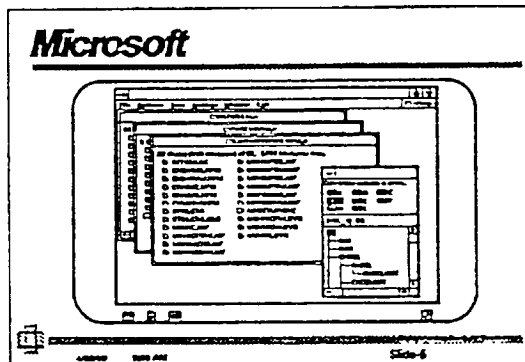
We call the common user interface in OS/2 "CUA" or "Common User Access". It's the user interface defined as part of IBM's SAA (Systems Application architecture). It's implemented on DOS through our Windows offering, and in OS/2 with the Presentation Manager.

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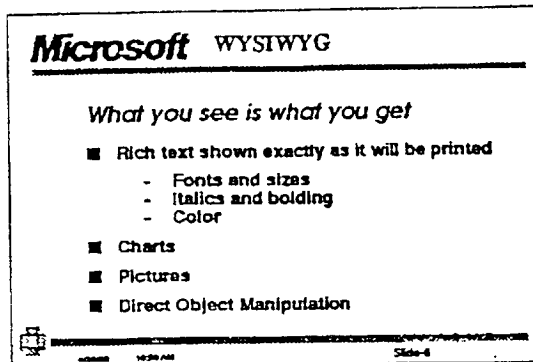
When you first start up Presentation Manager in OS/2 you'll see a screen like this. It offers a simple list of applications that you might run on your system. So that you can go to the control panel or start an editor. You'll learn how to consistently choose things off of this menu. You'll understand that the little icons or pictures at the bottom of the screen represent applications that are already running in the system. You will never again see any more of the C> or A> prompt that you've become accustomed to on DOS. You come immediately to this kind of simple shell.

When it comes time to copy a file you'll use the very similar looking and very visual file manager program.



The menus are all selected in exactly the same way. You'll see a little tree on the screen that depicts the directories and files on the hard disk. And to copy files it's very simple. You simply point at it, drag it with the mouse and drop it some place else. If you don't have a mouse, no problem, everything in our user interface is accessible either from the mouse or the keyboard.

Once you've learned even this simple set of applications that come with the system, you'll be that much better equipped then to use your first application. You'll know how to browse through all the commands in a menu. You'll know how to fill information into a dialog. You'll know how to scroll through a document. Those are the kinds of things that you'll learn once and they'll apply to Aldus' Pagemaker, or Microsoft Excel, Lotus 123 G, and the graphics version of WordPerfect. They'll all be available and they'll all have this same look and feel.



Applications developers will still innovate. They'll still give you their best ideas, but the hundreds of arbitrary, small choices that people used to make differently we and IBM have standardized for them, in this CUA offering.

The second key piece of graphical user interface is the graphical part. We're not only consistent, but we provide a very rich, what-you-see-is-what-you-get interface. So that everything you see on the screen will print exactly the same way it appears on the screen. You will see rich fonts: bold, italic, 24 point Times-Roman type, if that's what you want. You can see charts and pictures; all imbedded there on the screen as part of the same document. And when you go to print you're going to see exactly the same thing on the printer.

I'll show you some screen shots here in a moment, but I urge you to get out and take a look at the demonstrations of applications written to the Presentation Manager and see some of the rich things that they're doing. It's really very impressive.

The ease of use and consistency that provide an incredible breakthrough. We've done a lot of work on the Macintosh. We sell applications in that environment, and we've found that the single biggest win, is the ease with which people get productive on the second or third application. We can also report that the combination of consistency and the graphical interface have dramatically lowered our support costs. It costs about half as much to support these applications as equivalent character applications. There's no need to wait or worry about that anymore on this PS/2 platform. We've delivered both with OS/2 and the Presentation Manager.

Microsoft Applications working together

- Multi-tasking
- Clipboard
 - Rich Data Exchange
 - Common Data Formats
- Dynamic Data Exchange
 - Real-time data processing
 - Linkages with automatic updates

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The third key characteristic of OS/2 that I would like to talk about is the ability to run multiple applications. And, more important than running lots of applications at the same time, is the ability to have them work together.

This is not just a multi-tasking system in the sense that somebody is actually going to want to sit down and do their taxes while they're writing a letter to mom. That's not what this is all about. Multi-tasking a central part of the design of the system. OS/2 is designed to allow you to, for example, not only collect data from a communications session, as in the customer example that pointed out, while you are doing something else, but to have that data automatically linked into your spreadsheet, to have the analysis going on in your spreadsheet while you are perhaps out writing a letter, and to allow the spreadsheet to send electronic mail out to perhaps three or four sales people that say "hey, you're below quota."

All these kinds of things can proceed together in background. Let's say you have stock price information coming in over a communications line. You could hot link that to a spreadsheet and just sit there and look at a chart of trading volumes, transactions, stock prices, etc.

So it's not just the fact that we let you run multiple applications, but we designed the system to move information back and forth between the applications either automatically, or through the so-called clipboard. It will allow you to take a chart out of a graphics program or spreadsheet product and put it into a word processing document. You can do that sort of cut and paste operation very simply. So the multi-tasking is important, but it's even more important that we created a framework and a set of standard protocols for software developers to let these applications work together.

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Microsoft Networking

- High performance file and printer services
- Client-Server Computing enables workgroup computing
 - Local shared databases
 - Distributed processing
 - Access to mainframe data
- Support for DOS Workstations
- Future Directions
 - Internetworking
 - Performance
 - Features

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OS/2 provides a very rich foundation for networking. Our vision of the future of personal computing involves having you run OS/2 on every network server. Whether you're sharing files, or SQL data files, or printers, or communications lines, OS/2 is a server operating system.

We and IBM have put a lot of work into networking and we think that is very important. We think it's also important, given the installed base of DOS, that you be able to connect up either DOS or OS/2 workstations to this OS/2 server. And we've done a very nice job, I think, in our work with IBM in making sure that that scenario works.

The examples that _____ talked about at both Bank of America and Sears helped highlight that networking example. This PC to PC networking phenomenon is still in it's infancy and it will take a multi-tasking operating system, like OS/2, on the server to really let this notion of client-server computing and shared information take-off in PC workgroups.

Microsoft Key OS/2 Applications

■ Aldus	PageMaker	2Q89
■ Ashton-Tate	dBase IV	2Q89
■ Borland	Paradox	NOW
■ Computer Assoc	SuperProject	NOW
■ IBM	DisplayWrite 5/2	NOW
■ Lotus	1-2-3 V3	2Q89
■ Microrim	R:Base	NOW
■ Microsoft	Word 5.0	2Q89
■ Microsoft	Excel	2Q89
■ Symantec	Q & A	NOW
■ WordPerfect	WordPerfect 5.0	NOW

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OS/2 is a phenomenon that has started. Some people say "I'm going to wait, maybe I'll wait for OS/2, I don't know, the apps are coming someday."

There are really two kinds of OS/2 applications. There are what I will refer to as the simple ports of applications that have existed under DOS and that have moved to OS/2. These are certainly very important. Let's say you want to go out and buy a new, exciting OS/2 application. You will still have some people, who want to keep on doing word processing the way they always have, or their database application the way they always have. So the availability of 123 version 3 (which is due out in June), or WordPerfect 5 (which has shipped), Microsoft Word version 5, (which will ship this month), dBase IV (which ships the end of this quarter), Paradox (which has also already shipped) - those applications, if they were not available under OS/2 would be inhibitors.

For some of you who's systems are very tight on memory space, there will actually be some incentives to drive you to OS/2.

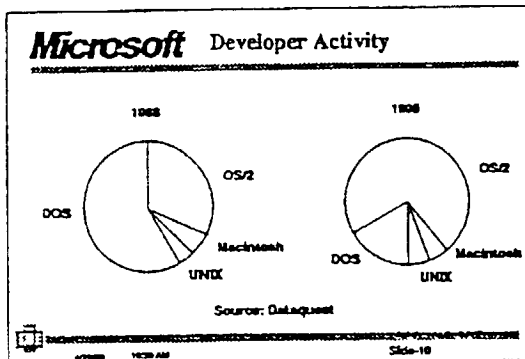
We are dealing with the inhibitors, but more important are the exciting applications are coming for OS/2; Sidekick for Presentation Manager, our Excel spreadsheet that _____ showed you a minute ago, Aldus Pagemaker, Lotus Notes and 123G, and the list goes on and on. We think we will have a very rich set of applications available on Presentation Manager by the end of this year. By the middle of next year we will have a very complete set.

This means we have motivators this year to move you to OS/2. If your existing are short on memory and if you want one of these exciting apps - you are not going to have to give up anything because the applications that you use today will be available and you will have access to that full 16 megabytes of memory.

So, those issues from the software development standpoint, have been solved. And I think I can say with great confidence that now is the time to start looking at installing some OS/2. You shouldn't move until an application that motivates you is available, but it's not a subject anymore for the future, it's a subject for today.

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When we go out and talk to software developers, and we spend a lot of time doing this, we ask them "how are you spending your development resources? Is it on DOS applications? UNIX? Macintosh? OS/2?". We always get a pretty consistent message.



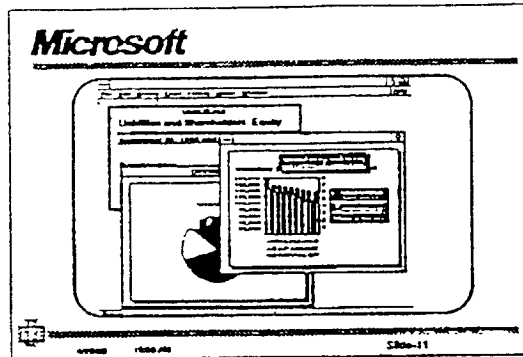
We asked Dataquest to do an independent study of independent software vendors. Dataquest found that the bulk of their investment these days is in DOS applications, because that's where the market is. But software developers told them, as they are unanimously telling us, that over the course of the next two years that they are going to put their energy, their creativity, their best ideas into OS/2.

We think that the initial motivators that you'll can expect to see will be server applications, providing shared access to communications and database. We see a lot of early movement in the publishing, art, illustration, area. The CAD market is also moving to OS/2 very quickly.

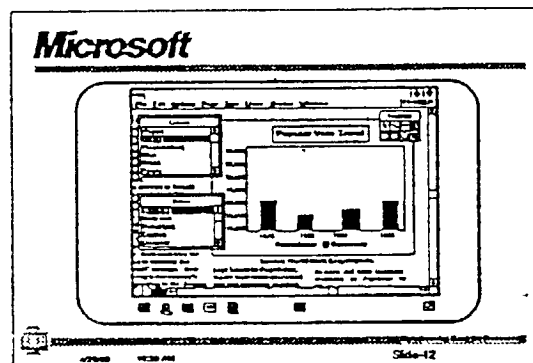
The software development community is moving very quickly. During 1989 we will have all the word processors and spreadsheets and databases that anybody might want. And not only will we have them, it will be the focus point for where these software developers are putting their next, best ideas. They will come out first on OS/2; not on DOS, not on UNIX, not on the Macintosh, first on OS/2.

Let me show you a few of these applications. I encourage you to look at them in the breakout. This is a photograph of a VGA screen. In case anybody is confused about graphics, IBM really did a very important and great thing when they introduced the PS/2 with the VGA because this graphical user interface is of superb quality running on PS/2s which have VGA built in. It was a very important leap forward with the PS/2 and a very important innovation from IBM.

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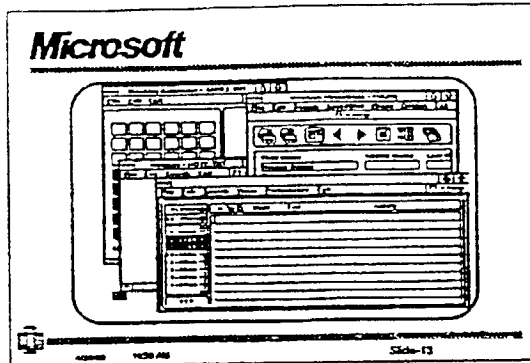


This is Microsoft Excel spreadsheet which will ship in July running on top of Presentation Manager. You can see the value of the what-you-see-is-what-you-get feel. We can produce what is essentially annual report quality output out of the Microsoft Excel spreadsheet, and that's impressive.

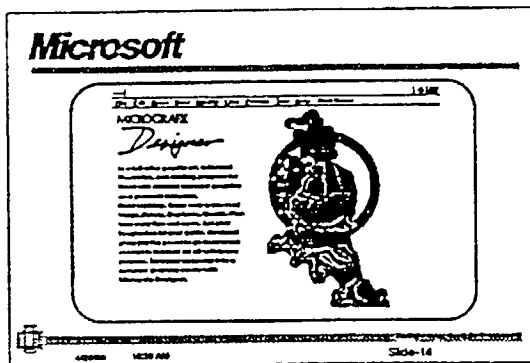


This is Aldus PageMaker running under OS/2. It's a page design and layout application. We actually publish our own internal newsletters and journals using PageMaker. It will be available, in final release, by July or August of this year on OS/2.

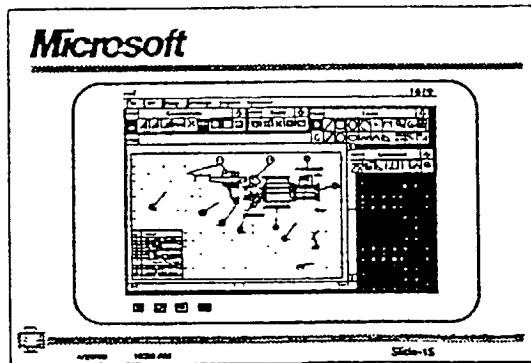
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This is Borland's SideKick application which IBM bundles along with OS/2. It includes a calculator, allows you to write simple notes, organize your personal phone book and dial phone numbers, etc. Take a look at it, it's kind of fun and quite useful.

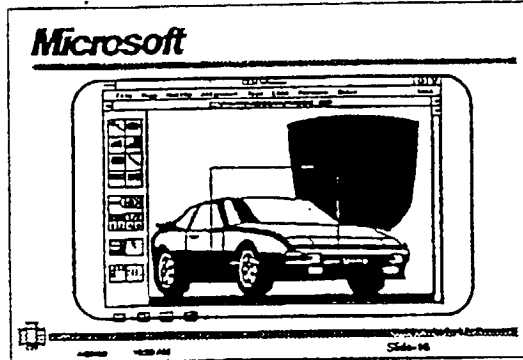


This is an illustration package from Micrografx which they are demonstrating called Designer.



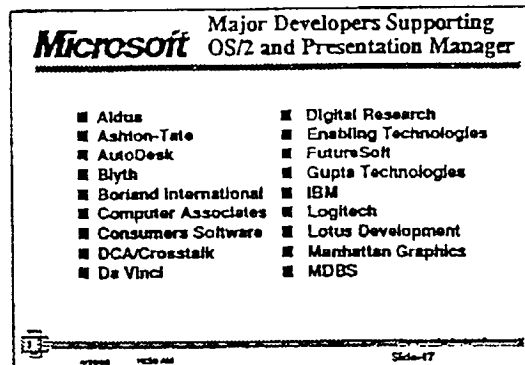
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This is a rich CAD package from VersaCAD which will be available the second half of this year under Presentation Manager. The CAD people have been very quick to jump on top of OS/2. Autodesk will ship the AutoCAD package in the third quarter of the year. I think that this is a market that will move very quickly off of the DOS and UNIX platforms and onto OS/2.



And last, but not least, we have some car buffs in the OS/2 development team. This is a draw package from Digital Research called Gem Draw and that's a very pretty picture, of a very expensive Porsche.

It is unanimous. There are no software developers who are confused. All of the largest software developers, Lotus, Ashton-Tate, Borland, Microsoft, WordPerfect, Novell, understand the importance of OS/2 and understand the importance of Presentation Manager.



Here's a list of some of the companies supporting OS/2 version 1.1:

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Microsoft Major Developers Supporting OS/2 and Presentation Manager

- MicroFocus
- Micrografx
- Microim
- Microsoft
- OWL International
- Softview
- Software Publishing
- SPSS
- Versacad
- Whitewater Group
- WordPerfect
- Xcelinet
- Z-Soft
- Zenographics

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But the list goes on and on and on. Another list, that we can't publish is the list of corporations, like the examples described earlier, who are developing their own OS/2 applications to make their businesses more competitive.

The only question is, is the app that you want going to be available in July, is it August, or October, or maybe, if you're one of the unlucky guys, it's January of next year. But now is the time to really get involved, take a look at OS/2, and as that application becomes available, start buying.

Microsoft The Role of DOS

- DOS will continue to be a significant personal computer operating system
- DOS and OS/2 workstations can operate together connected to the same servers
- The DOS Compatibility Environment allows for a smooth transition
- Interface compatibility across Windows and OS/2 makes possible DOS and OS/2 applications with common documentation

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Now, as I said, DOS is a very important product, More than 10 million DOS systems are sold per year, and OS/2 is not going to pass DOS in the very near future (just because 10 million is a huge number). So, we think it's very important that we continue to enhance DOS, that we provide an OS/2 compatible user interface on DOS (that's done through the Windows product), that we make sure that DOS systems can network into these OS/2 networks, (we do that in our work with IBM on the LAN Server product).

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I think that you will find, with the work that we are putting into OS/2, with the way memory prices have come down dramatically over the last six months to a year, that the equation will start to shift over the course of the next year and OS/2 sales will ramp up. It's our current view that it will be sometime at the end of '92 that OS/2 will actually outsell DOS in the office.

Now some people sit back and say "that's not very impressive, that is three years from now." But consider that what I am telling you is that by three years from now we are going to be selling five to six million copies of OS/2 a year. Which will make it the second most popular operating system ever in the world.

We actually think that by next year OS/2 will be the second most popular operating system in the world, behind only DOS. In terms of units it'll pass the Macintosh, UNIX and everything else. It'll just blow right by them, because this is where developers are putting their creativity and this is where developers are putting their energy.

Our forecast for 1989 is a good year for OS/2 sales because there will be a reasonable number of apps. Next year should be excellent. OS/2 should out sell anything that you can think of on the market by a wide margin except for DOS itself.

It will probably be '92 before we reach the cross-over point where you install more OS/2 than you install DOS in the office. Now with a little bit of luck from the semi-conductor manufacturers, with a little bit of help with memory prices, I think that could actually happen a little bit faster. But that is all that stands in the way.

We recommend four megabytes of memory for OS/2 - some people think that's what the operating system takes, but no, we run Excel on a two megabyte OS/2 machine - but you are going to want to run multiple apps. You are going to want to run things like Extended Edition. So we do recommend that you get four megabyte standard with your OS/2 systems.

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Microsoft The Future:
Microsoft/IBM Commitment

- Support of Intel 386 /486 architecture
- Refinement
 - Speed
 - Size
 - Usability
- Enhancements
 - New features
 - New hardware support
- OS/2 will succeed DOS as the dominant workstation operating environment

MS-DOS 3.31 IBM PC AT 386-20 Slide-20

We and IBM are committed to making OS/2 successful. We will continue to do new releases. We will support the 386 and 486 microprocessors. We will enhance the file system later this year to make it faster and give it richer attributes so you can look at long names. Names will be uppercase and lowercase and contain spaces. We are going to improve this product. We are going to make it faster, we are going smaller, we are going to make it better. We are going to do whatever it takes, from a technical standpoint and from a marketing standpoint to make OS/2 the successor to DOS.

Microsoft Summary

- OS/2 has the momentum
- ISVs are convinced and developing applications
- Early users are enthusiastic
- Planned enhancements will consistently improve end user and developer benefits
- OS/2 is a great foundation for technology innovation

OS/2: The natural successor to DOS

MS-DOS 3.31 IBM PC AT 386-20 Slide-21

I don't want anyone to leave here confused. If there is something that you think needs to be fixed, or something that you think needs to be better, let us know. We are committed to doing what it takes to make this operating system the platform for computing into the '90s and I'm sure that we will be successful in that.

Thank you very much for your time.