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Microsoft Windows 95: Revolutionary or Evolutionary?

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Summary: On August 24, 1995, with unprecedented fanfare, Microsoft officially launched its Windows 95 operating system, the successor to its immensely popular Windows 3.x series of operating systems. Panelists will survey the new capabilities offered by Windows 95 from the perspectives of the end-user, software developer, and system administrator. Comparisons will be made to the two primary alternative 32-bit operating systems for personal computers: Windows NT and OS/2.

Mr. Michael F. Davlin: Our first speaker will be Patrick Basso. He is from Colorado Springs. Our other speaker, from Fort Meyers, is Steve Hambruch. Both Patrick and Steven work for firms that are designated as Microsoft Solution Providers, so they are certified by Microsoft that they are knowledgeable in the areas of Microsoft end-user products, Microsoft networking products, and operating systems.

Patrick is going to speak on the end-user aspects of Windows 95, which is the operating system itself; he'll also discuss what's new in the Microsoft office products. Steven Hambruch will speak on solutions he has actually implemented in different companies, including insurance companies, where Microsoft office

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products and other Microsoft development tools are used as the front-end visual display for the end-user. He'll discuss what's called Microsoft Back Office Tools for the back-end of an application—a server, a database, NT as an operating system, and things of that nature.

Mr. Patrick A. Basso: Let me tell you about the equipment that we're using here. One of the products that we are running is NT Server 3.51. We're running 16 megabytes RAM on a 15 megahertz Pentium for NT server. We're using an IBM Think Pad, which is a 486 SX running at 32 megahertz with 20 megabytes of RAM. That is what I'm going to be running Windows 95 on. So how many people are Windows 3.11 users? All right, great. How many people are using Windows 95 Work Groups?   How many people are using NT? Oh, we've got one there.

In this part of the seminar we're going to focus on Windows 95 and Office for Windows 95. And we're going to try to answer the question, is Windows 95 a revolutionary new product or is it an evolutionary new product? Now I should preface this and tell you that Windows 95 in actuality is a good product. I firmly understand that there are individual problems that are running out there, because Windows 95 is a 32-bit application that's trying to be backwards compatible with all the other products that are 16-bit applications or are in DOS. I'm going to be focusing specifically on the features of Windows 95. We'll try to discuss some of the problem areas. Windows 95 does have compatibility problems. By going to the 32-bit operating system with new features and benefits, some of the backwards compatibility was lost. And we'll see where some of those things run into play and how you can get around them.

So our objective here is to show you how Windows 95 and Office 95 can reduce the time that's spent in support. We're going to show you some specific areas where that's going to happen. Windows 95 should also be able to improve your ability to control and organize your machines and be able to configure them. Third, you can increase your overall productivity with Windows 95 and Office for Windows 95. We are going to show you how to meet these objectives and how Windows 95 and Office for Windows 95 can help you realize these benefits.

We're going to go through some introductions. We're going to look at a fictitious company that we call Volcano Coffee. We're going to discuss some of the advantages that the company derived from going to Windows 95 and Office for Windows 95 and how this company implemented this new technology. So, once again, how many of you are using Windows 95? Wow, a good percentage are already using it.

As you may know, Windows 95 is an upgrade product. It upgraded both DOS, if you're using any of the previous separate versions of DOS, and Windows 95 and

combined them into one application. So you no longer have a Windows environment operating on top of DOS. Everything's combined into one package and allows you to control all of the aspects of your computer. So we're talking about memory management. We'll discuss many of the details on how the user interacts with the interface and we're going to see these features as we go through it.

The other product that we're going to talk about is this Office 95, which is composed of Access, Excel, Word, PowerPoint, and a new product called Schedule Plus. Well, if any of you who were using the Microsoft Mail product received an earlier version of Schedule Plus, Microsoft has enhanced these products.

Windows 95 is a way that your organization can reduce cost. We're going to show you that it can improve productivity, and we are going to try to show you how to realize the benefits of using the hardware that you've already implemented. Now let me see with a show of hands how many people are already using Office 95? How many people have heard of Office 95 who may not be using it? Office 95 is a full upgrade. Microsoft has re-engineered all the applications to use this 32-bit environment, and it also integrated many features that allow you to take advantage of Windows 95's new capabilities. One of those capabilities I mentioned is that Schedule Plus becomes integrated into it. There's another product called Office Binder, which allows me to combine information or documents from different applications, so I can take a piece of a Word document, a piece of an Excel document in a PowerPoint presentation and combine them all into one document.

Let me make a transition here for a video input to our laptop. This is a feature of Windows 95 built into the multimedia capability, and it's particularly geared to running video. We're going to try to focus on how these new improvements to Windows 95 and Office 95 allow you to focus on your work, share information between applications, and communicate in a network environment.

The first thing that you're going to notice in Windows 95 is the task bar at the bottom of the screen. This is where we focus all of our new attention. The Start button replaces something you may have seen in the Windows environment called the Program Manager. It makes it very easy for new users to be able to navigate the system. You no longer have to remember what program group you put an application in or the name of the document. Everything focuses on the Start button. If you click on the Start button, it gives immediate access to all the software programs. I can go to the programs button or the document button and have immediate access to any of the documents that I've used most recently. I also get the capability to manage different configuration settings about my hardware. Those of you who have done a little bit of technical work in Windows know there was the control panel that allowed us to manage our devices

such as managing our printers. All of our machine settings are accessible here. The other nice thing about our task bar is you see I have another button up here that's called the Media Player. It allows me to manage multiple documents at the same time and I can always see where I am at any given moment in time.

Instead of just showing many dry features, I'm going to use a fictitious company called Volcano Coffee Company. We'll show you how it implemented these products to be able to derive the advantages. Volcano Coffee Company is a small business. It's doing about $25 million in sales, but it feels that it's behind the eight ball in the competitive world. It wants to get ahead of the competition, so it's looking at new technology to be able to make that change. We're going to hear about a gentleman by the name of Jim Smith—our fictitious user.

Windows 95 allows networking to be integrated into the system. The system knows if you are not connected into a cable and the only way you had access now was through a modem.

Integrated Mail is in the Microsoft Exchange, a new product coming from Microsoft. It allows Jim to go ahead and download new messages right away by connecting into the server back at his home base.

Users need access to all of their corporate data no matter where they are—at the hotel, at his office, or back at the customer's site. They need to be able to do just about anything, such as queuing a document to print. When they return to the office, they were able to print out that document automatically.

There's another problem. How many people use laptops? How many use docking stations? You're probably familiar with the capability of undocking your docking station prior to Windows 95. You had to manually reboot the system. What happens here is we have the capability to reboot the system on the fly and get it to manually configure using some of the technology called Plug and Play that we'll discuss later. It's a very stable environment and we find that we're spending less time fixing these hardware and software problems when we're transitioning from a docked location to an undocked scenario. It gives you more time to focus on your work and what's going on.

Now we're going to look at a few of the advantages in Windows 95 that make some of these things easier to do. And through our transition I was talking about the capability of the product to be able to allow you to manage multiple scenarios at any given time. For each new application that I open up, I get another button on my task bar that represents that program. So there's no more wondering what programs you have open, where the programs are, and how you get access to them.

We were talking about that problem of the hidden windows in Windows 3.11 and how to get access to them. So I can use the task bar by just clicking on the appropriate button and it will bring the desired application forward. It doesn't matter what's on top of what, so you no longer have to minimize or maximize to make things happen.

The other thing that's on the left-hand side is a group of icons that sit on our desktop now. The first icon is the My Computer icon. When double clicked, the My Computer icon brings up all the information related to my machine—my disk drives, my network connections, and so on. There's an icon in the center that says C drive on server, so it keeps that static link for me. The control panel allows me to access all my machine capabilities, such as the printer or printers. There's also an icon for the dial-up network. Jim used that dial-up network to be able to access his system back at the office to be able to download his different files and look at his electronic mail.

The other new function that's very good is our network neighborhood. Networking is integrated into Windows 95. I can see, at any given moment, what networks are available to me. We see that we have our client machine, which is my Think Pad, and the server machine is our HP Desktop. So it makes it easy to communicate in a network environment and access different resources, plus it's all done very graphically. These tools and utilities replaced what we commonly saw in Windows 3.1 as the Program Manager. The other new thing that we see new is something that's called the Explorer which replaced our File Manager.

By clicking on my Start button again, and going over to program, I see at the bottom of my program list this new thing called Windows Explorer. This is a very powerful tool, and it's a very efficient tool that allows me to manage my entire environment that I work in just as the Start button does. There's another icon there for my 3½" floppy. There's the Think Pad C drive, which is the hard drive in my Think Pad. There's the C drive on the server control panel, the printer, the Dial-Up network, the Network Neighborhood, and something new called Recycle Bin, which we'll talk about in a little bit. The Windows Explorer allows me to manage and view every element of my environment.

The other thing that we have is a new capability called Shortcuts. How many people have heard of this thing called Shortcuts? All right. Let's take a look at one. I'm going to access the C drive on the server, and I often need to access this directory. I don't want to go into my computer, the Network Neighborhood. I want an easy way to reference that each time. So what I can do is use another new capability which is our right mouse button. For the longest time I heard, "What does that right mouse button do? No one is programming for it." In Windows 95 it

can access many features. It brings up the Create a Shortcut menu. I can create a shortcut to any object. By right clicking the My Computer icon, I can create a shortcut.   I have an icon on my desktop that allows me to access that server. I don't have to navigate through many different network passes and resources to get there. It requires a simple double click, and I have access to that network resource.

Now the other good thing about creating a shortcut is that if somebody changes the name of that server, Windows 95 is intelligent enough to be able to automatically map that link back to my shortcut. The next time I access it, it's right there. I don't have to worry about someone in system engineering or management information systems making a change on me that blows out that shortcut.

The right mouse button also allows me to access properties on anything that's out there within a Windows 95 environment. I right clicked on my desktop and at the bottom of the list is Properties. These Properties allow me to manage my different background display settings. If I want to change my colors or my different drivers I can do that very simply and very easily. I can right click on every object and get a little bit different Shortcut menu to be able to do different things.

Some of the things we've seen here is that our Start button on our task bar gives us the capability to enhance our control of our environment; it's what I like to refer to as a one-stop shopping capability. This stored button allows us to reduce much of the confusion about where our different applications are because you're selecting them from a breakdown of many choices. It also gives me complete access to all my tools and programs. Now the other great thing about our task bar is that it gives me capabilities to access multiple applications in a multitask environment, in other words, it's very easy to switch back and forth between the different entities that we have running at any given time.

Let's discuss Jim, our sample user. How does he use some of the capabilities of Windows 95 to solve some problems? The number one thing is the dynamic configuration capabilities; he is able to undock his machine. We do that through a Control Panel setting. So I'm going to go to the My Computer icon, and go to Control Panel where I can look at my hardware profile. That hardware profile is available from the system icon in the Control Panel. Here I can see all the different devices that are on my system, and I can also manage them quite effectively. On My Computer, under the PCMCIA card socket, I have an X on one device. That's telling me that I'm having a problem with that device, so that I can go in and troubleshoot. There's no more guessing about what the problem is. Windows 95 is managing that for me.

There's another capability that Jim uses by going to the sound driver. I have the capability to use my sound drivers but only when I have the laptop in a docked situation. The computer manages that by setting up a configuration down at the very bottom where it says device usage; it has a checkmark when it's in dock one. That means when this device is docked, I can use that piece of hardware, and it keeps track of multiple configurations. It's a great capability for portable users.

The next thing we want to take a look at is multitasking. Jim needs to download a document. He needs to format a diskette for a presentation that he is doing. He also needs to be able to run a DOS application, but the problem with his DOS application is that it's a bad application. I'm sure everybody is familiar with this thing called a general protection fault (GPF). When you had a GPF, it brought the entire system down to its knees. There's a big protected environment available here and another capability called local reboot that is going to allow us to manage that. One of the things I want to do is copy a file from that server down to our machine. I need the diskette to be able to format it. We're going to see the multitasking in operation.

I'm going to open my C drive on the server in which we have a rather large document. Now this document is about 23 megabytes, so it takes a little while to be able to do that download. In a typical Windows environment you would have had to wait for that download to be able to access other resources and have any type of performance. I'm going to use some drag and drop technology here, and then I'm going to check the research document, and I'm going to download it and copy it to my C drive, so window to window we'll see a graphic that allows us to manage that.

Now the other thing I wanted to be able to do was to format a diskette that I have on my floppy drive. I'm going to bring up my Explorer which is another tool that allows me to manage my hardware. I'm going to go to its properties. We manage these properties and capabilities by right clicking. I have the capability to format that diskette. I just right click and choose format. We can do a full format. Normally that formatting takes about a minute so we'll see down on the bottom that it's formatting that diskette while it's copying this application.

The next thing I wanted to do was to be able to run an application. We'll go to programs. It's a beta application. How many people know about beta? Do they have a tendency to die quite often? Well, this one's going to die on purpose. So we're going to load that. We're going to create a GPF. Normally I would lose the entire system, but we're in a protected environment, so I can close that bad application and still be able to use my entire system without having to reboot. I'm still

copying the file across the network and still formatting my floppy drive. What makes that available is local reboot.

Windows 95 will run a majority of the products that are out there (we'll call them the "legacy" type of systems.) It will still run your old DOS applications. It will still run your old Windows 16–bit application, and it will run all the new Windows 32–bit applications. Now one of the problems that we're finding when running some of those 16–bit applications is that whenever a computer tries to communicate and take control of a high-level task, like an antivirus-type of program or some of the old disk fragmenters, it tries to take control of the system hardware. Windows 95 doesn't want you do that anymore, so there's a capability of protecting an environment without crashing the entire system. That's where we're running into problems. I hear many people running into problems with WordPerfect for Windows when they try to print because Word Perfect wants to take too much control. It also happens when running Norton Disk Doctor or those types of programs.

Another important feature is that I can configure it so that it can support multiple user environments. Right now I'm logged in as Jim Smith. I'm going to close this environment by shutting down the system. I can close all my programs and log on as a different user. So you can share resources, especially if you have people who work in a shift environment or if there are many people in an open office environment. People like their own look and the feel of their desktop; the way their screens look, and how they lay things out. We can support multiple configurations. In the network environment this multiple configuration capability can move with you from machine to machine. If you move to another machine down the hall, you can get that same look and feel.

We need to log in on Steve here, and he's going to be validated by our network. Steve Ward is a vice president of sales and marketing for Volcano Coffee Company, and there are a couple things that he needs to do. The company is going after this Foster account that we saw Jim working on and he needs to do a couple things so that he can stay on top of that environment. Steve needs to schedule a couple meetings. He needs to find a salesperson to take care of this account. So he needs to review some numbers and find out who's doing a good job out there right now. He also wants to make a few changes to a presentation.

We're going to take advantage of this multitasking environment, and we're also going to take advantage of some of the new capabilities built into our systems here. We have a task bar or a shortcut bar. Now they're calling it a shortcut bar in Microsoft Office, which is on the right-hand side. So we have buttons that allow us to do certain things. The other thing that we have is screen test that you might have seen before. When pointing to the Start button, you'll see a little tail that says "click

here to begin." We call these screen tests. There are many right-click capabilities useful in accessing things, as we've said before. The other great thing is something called pad dialogue boxes used to bring up properties. Instead of going through multiple windows to be able to access something and find out its information, all we have to do is find the appropriate path, so we get to work in one window instead of multiple windows. Each tab gives us a different capability.

Let's go back to our Shortcut bar and discuss some of its capabilities. We can send a message, make appointments, and add tasks. These are some of the new features that are inherent in the Schedule Plus program. It allows you to plan, manage contacts, and schedule your day.

We also have two buttons that allow us to create a new document or open an existing document from any of our office applications. Let's take a look at opening an existing document. Office allows you to point to one directory where you can manage all of your documents. It's called My Documents. Another one has the capability to start a new document and breaks it down into different areas. We have general, spreadsheets, presentations, databases, memos, and letters. It gives us a couple sample letters or templates that allow us to get started on a specific type of product. There's a template to assist with creating a fax or a professional letter.

Jim needs to be able to schedule a couple things because he always forgets. He needs a way to manage and plan his day, so we're going to add a new task. We'll click on our Shortcut bar which will load the Schedule Plus program and bring up our capability to add a new task.

One of the other things that he's going to want to do is book a meeting. When he books that meeting, he's going to need to schedule a conference room. The first thing to do is analyze our Foster opportunity and we'll try to keep our typing in order here. So we've added our new task and it shows up in our task bar as "analyze Foster opportunity." Now Jim needs to schedule that Foster opportunity. He needs to prepare a summary for Foster, and he'll do that at 11:00. He had better get a staff meeting as well. He remembers that he needs another task, so right here in schedule he can add a new "to do" item. He has to do a year-end review next month on the 15th. So I'm going to use this upper calendar section to move to June. I'm going to select 15 and I'm going to put that reminder in at 9:00. So it's very easy to schedule your day using the Schedule Plus product.

If I have to go back and see what I had to do, I can click on my button to see my day. If I want to see what my month is looking like, I can obtain a monthly view. I want to check in also. I need to add a new contact.

This capability of contact management integrates with all the other office applications, so that later on, when we take a look at Word, we can capture this information to automatically address a letter using the name and address function.   I can get our address and that's Colorado Springs, Colorado 80918. While I'm here I have the capability to track multiple phone numbers to be able to contact them.

The next thing I need to do is look at my week. I have some holes there, but I also need to schedule a meeting. I'm going to use my Meeting Wizard. The Meeting Wizard allows me to automate this process in a network environment. Now I need to be able to meet with a couple of other people so I need to pick locations. Schedule Plus is going to help me here. The first thing I can do is pick an attendee. I need to schedule Maria and I need to schedule Jim. I'll click on OK. Now I have my attendees. I need to pick a location, so we'll pick the conference room. I've got it. Now I must select how long that meeting will be. I can set some travel time for how long it's going to take to get there. Since it's in our building, it's only going to take me five minutes. I can pick the dates and I can have the computer go out there and search to try to find a hole for this meeting. It's going to look at the range from 8:00 to 5:00 on Monday through Friday and look at all three of our schedules to find a common meeting date. It has picked Tuesday as the first slot. We can all meet from 8:00 to 10:30. If there is a blue bar and a gray bar, it means we are running into conflicts with each others' schedules. Now I can send a quick message to them. We want them to bring the Foster information. I can send that off and all three of them will have mail. The appropriate icons appear in my schedule under Thursday, which is the second one down. It has a reminder. It tells me that it's a scheduled meeting with multiple people. The third icon, the house, tells me that I have a specific location that we're going to be going to for that. I was able to schedule a group meeting quickly and easily.

The next thing I want to be able to do is retrieve a few documents to be able to find out who's the best sales representative. I have something out here I don't need quite yet. Remember we're logged in here as Steve Ward. Steve Ward has a folder out there in the server for everybody who needs to communicate with him; for example, the accounting department can send sales figures. We're going to create a shortcut for that once again by going to our Network Neighborhood. The information is out there on our server in the Steve Ward folder, under Steve W. I can right click on that, and I will drag it off to my desktop which allows me to create my shortcut. So inside there we will see that we have a recent sales file, a new client presentation, and a couple of other folders. The other thing that's neat about a shortcut is I can create a shortcut through a document in that the computer will remember where it's located on the network, what the contents of that document are, and the application that brought that up. So I'm going to create another shortcut over here for the recent sales, because I need to look at that on a day-to-day

basis. So, once again, I'm right clicking and dragging and dropping on my desktop and choosing Create Shortcuts. So we'll bring it up using a double click. We start at Excel to bring up our recent sales.

There's a couple problems that I see that I want to be able to fix, and it will allow me to show off a few of the new capabilities. How many people here are familiar with Auto Correct? We can program this Auto Correct to take common abbreviations that we use on a day-to-day basis and automatically insert information. The most common of these is to be able to get our company name in. So the company that we're representing here is Volcano Coffee Company, so all I have to do is type in VC and a space and it automatically brings in our company name.

The other thing I see is that one of our sales representative is a little bit sloppy and missed one of the locations. What we're going to see here is something called Auto Complete that's available in Excel. Auto Complete allows me to start typing in an entry. All I did was type in the W here and it brought up Wisconsin. If you have a cell or a column of information, it will look for things that have already been entered into that column, guessing that's what I'm going to need. If I continued typing (because it should really be Washington), it disables that Auto Complete capability and allows me to add a new entry.

The other capability that I have here is something that's called Auto Pick. Let's say I don't know my different options. I can right click on a cell and at the bottom it says "pick from list," and I can see all the different entries for that column that we used before as well. Let's say that was Illinois instead of Montana.

Another capability we have is an opportunity called Cell Nurse. In Cell J6, there's a little red dot in the upper right-hand corner.   I can point to that tip with my mouse and it brings up that note automatically. You no longer have to go through a couple menu commands to be able to open up that note information.

Next I want to show you a capability called Auto Filter. It allows me to be able to use an Excel spreadsheet like a database. We can find and ask questions of our table of information. Let's say that I want to find my top ten salespeople out there. I have these drop-down list buttons on the side. I can filter out and hide everybody except for my top ten salespeople. There's a new enhanced capability so I can also find out who represents the top 10% of my total sales. So here's where I set my variables and the percentage, so I see that two people represent the top 10% of our overall sales. So I can pick one of these two to work on our Foster account for us. I can go back and save these changes and it's automatically going to know it must go out there and use that Shortcut and save that on the server for me.

The next application I want to take a look at is Microsoft Word. Let's do a couple tricks. I need to create a letter and on this letter I want to pool information that we had from our address file. So I'm going to go to my personal address book and it's going to show the contacts that I had in Schedule Plus. It's going out there and querying that. I'm going to be able to pull that name and address in. So right now it's looking at my personal address book, but I can go up here and tell it to look at the Schedule Contact List. I chose Patrick Basso and, boom, it filled in that name and address. So I don't have to memorize this information. It automatically brings it in for me.

The other capability that we have here is Auto Correct. I used VC over in Excel. Auto Correct is in every application now and it uses the exact same Auto Correct database, so that I can type in VC and a space and it again brings in Volcano Coffee in Word. Now I'm going to make a few spelling mistakes as I go through here to show off another great capability of Word. It can automatically check my spelling. I have misspelled the word "opportunity" and it puts in a red underline. It gives me a reminder that I need to do a spelling check. So for the spelling check features, all I have to do is go over there and right click on that word and it brings up the list of spelling choices for that. I choose the correct one.

Another capability that we have is Help. There isn't much documentation anymore, but we have a really good help feature that we call the Answer Wizard. The Answer Wizard allows me to ask a very intelligent question or simple questions to get an answer on how to do something. I've done this for us already. It says, "How do I make this look nice?" I want it to go out there and search for the answer and it will come back. We have an option that says Format Text Automatically as I Type. The Answer Wizard is going to teach me how to do this, so we'll click on that. It's showing the menu items and tools. I go to Options. Under the format tab, I have an option called Auto Format as You Type. It allows me automatically to format a list, tables, headings, bullets, and those types of things. We're going to take a look at this Auto Format here. We're going to look at its capability to do a numbered list. I typed in a one, a period, and a tab. I type in my option and it knows that the next thing I probably want to do down from there is another list item, so it keeps track of that. To get out of that list capability all I have to do is enter one more time without giving it any text and it knows to turn off that feature. There are many capabilities built in here to make the product more user friendly.

The next thing I want to be able to do with this is mail this letter off to another associate. We're going to use the mail capability here to make that happen. So I'm going to go to File. I'm going to choose send, and it's going to allow me to send it to another individual using electronic mail. You notice that it's embedded to document one, inside of it, and all I have to do is tell it whom I want to send it. So

I'm going to send it to Maria S. I want her to review the document and send back changes so I can send that out.

There's one last thing I want to demonstrate in Word. We have a capability called Auto Highlight. Now if I want someone to help me out with a specific item, I can click on this Auto Highlight button. It's just like a highlighter marker. It allows me to highlight some text, so it stands out, and a person will remember to work on it.

I want to close by showing you a capability called the Office Binder. The Office Binder has a capability to manage multiple documents from many different locations so we can build it together as one cohesive unit. We're going to go to Office Binder, and I want to embed it as part of an Excel spreadsheet. What I have to do is drag that from my desktop and drop it over here, so it's embedding and binding that together. I also want to put it in as part of that presentation. Now these two different entities are treated as one. When I print the document, it will be in one cohesive unit.

When I print it out, I can get the computer to produce consecutive page numbers for each of these documents. So the Excel document is going to be one through three and the PowerPoint presentation can be five through ten. We get that capability when we print the Binder. At the very bottom in the left-hand corner, there's a choice for numbering and we can number that consecutively. I can set the starting point for this Binder.

I hope I was able to present the many built-in features and make the computer much easier to use. From a support standpoint, it would seem, to a new user, that it's a little bit more difficult. But we have one location going through our control panel and settings to be able to access all of our configuration pieces. And if there's a problem with that specific configuration piece, it gives the appropriate warnings. We get an X, which means it's not available. We also can get an exclamation point that tells us that something is going wrong there.

Mr. Steven Hambruch: At the top you'll see Microsoft SQL server. Microsoft SQL server relational database management system is an extremely relational database engine. It runs on a network server and client applications access the data that it has. In this case, the client application is in an Access 95 application that we developed. This particular Access 95 software product provides all of the front desk technologies that the users need. In our insurance sales office, we have users who are agents or users who are involved in underwriting. We also have users who are involved in administration. So the application has many faces depending on what the usage is. The agent screen has more than others. We'll be looking at policy-holder information. The Access 95 application on the left-hand side of the graph

shows that it takes the census data from SQL and puts it at Excel. Excel holds the rating tables. Once the census data has passed through those rating tables, then a premium calculation takes place and the information is fed back up to the database. We've been able to get Excel to perform some rating information and get some insurance rates for the particular quote.

Then the next thing that happens on the right side is that premium and policyholder data, which was accumulated in the previous step, is now sent both to Microsoft Word for a mail merge proposal letter and Microsoft PowerPoint for a sales presentation. Finally, all of the documents are saved collectively into one Microsoft Office Binder, so now the staff has one place to look for all of the collective information that was produced during the time these proposals were taking place.

The underlying code that makes all this work is Visual Basic for Applications. It's the underlying programming code in all of the Microsoft Office applications. When we developed solutions for these applications, we only have to learn one set of rules. It's very convenient for solution developers. Once you learn how to write a programming code in this one language, then you can write a programming code for Access, for Excel, for Word, for PowerPoint, or for whatever you have. It's a very good thing to do.

The code is reusable in the sense that if you write a very good piece of code and it performs a function in Access, there's a good chance that piece of code will also work in Excel. You can just take the code and copy it over from Access to Excel and use it in a spreadsheet you might be developing there. So the code works in many ways and you don't have to keep reinventing the wheel.

You can also transfer a code. This means that you can have one application cause another application to perform a particular task. We're sending a code from Word to Excel, for example. So we've performed some programming tasks that way. And then, of course, there are all the old lay controls that actually manipulate the data.

The client server technology applications comprise two components. There's the component that runs on the desktop, in this case it's our Access 95 application. There's also a component that runs on the network server. In this case, it's a Microsoft SQL server application. There are two actual programs required to make this type of technology work.

On the client side, the applications typically control the forms of reports, the user interface, and so forth. It typically does not hold any of the actual data in the desktop. All the data are typically relegated to the server. There are a few exceptions, but for the most part, that's the way it is. On the server side, the application

runs specifically on the server and not on any other workstation. It maintains just about all of the data and performs tasks as requested by the clients. A relationship is established between the client and the server; the client asks the server to do certain things. The server does them and passes the information back.

Let's discuss the Microsoft Back Office family of products. We've discussed the Microsoft Windows NT server briefly. Microsoft SQL server is a relational database management system. Three other products are part of the picture here. The Microsoft Exchange Server is a product I mentioned earlier. That's the mail platform. It's an Internet-aware, OA-aware, application-development-aware mail platform. This means that you can write software programs that incorporate the mail system into the software program and take advantage of Internet connectivity and all of these other various features. Microsoft SNA server is for connectivity up to IBM mainframes and host systems such as AS400. The Microsoft Systems Management server is a network administration tool.

Microsoft Windows NT server is the natural choice for application servers and just general corporate network servers because it provides the ability to run Microsoft SQL server, as well as a host of other third party relational database engines and so forth. Take advantage of the full security.

The SQL server portion is capable of handling hundreds of transactions per second and can maintain databases that have hundreds of thousands of records. This is the server portion of the client server database.

I'm going to demonstrate the application and what it can perform. We've modified the application somewhat so it will run on a single machine. We're not actually using the SQL server for the purposes of this demonstration. It's a little difficult to carry many of the network servers around with you everywhere you go.

Mega Insurance Company is a mid-sized insurance interest. This particular portion of the application shows its actual sales, and we're going to drill right down to the nuts and bolts of what we're going to demonstrate here. I have some policyholder information. I want to go ahead and put in come census information.

We have a 35-year-old male employee, a 42-year-old female employee, a spouse, and an 18-year-old male employee. When I hit the Calculate Premium button, it's going to go through a process of accessing every other Microsoft application in Microsoft Office. Down at the lower left-hand portion of the screen, it gives us a little feedback as to what it's doing now. Right now it's calling Excel. It's starting up an Excel session in the background and going ahead and calculating those premium rates. Once it has done that, it says call Word to perform Mail Merge. So

it has its rates. It's going to the proposal document. Having done that, it will go into PowerPoint and begin to create the PowerPoint presentations for the agents to take to particular clients. This entire process takes about three-and-a-half minutes. We're performing the Mail Merge. It's calling PowerPoint and it's going to go ahead and generate a PowerPoint presentation.

What's happening under the covers is the data access themselves. It is actually sending the data, and the programming code is being controlled in Access. So the action of starting up Word and creating a new document and filling the document with the appropriate text and the appropriate data and mail merging that document with the information that's in the database is all being controlled by a programming code within the Access application. The concept of creating a PowerPoint presentation is similar. Access is running program codes that it has stored already to generate something particular in the PowerPoint presentation. So the agent has a nice sales presentation to use.

After it's all done, it saves all the output in Office Binder 1105.OBD under its file name. The file names in this case coincide with the record number in the database, so we can correspond between the database and these Office Binders as the need arises. So here's our Office Binder. You'll see the documents actually pop in there one at a time.

Now the best part about this whole process is that if an individual user were to try to accomplish these tasks, it would take much longer than three and one-half or four minutes to do it. First, you'd have to become knowledgeable about the various products and what the programming code is capable of doing. Second, it takes an amount of time just to open up this program, figure out what kind of slides you're going to do, create this, create that, and basically go through the process. All of that stuff is done for the user. They don't have to worry about any of those decisions. They tell it to do it and they get on about their day. We could be running other applications and performing other tasks while this is going on.

So the process is done. We have an entire quote made. The screen is flashing and that's telling me that we have a message. The message is a coming up to say that the quote was performed successfully. If I click on that tool bar it will bring it up. The quoting process is complete.

So let's take a look at what it has done. We'll close Access altogether. The Office Binder has the actual proposal in Word, and it has the PowerPoint presentation in it. The Mail Merge document has the company name and the contact name. All that stuff is incorporated. The premium information is filled in as well.

If we go over to the PowerPoint presentation, which I think may already be running in the background, we see that the information has been filled, a certain slide style has been chosen, and text styles have been already worked out. The information has been filled in. We have an automated application. We're using Excel to generate the rate; and we're using PowerPoint to do the sales presentations; and we're using Microsoft Word to do the sales letters and proposal and so forth. Of course, Microsoft Access is the central front end for all of that. There's also some Schedule Plus connectivity in the actual application that I'm not able to display here because of the lack of an Exchange server, but the Schedule Plus connectivity also allows us to create appointments for our sales associates and so forth right from within this application. As you can see, all the components of Microsoft Office, when put together in a business solution, form a single, cohesive unit. But rather than manipulating four or five programs separately, the whole bundle can be put together into one solution. You can also connect up to the corporate network and back office product and so forth. So this really drives home the abilities of an office to interoperate in that business solution model.

The Access 95 product has a great deal of rebuilt code in the form of Wizards and Macros and so forth to help the user develop a basic application. The type of work that we're doing exceeds the scope of those Wizards. It is necessary to learn some Visual Basic code and have a basic understanding of Visual Basic in order to accomplish the goals. Some of the elements are much simpler than others and so it just depends on what you're trying to accomplish. This requires a fairly well-rounded knowledge of Visual Basic. When the client is a remote user, we actually use the Mail function to mail the data back and forth between the remote user and the database. So data can be replicated on the main server and, also, on the remote users' machines. They can get an e-mail of the data that they need. They get a snapshot of only the data that's necessary to perform the tasks that they are trying to accomplish. That way we keep the demand for hard drive space relatively low.

The Memory Management Tools in 4.0 have been redesigned. We're currently running a beta release. It come up with an error message in regard to memory, so I guess they're still working on that. The 16-bit applications can do it, but you have the ability to select whether or not they run in their own environment or in their own protected memory space. If you do select that they run in their own protected memory space, rather than running in a pool with others, they do take more memory away from the rest of the system.

Mr. Davlin: Is it possible to off-load the calculations to a calculation server as well to lighten up some of the resources that are necessary on the client machine?

Mr. Hambruch: That brings up a good point. There are at least two components in the client server model. That indicates that there could be more. The third component is what we call an OA Automation Server. This doesn't necessarily have to be a physical piece of hardware, but on one of the servers it's available to the corporate network. We establish an Excel engine that can be used by all the users to run the statistical analysis and so forth. The application is not only pulling data from the main database, there's also these other tools that are placed in specific or strategic areas on the network to do particular functions. This way you can change the rate table one time on one machine and it can affect everybody on the entire corporate network.

Mr. Davlin: Won't that be even more possible as the Internet Information Server comes on line and they get more Web browsing functionality into the Explore incremental? You'll be able to remove a great deal of data redundancy in your application by putting it in one spot.

Mr. Hambruch: Yes. That's correct.

Mr. Davlin: It really makes your client machines lighter weight.

Mr. Hambruch: Absolutely.