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Keynote Speech
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Those of us who have spent several years in the world of technology often lose sight of the fact that we are changing people's lives. Most of what we do is buried behind the veil of steel, glass and plastic that the end user sees. The PC runs faster, the audio is clearer, the video selection is greater, but the technology that makes these things possible is hidden away.

But every great once in awhile, a new technology comes along that enables a paradigm shift, so that everyone associated with it knows that they are participating in a revolution.

1394 is such a technology.

I'm proud to say that I am associated with this breakthrough technology and that my company, Texas Instruments, is one of the innovators responsible for the development and success of 1394.

In the early development stages of what came to be known as 1394, several companies, including TI, saw value in this idea and got behind it. Only with the passage of time and the expansion of 1394 market suppliers did we realize its tremendous ultimate potential.

The 1394 market is really taking off. Just look around you here at the 1394 Developers' Conference, and you'll see a multitude of new 1394-enabled products. 1394 is being used in digital cameras, hard disk drives and desktop video cameras. And, only a few weeks ago, the first 1394-enabled motherboard on a desktop platform was announced.

According to preliminary data from the market analyst firm, In-Stat, more than 442 million computers with 1394 will ship in the year 2002. And, almost 100 million 1394-equipped consumer devices will ship that same year. This means that the 1394 market has already been established and is poised for a tremendous growth.

As the 1394 market developed, we collaborated with what we call the value web. The value web is the group of customers and interrelated suppliers who play an integral part in transforming an idea into a commercially viable technology.

For 1394, the value web is driven by the user's need for a simple PC connection. And it's comprised of hardware companies, software vendors and OEMs who act as the voice of the end users.

Ultimately, all the members of the value web played an important part in the evolution of the 1394 idea. Because we all had our unique perspective on what was needed in the marketplace. The resulting chorus of input on 1394 made the specification stronger and more robust.

Let me explain what's driving the 1394 revolution.

We hear a lot these days about the convergence of the PC, consumer audio-video and communications. But many of us fail to really see the impact this convergence will have -- on our industries, and on the lives of everyone from our grandparents to our grandchildren.

Those of you who have spent some time in the PC industry are very aware of the changes that have resulted in explosive sales over the years. The first PCs were little more than a business tool with a spreadsheet and simple word processor. Few people were interested in owning these electronic file cabinets.

Today, with advanced graphics, Internet access, encyclopedias on CDs, email, games, and tons of software, the target market for the PC has grown. With an increase in applications for the PC, you see an increase in people who are interested in owning one.

If we limit our vision for 1394 to be just a faster interface technology – something that enables us to do what we are doing today but do it faster -- we're short-changing the true benefits of 1394. Even with exciting products such as Device Bay, we are only seeing the tip of the iceberg.

Where we really need to concentrate is on the new applications. Applications that will be enabled by the merging of PCs and consumer audio video products now that they can communicate with each other over 1394.

For the first time, we're able to merge the computing power of the PC with the rich entertainment content of consumer audio video. Computing power and entertainment power, if you will. This will increase the applications for both, and therefore increase sales for both.

Let's go into this in a bit more detail.

The PC industry envies the consumer electronics industry in one respect. It has a very high market penetration. Take televisions, for example. The number of homes in America with at least one TV is well over 95 percent. On the other hand, the consumer electronics industry envies the rate of obsolescence for PCs and peripherals.

The rate at which current owners of PCs replace their PC with newer models is two to three times as fast as for other consumer electronics. If you could combine the penetration of the consumer industry with the life cycle of PC products, you could dramatically increase sales for electronics. By bringing both together over 1394, you are well on your way to a winning formula.

Fifteen years ago, the popular thinking was that PCs would be in almost every home in America in 10 years. Today, we are wondering how to hit 50 percent penetration. It appears that many potential customers will remain difficult to sell on the idea of purchasing a PC. The challenge is how to get the PC market penetration to equal consumer electronics penetration.

Microsoft and many other PC industry leaders have realized that we must make the PC more like other electronics in the home entertainment center if we are going to increase sales. Part of this is accomplished by making more user-friendly PCs, as proposed with the Simply Interactive PC.

However, another strategy, which is not being broadly discussed, is putting a familiar face on the PC. If the end user starts to communicate to the PC through the television screen, rather than the computer monitor, you take a giant psychological step forward in user friendliness. Once the PC is integrated into an entertainment system network and you start developing applications for this network, you have unlocked the potential for 1394.

Growth in the consumer electronics industry is hampered by the fact that almost everyone who wants to buy a new TV, VCR, camcorder, etc. already has one or more. You can give the TV a big screen and sell a few more. You can make it a palm top and sell a few more, but really, there is little motivation for someone who owns a couple of TVs to give one to the kids and buy a new one. People keep their TVs 10, 15, even 20 years. Compare that to a PC.

Who do you know who is still using their PC from 10 years ago or 15 years ago? Even if you know someone who is using a 5-year-old PC, they probably won't admit it. The thing is not even valuable enough to be an antique. You can't run any of the cool software on it. The benefit of an old PC is vastly inferior to the benefit of a new PC. The traditional problem with consumer electronics has been that their features stay basically the same over time. If you bought a color TV 10 years ago, the new TVs have a sharper picture and more channels and are easier to hook up to a VCR, but basically it is the same TV.

What the consumer electronics industry needs to do is to increase the features for new products to the point where people will yearn to buy new products. Until the consumer electronics industry finds a way of doing this, their sales will remain stable but very flat. Even with the introduction of digital TVs this year, with their superior picture, people are going to wait until their old TV dies before buying a new one.

But picture this. By combining the computing power of the PC with the overwhelming entertainment choices being provided by VCRs, DVDs, CDs, cable, satellite, Internet, video games and plain old fashioned network TV, you can change the way we see electronics in our home.

Take this oil painting, for example. What looks like an unobtrusive painting to you and me is actually a flat-panel display TV. Folks can begin to personalize what they watch on TV with sophisticated electronics without calling a single help line or opening a single user manual. You can create new applications for all the products in the home entertainment center, which will radically improve the entertainment value of our home electronics.

For example, let's say you want to watch Penn State football. On Saturday morning, while drinking a cup of coffee, you can turn on the TV, pull down a graphical user interface (provided by the PC) and select Penn State Sports. The PC logs on to the Internet, searches the TV database, finds Penn State Football on ESPN and returns the message Penn State Plays Texas A&M at 2 p.m. You click Yes. You did not have to look up the time. You did not need to be concerned about if it was on ESPN, ABC Sports, a local station, or whatever. Your concentration was on the content. You let the PC find the source.

If you are out of the house at 2 p.m., you don't need to worry. The PC knows if the TV is on and if it is on the right channel. If not, it automatically turns on the Read-Write DVD and starts recording the game. If you show up at 2:15 p.m., you can tell the TV to Start Program in Progress. The PC handles the time shifting, which allows you to start the game from the beginning while recording the game in progress. Perhaps you want to keep up with what is going on in the Florida State - Nebraska game. Select Score Updates and the PC goes out to the Internet again and scrolls score updates across the bottom of the screen. The viewer does not need to know where the scores are coming from. He concentrates on content and lets the PC worry about source.

The doorbell rings. Rather than having the viewer select the front door monitor, the PC could automatically interrupt the ballgame, much the same as a weather alert does. You can then see what's happening at the front door. Why force our viewer to miss any of the game?

All anyone had to do was to hook up all these devices with easy-to-use 1394 cables. No special instructions required. With this sort of capability in place, the content providers will start enhancing the information available to the new user.

If the A&M quarterback starts to limp off the field, the viewer can pull down the GUI again, click on Medical History and review all the stats on his hamstring. Hey, that would be big news in Texas!

If you are having trouble keeping the characters clear in a movie on TV, click Pause, the show starts recording while you select More Information and read the bio on each of the characters. It will get to the point where all TV shows become Video on Demand. The scheduled broadcast time will simply become the time when the new show is available. You can watch the latest *ER* episode on Thursday at 9 p.m., or Saturday morning. All this because we are now able to combine computing power with entertainment power.

As you can see, we are on the verge of a revolution. As with every revolution there are winners and losers. Those who hold on to the old ways are the losers. Those who participate in the revolution are the winners. Who was Alexander Graham Bell before the telephone, Orville Wright before the airplane, Henry Ford before the automobile? Who was Gordon Moore before the microprocessor, Steven Jobs before the PC, Bill Gates before DOS? These are all people whose names are written in history as icons associated with the revolution they enabled. The history of the 21st century is being made today and the icons of the convergence revolution are beginning to form. Names such as Teener and Smyers loom large on the 1394 landscape. Who else in this room today will be added to this list? Who will add their name to the list of giants in the world of technology?

Today, 1394 is enabling many flourishing start-ups. It is moving careers into the fast track. There are even huge multinational corporations that are banking on 1394 to increase their sales, change their image and move them ahead of their fiercest competitors.

1394 will soon change the lives of everyone in the world who owns a TV and something to connect to it. But before that, it will change the lives of every person with the insight, intelligence, or just plain good luck to get involved in the designing, marketing, selling, or managing of 1394-enabled products.

At TI, we are proud to have been one of the original pioneering companies that launched the 1394 development in the early ‘90s. Today, we are especially pleased to witness a strong and growing 1394 value web. And we’re leveraging TI’s 1394 leadership to help grow this market for the benefit of the worldwide 1394 community.

Where were you when the PC, or CD, or DVD was being conceived? Most of us missed those legendary opportunities. Most of us miss the opportunity to participate on the ground floor in the exciting technologies, which capture the imagination of a generation and change the course of an industry. But no one in this room needs to miss the opportunity before you today. 1394 is here and soon it will be everywhere.

What piece of history do you want as your own? The opportunity is yours. Take it up. Make the most of this week and the training available to you. Make the most of this year as you prepare to launch a 1394 product in 1999. Make the most of your career. 1394 is the best career move of the '90s and a great career foundation at the start of the new millennium. Don't miss this opportunity.

Thank you.