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DR. HECTOR RUIZ: Thank you everybody and good morning. It is a real honor to be here today at Comdex. It's a true touchstone event for all of us privileged to be part of this great industry.

I say privileged because regardless of the current economic climate, I challenge anyone to think of an industry that has contributed more to the quality of lives of people all around the world. Our products and our services influence every discipline, every walk of life, the way we work and the way we play.

This week, we gather in Las Vegas to meet, to network and take stock of our industry together. Not just as business executives, but as friends and colleagues, who share both a friendly competitive spirit but more important, a common mission. A common mission to help re-focus our industry in the direction it needs to go in order to ensure success for all of us.

In that collegial spirit, I'm sure that all of us this week will spend at least a few moments reflecting on the meaning of this year's theme - "Road to Recovery...Road to Discovery."

In preparing for the talk, I found the theme inspiring and challenging. Inspiring because it holds out the promise of a general industry turn-around and challenging as well because it throws down the gauntlet to us to discover how to engineer that turn-around.

I know many of you are probably a little bit skeptical about would-be industry gurus that stand up here painting a picture of some future technology Utopia and how we're going to get there.

We've seen a lot of that in the past few years. In fact, several of them right from this very stage. But rest easy, that's not what my presentation is all about.

The theme of my talk today is "**Let's Get Real**," and that, my friends, is what we're going to do today.

In fact, what you will see and hear on the stage the rest of this morning will all be real - real solutions for real customer problems that exist in the real world today.

Not examples of technology for technology's sake - not digital pies in the sky either. Let's get real with innovative technology that enables people do to what they want to do better, faster, more productively, and more cost effectively than they could ever do before.

That's what "Road to Recovery... Road to Discovery" means to me.

That's not to say that what I'm about to show you isn't fun, whiz-bang, or just flat-out cool. In fact, you're going to see lots of stuff that I think you'll really enjoy. So, let's get started.

Let's start by admitting the obvious – this is a time for radical change. Not just in our little corner of the world but across the business and around the globe.

Now, since AMD is a semiconductor company, I will speak specifically to the fundamental transformations that I believe is occurring in our industry. Where appropriate, I'm going to take the opportunity to extrapolate from our experience to the IT industry at large.

In my view, there are two rather unique conditions that frame the situation faced by today's semiconductor companies. Interestingly enough, both have been around for several years – decades as a matter of fact – but I believe that we are just about to reach the stage where we're feeling their full contradictory effects.

The first is a rather obscure observation about the cost of capital in our industry. It was offered by a venture capitalist named Arthur Rock. It is known as Rock's Law and its central thesis is that the cost of capital equipment in our industry will double every four years.

That observation has held true fairly consistently to the point where the cost of new high-end wafer fabrication is prohibitively expensive to everyone but the industry's few largest players. Cutting to the chase, the point is that developing new and more technically advanced transistors is very expensive.

Are you with me so far? Good. Because here is where things get rather interesting. For along with Rock's Law, there is another, more widely known economic theory known as Moore's Law. And, as many of you are aware, Moore's Law states that the average cost of a semiconductor transistor will decrease by half every 18 months.

So what does that mean?

Well, by the late 1970s, the incremental cost of a transistor had already dropped below a penny. *By the late 1970s!* That's more than 20 years and counting.

Since that time, Moore's Law has also continued to hold true so that today, the average cost of a transistor is approaching one-millionth of a penny. In other words, you could say that "we're giving 'em away." And, for all intents and purposes, that is true. The cost of transistors has reached the point where they are free.

So, what are you thinking about this? You know, what does this mean? Are transistors expensive or are transistors free? The answer is yes.

As the ancient Chinese salutation says, "May you live in interesting times."

We certainly, in the semiconductor industry, are living in interesting times. But it doesn't take an economics degree to predict that, once something is effectively free and it has value, it will find its way into many, many places. This is true of the modern transistor.

In today's world, software and silicon have become the "plastic and steel" of today's economy. And, if nothing else, this should make all of us feel better about the long-term macroeconomic prospects of our industry.

Think about it. Regardless of the product arena, a growing number of products are defined by the features and functionality that are defined in software and silicon.

Now take a look at today's cell phone. It's really a keyboard, display and silicon and software.

...So is a PDA.

...So too, if you really want to get down to it, is a digital television.

...and the dashboard in your automobile.

This information technology industry is no longer a distinct and freestanding industry. It is rapidly becoming the DNA of every industry – and it is changing the competitive dynamics of everything it touches.

Perhaps nothing better highlights the transformational effect of silicon than our first demonstration today. Because, while the guitar is an instrument that goes back to the 14th century, its transformation has gone through a remarkable acceleration with the advent of microprocessors and wireless communication technology from companies like AMD.

The Gibson Guitar Company is a true leader in this area. Many of you know Gibson, thanks to the legendary guitars such as the Les Paul. But fewer of you know that Gibson has been the vanguard of the digital revolution in entertainment. And not just how it relates to musical instruments, but also in the areas that extend beyond the creative artists and their content to how that content can be managed, distributed, and played back to audiences in their homes around the world.

Here today to share with us some of the fruits of their efforts is the Chief Executive Officer of Gibson Guitar, Henry Juskiewicz - please welcome him.

HENRY JUSKIEWICZ: Hey Hector. How are you?

DR. HECTOR RUIZ: Great. Henry, it's a pleasure and an honor for us to see these Gibson guitars. Talk to us a little bit about the dramatic changes in your industry.

HENRY JUSKIEWICZ: Well Hector, you're talking about transformation and what I'm holding in my hands right now, is one of the world's first digital guitars.

In this guitar, we have a hexaphonic pickup, where we pick up every individual string and transfer it to a digital format. It then gets transported via an Ethernet cable. Two technologies are instrumental in this instrument -one is MaGIC, which is our new digital media transport protocol, and of course, the other one is an AMD processor-based workstation with Hypertransport™ technology, where that digital signal then gets put into a workstation.

DR. HECTOR RUIZ: Wow. I think I heard you say Ethernet? Is there actually an Ethernet board in this thing? Wow, there is.

HENRY JUSKIEWICZ: Well, there is actually an Ethernet cable on this guitar

DR. HECTOR RUIZ: It's amazing.

HENRY JUSKIEWICZ: Well, there will be an Ethernet cable on this guitar.

(Henry Juskiewicz plugs cable into guitar)

DR. HECTOR RUIZ: That's cool. You know, we probably could use some help, because

to make this work, we need, of course, an AMD processor-based workstation. Let me bring one of our geniuses to help us do this – one of our marketing people that understand this probably even better than you and I do. Let's get Charlie Boswell here. Charlie.

(Gibson Guitar and Digital Audio Workstation demonstration.)

CHARLIE BOSWELL: Hi, Hector. How you doing? Henry.

HENRY JUSKIEWICZ: Well, what do you have there, Charlie?

CHARLIE BOSWELL: What have you got?

HENRY JUSKIEWICZ: Well you know, I'm holding this guitar but we're really going to see what it can do a little bit later. Normally, I would have it plugged into this AMD workstation, with Hypertransport protocol. So, tell us a little bit about that.

CHARLIE BOSWELL: What you're looking at here, Henry, is an AMD digital audio workstation. It's based on AMD Athlon™ MP processor technology, and what this allows you to do- it allows everyone from a home enthusiast all the way up to the top professionals in the industry to create Grammy-winning records. It's about media creation using AMD technology.

DR. HECTOR RUIZ: You mean a guy like me could actually do that at home?

CHARLIE BOSWELL: In fact, Hector, I think later on in the show we're going to give that a shot.

DR. HECTOR RUIZ: Oh. All right. Charlie, tell us a little about what exactly a DAW – digital audio workstation – does.

CHARLIE BOSWELL: Well, a digital audio workstation, as you can see here, allows an artist to create tracks in a multi-track way. This is about the collapse of ancillary hardware into x86 cycles. So, the x86 processor here is running the entire studio, as witnessed by all these wave forms. These are all the tracks that an artist would use and this would be his mixer that he would finally master his final product.

DR. HECTOR RUIZ: Wow. That's pretty cool.

CHARLIE BOSWELL: So, whether you're scoring a movie or writing your next hit record, this is the technology that can help you. What used to be very expensive and inaccessible to the artist now is readily available with AMD technology.

DR. HECTOR RUIZ: Henry, it sounds like from what Charlie tells us that with Ethernet connections and the guitars and instruments and AMD-based hardware, pretty soon people will just be able to wirelessly stand up and play. Technology will take care of everything.

HENRY JUSKIEWICZ: I think it has implications, not only for the professional world of musicians, but also for the home, where this technology could really eliminate guitar babble of different connectors and formats and so forth. So, these are very exciting times.

DR. HECTOR RUIZ: Right. Well, it sounds fantastic. I guess we'll come back to that a little later.

CHARLIE BOSWELL: Absolutely. Thank you, Hector.

HENRY JUSKIEWICZ: We'll see you a little later.

DR. HECTOR RUIZ: All right – Henry.

HENRY JUSKIEWICZ: Thanks again.

CHARLIE BOSWELL: Thank you.

DR. HECTOR RUIZ: You know, that's pretty impressive.

Actually, you've seen how their thinking is going along, of creating a networked environment where musicians will come in and plug in and play. And the intelligent network could be wireless, by the way. The MaGIC technology will take care of all that - adjust it to the room, etc. All, again, based on the AMD hardware that you saw up here.

Well this certainly has demonstrated to me and the technology community the enormous opportunity that we have to influence industries like music. But with it also comes an enormous responsibility to ensure that people truly take advantage of the technology that we're helping create.

It's a responsibility that we at AMD take very seriously.

If we can be criticized for anything in this industry, we can be faulted for our tendency to create sometimes a lot of technology and very little innovation.

So, what's the difference? In a word, customers.

You see, I believe that, in aggregate, we as an industry have been guilty of pushing our capacity to deliver more and more, faster and faster, for no better reason than "because we can." Sometimes I think we've forgotten that – when all is said and done – someone out there has to be able to do something a whole heck of a lot better than they could before. So, what we've done is basically irrelevant in some cases.

I think, given the current economic climate— it's time to do a bit of reset. Around the customer. Adopt a policy that says, "no new technology without real customer input or without real customer demand." At AMD, we call this "customer-centric innovation," and it is driving everything that we do at the company these days.

Just recently, we announced an upcoming microprocessor we call the AMD Opteron™ processor. It is based on a rather innovative new architecture – one that gives you both 32-bit compatibility and 64-bit capability in the same processor. Remarkably, on this tiny, thumbnail-sized device there are 100 million transistors.

One hundred million.

Now, when the kinds of people – customers - who know what they could do with 100 million transistors, start brainstorming, it gets mind-boggling. Simply put, it represents both a phenomenal challenge, as well as an unprecedented opportunity.

For us at AMD, the challenge is no longer one of making transistors cheaper. Let's face it - if we tried to go from one-millionth of a penny to point-nine-tenths of a penny, we're probably not going to impact a heck of a lot of the value that the customer perceives.

So where does the upcoming AMD Opteron processor's value proposition reside? The answer is, of course, not with us but with the customers who know what they want to do with those 100 million transistors.

Who knows better what to do with 100 million transistors than Cray Incorporated? The name is practically synonymous with the term, "supercomputer."

When Cray came to us, they were looking for a partner who could help them develop one of the world's most powerful and reliable computers. The U.S. Government's Sandia National Nuclear Laboratory partnered with them on this project.

Sandia plays a critical role in our nation, in our world's defense. They were asked to develop a means to rapidly accelerate the ability to simulate advanced computer modeling and testing of nuclear weapons. Sandia turned to Cray and Cray, I am proud to say, turned to AMD.

The result is a joint effort to build the world's most powerful computers based on a Massive Parallel Processing Architecture. To give you an idea of the sheer scale of the machine, it will be powered by more than 10,000 64-bit AMD Opteron processors working in concert together.

AMD was chosen to provide the processors for such a challenging feat – it will easily rank in the top engineering achievements of the next few years – because of the way we listened and worked with our customer to ensure that they got what they needed.

Now, let's take a look at what this new supercomputer is all about. I think you'll find it extraordinary and exciting.

[Cray Incorporated/Sandia Labs Video]

DR. HECTOR RUIZ: You know, in my view, this is a classic example of one partner providing complimentary technology to help another partner solve its own customer's problems. And ladies and gentlemen, we are especially proud to be part of that mission.

Our next example of "customer-centric innovation" takes us from helping to simulate and visualize problems in the real world to problems in the worlds of imagination.

JAK Films, founded by George Lucas to create the Star Wars prequels, is on the cutting edge of filmmaking technology – for part of the magic of making the Star Wars prequels is a process called pre-visualization.

Here to talk to us about how JAK Films and AMD partnered to help realize and ensure George's visions for Star Wars, would you please give a warm Jedi welcome to JAK Films Pre-Visualization Manger, Daniel Gregoire.

DANIEL GREGOIRE: Hector, thank you very much. It's a pleasure to be here.

DR. HECTOR RUIZ: Dan, this is great. You know, it's amazing and we're just delighted to be your partner. The stuff you guys are doing is phenomenal. It keeps getting more challenging all the time and I'm sure the audience is going to get a thrill out of listening to your talk.

DANIEL GREGOIRE: Well, I hope so. I hope so. Before I get started here, I actually have a special guest. A member of our cast would like to come out and maybe do a

trade with you.

DR. HECTOR RUIZ: Oh really?

(R2-D2 video plays)

R2-D2: Greetings to everyone at Comdex. Great to see you, Hector. Congratulations to you and the AMD team.

Perhaps I can interest you in a trade. A ride in one of our X-Wing fighters for an AMD Opteron processor? I'll save you a seat.

(end R2-D2 video)

DR. HECTOR RUIZ: That's cool. Thanks a lot.

DANIEL GREGOIRE: You bet. Thank you. So who here has seen Star Wars Episode II? Anybody out there? Anybody? The fastest selling DVD of all time?

Pre-visualization is the art of storytelling and today I'm here to tell you how with AMD, JAK Films was able to do incredibly complex pre-visualization for George Lucas in the making of Star Wars Episode II *Attack of the Clones*.

Pre-visualization, historically, has been done with storyboards and production paintings or production art. These are both incredibly powerful tools and they're still in heavy use today. In fact, we're using them currently.

But we wanted to give George an even more incredible tool for him to have complete front-end creative control over the Star Wars universe – something that he could sit down with us, explain to us what he wanted and then show everybody what he was talking about on a video monitor.

So before I get too far on this and start to confuse everybody, I'd actually like to play a little video on the screens here, that kind of details that. Some of the shots are done by our department, JAK Films, and some of the shots preceding them will be done by ILM, the special effects company that did all the great final work. I'd just like you to take a look at how similar they are in form and feel.

(JAK Films Star Wars video demonstration)

DANIEL GREGOIRE: So as this plays, you can see the work that we did is incredibly complex and in pre-visualization, speed is the key. That is why we chose the AMD Athlon MP processor-based platform to put on all of our artists' desks.

The shots that we're doing are 90 percent of the way there and we're doing them in ten percent of the time, for an unbelievably low amount of cost. In fact, we only have 12 people on our staff at any one time – and in fact, usually we have fewer. Each one of my artists is responsible for about three to five shots per day and we would not have been able to do that without the AMD Athlon MP processor-based platform.

The total number of shots that we did on Episode II was about 4,000. Now to contrast that, there are only about 2,200 shots in the entire film so we did about two movies' worth.

Now why did we do that much work?

As you can see, it's all very complex. It tells a story. It tells George the mood and the feel – everything that he needs to make the decisions to cut the film together before film is even filmed in Australia.

More importantly, it gives him the tool to go down every avenue of creativity that he has and choose what works. We can do it in a very cost-effective manner. We can do it very fast and we do it all on the desktop, using AMD Athlon MP processor-based systems.

We have an AMD Athlon MP processor-based system render farm in the back so that my artists do not have to render at their desks and an AMD Athlon MP processor-based server system down in the basement, so that we can all share files very fast and effectively.

So like I said before, we do 90 percent of the work in ten percent of the time and we do it very cost-effectively. This is an incredibly powerful tool for directors – not only George Lucas – to be able to envision what they're going to be doing in the final product, get it on a monitor and show everybody involved, so that everybody's on the same page and the vision doesn't get lost in the end.

The Episode II DVD has an incredible documentary on this. You can hear it in George's own words.

In closing, I'd just like to thank AMD for their incredible technology, for their speed and for their partnership. I'm very much looking forward to using their 64-bit technology in the future. Thank you very much Hector.

DR. HECTOR RUIZ: Dan, great, thank you.

DANIEL GREGOIRE: You're welcome. Thank you.

DR. HECTOR RUIZ: It's great to have a partner like you and we look forward to helping you along in your future films too.

DANIEL GREGOIRE: We're looking forward to it as well. Thank you.

DR. HECTOR RUIZ: Thanks a lot.

DANIEL GREGOIRE: Thank you.

DR. HECTOR RUIZ: Our relationship with IBM provides us with another example of what I mean by "customer-centric innovation." In just this past year, IBM became the worldwide leader in database management software, with more than 60 million DB2 users from 450,000 companies worldwide that rely on IBM data management technology.

As you may not know, during that same time period, we've been working closely with IBM to bring their DB2 database software to the upcoming AMD Opteron processor 64-bit platform and I'm pleased to say that this effort has been extremely successful.

Here to tell us about the process and the results is IBM's Vice President for Data Management, Architecture Technology. Dr. Pat Selinger has over 25 years experience in relational databases and is one of only approximately 50 IBM Fellows in the company. Ladies and gentlemen, please join me in welcoming Dr. Pat Selinger.

Pat, first of all, thank you for being here. Our partnership with IBM has been great in the AMD Opteron processor area. Perhaps you could tell us a little bit about why this is so important and the role database plays in businesses.

DR. PAT SELINGER: We hear a lot from our customers, in terms of the kinds of demands on information technology. They're unprecedented. We have growth in the power in the processors, in our hardware, from companies like yourselves at AMD. And at the same time, we're facing a business need to combine traditional database data with the data that comes from other forms, unstructured data, e-mail for example.

And all of this has to be done in a business survival environment, where low cost and high performance are keys to success. We see a dramatic volume – a dramatic increase in the amount of data going forward, up to 10,000 times, depending on the kind of device that we have.

The way to put this all together, to have a solution – a very impressive solution – is the ability to take AMD Opteron processor's 64-bit processing technology together with DB2's universal database 64-bit and run applications – either 32- or 64-bit applications – and we have the solution here today.

DR. HECTOR RUIZ: Wow.

DR. PAT SELINGER: I'd like to show it to you.

DR. HECTOR RUIZ: So you actually can demonstrate a database, huh?

DR. PAT SELINGER: Absolutely.

DR. HECTOR RUIZ: All right.

(IBM DB2/AMDOpteron processor porting demonstration)

DR. PAT SELINGER: What we have here is a two-processor AMD Opteron processor-based system and we are running DB2 for Linux, 64-bit, on that 64-bit set of processors.

What we did is, we took two days – only two days – to port DB2 to the AMD Opteron processor technology.

What we have here to show you is two different databases – both data warehouse databases. We're taking advantage of the large amount of memory that a 64-bit processor brings to us, to be able to run a very complex query and very scalable processing on this database system in a very short amount of time.

So this is an industry standard benchmark kind of database. We're running queries that are very similar to those in decision support benchmarks.

And there, we have the answer already.

DR. HECTOR RUIZ: That was it?

DR. PAT SELINGER: That's very impressive, isn't it?

DR. HECTOR RUIZ: That's incredible. That's impressive. That query, as you said, is a benchmark in the database industry.

DR. PAT SELINGER: Yes.

DR. HECTOR RUIZ: That was fast.

DR. PAT SELINGER: Yes. What you saw here was the scalability of DB2 on the two-processor system, taking advantage of the large memory, and at the same time, a second database also running a complex query, and so scalability among different workloads within the same system as well.

DR. HECTOR RUIZ: That's impressive. I would imagine that the enterprise world would just be eagerly waiting for something like this.

DR. PAT SELINGER: This is an impressive solution indeed.

DR. HECTOR RUIZ: Great. Well Dr. Selinger, thank you very much.

DR. PAT SELINGER: Nice to talk to you.

DR. HECTOR RUIZ: Appreciate it.

You know, being a "customer-centric" company demands that you try to understand both the needs of the direct customer, as well as the customer's customers, meaning the consumer, sometimes. In the past decade, we have seen a subtle yet dramatic transformation in what consumers are looking for from their technology.

You see, with the introduction of the Internet and improved wireless communication standards, PCs are arguably more connectivity devices than productivity devices.

At *home*, the primary applications for a personal computer are e-mail, instant messaging, and Internet access – not balancing your checkbook. The time is fast arriving when we will see the PC become the central hub of the home.

At *work*, productivity is still supremely important – but again – with the Internet, productivity is now seen as dependent on connectivity. Companies know that their scarcest resource is creativity – and that the only way to exploit this precious resource is to connect people to those resources that they need to rapidly bring their ideas to life.

In short, at home and at work, connections are the currency of our lives.

And, as a testament to the power of connections, I would like to share with you a recent AMD partnership, of which I'm personally very proud, because it represents a powerful connection between companies, between peoples and between cultures.

Just last month, I was proud to announce a definitive agreement in between AMD and the China Basic Education Software Company, Limited. One of the principal partners in CBE is the Chinese Ministry of Education. And, one of the stated goals of the Ministry is to link all schools in China by an Internet-like network by the year 2010. In addition, the Ministry has committed to equip each classroom teacher with a contemporary PC, connected to a server, and each student with an Internet access device.

The vision is bold and forward thinking. The solution uses AMD technology ranging from Flash memory to AMD Athlon processors to AMD Alchemy™ wireless solutions. What is truly exciting to me is the opportunity that it represents for the millions of students in China. I'd like to share with you some of that excitement now.

Mr. Wang Xiao Wu is the Board Chairman of CBE. He is also an official with the China Ministry of Education. Here is Mr. Wang speaking about what his business deal means to his nation and to his people.

[China Ministry of Education Video]

DR. HECTOR RUIZ: I think that's pretty impressive.

You have to have a soft spot for kids, to see these kids looking at the future with such hope and enthusiasm. It's just pretty amazing. It's so incredible to be a part of that.

This is an exciting partnership and I'm sure that results will be mutual and beneficial for the people in China, for our business, and of course, for everyone around the world, because this can be extended to them too.

On one level, it will provide world-class technology through state-of-the-art hardware.

And on another level, it will demonstrate our commitment to advancing the technology market in China, and our competitive position in that marketplace, which is a strategic focus for our company.

Finally, it represents an opportunity that is simply incalculable in size and scope for hundreds of millions of young men and women, boys and girls.

For the students of China, do you think that once they've been exposed to this kind of technology, they'll ever be willing to live without it? I don't think so, and our capacity to connect with each other will only increase. I have to believe that this is true.

Sometimes, our job in the technology world is to help build connections of another type. Connections that come from allowing people to bring their unique personal vision to life – and to others. These are the kinds of connections the geniuses at Epic Games build with their customers.

Based in Raleigh, North Carolina and established in 1991, Epic is a developer of cutting edge computer and video games.

Epic has created a corporate culture that's optimized for pushing the creative envelope to new and more amazing levels. That desire made Epic a natural fit for AMD, an acknowledged technology leader in the gaming industry.

Our 64-bit desktop processor – which, I'm proud to announce here for the first time, will be called the AMD Athlon 64 processor – is providing software developers like Epic pictures that will help allow them to deliver more compelling applications.

When I speak about designing innovation that helps people today, I can't think of a finer example than what we are about to see. Ladies and gentlemen, would you please give a warm welcome to the Founder of Epic Games, Tim Sweeney and Vice President, Mark Rein.

Tim, Mark - first of all, thank you for being here. You guys are leaders in your field - awesome - and we look forward to what you have to tell us.

(Demonstration of Unreal Tournament running on an upcoming AMD Athlon 64 processor)

MARK REIN: Well now it's time to get "Unreal." This is Unreal Tournament 2003. It's

our most recent game. We just shipped a little while ago and it's going to be in stores for Christmas – it will make a great Christmas present.

TIM SWEENEY: Now what we're showing here is the new 64-bit version of Unreal, up and running on the AMD Athlon 64 as a native 64-bit application. Now, over the last week, we ported it with single programmer working for a week, upgraded it to 64 bits and found the platform to be extremely stable and easy to work with.

DR. HECTOR RUIZ: Tim, tell me why are 64 bits so important to gaming?

TIM SWEENEY: Well the AMD Athlon 64 processor is really exciting because, long term, games are all about realistic graphics and sounds and everything and that's all very much limited by memory. We're already finding the 32-bit address space limiting, so we're very much looking forward to shipping games that take full advantage of this.

It makes a lot of sense for games to really be pushing the technology here because gamers are often the early adopters. You know, they're the people who are buying the latest and fastest computers and getting the great video cards and really able to take advantage of this in the consumer space.

DR. HECTOR RUIZ: Well that is great. Mark, is this going to be able to help consumers soon?

MARK REIN: Absolutely. What I think is really exciting for us is that at the time that Hammer ships we're actually going to be shipping an update to the game. So, if you already have an Athlon 64 and you own this game, you'll be able to get the full benefit of 64-bit.

DR. HECTOR RUIZ: Wow. Let me get that straight. You mean if I buy a desktop machine next year, a 64-bit machine – with an AMD Athlon 64 processor- I'll be able to download the upgrade to that and do a 64-bit game?

MARK REIN: Absolutely.

DR. HECTOR RUIZ: Man, that's cool.

MARK REIN: Well, what's also cool about it is – I don't know if you know – but we licensed the Unreal technology to major game developers like the Harry Potter game, Splinter Cell, Deus Ex 2 and Thief III.

Oh look, I'm getting "hammered." (*commenting on score in Unreal Tournament 2003 video game demo*)

(*laughter*)

And all of our licensees will have access to 64-bit codes, so the games that are built with the Unreal technology – I think you're going to see a lot of them having a full 64-bit version.

DR. HECTOR RUIZ: That is exciting - the fact that you guys moved to 64 so quickly. I guess that speaks about how easy it is to migrate from 32-bit to 64-bit, right?

MARK REIN: Yeah. It was a very straightforward project. We had one programmer, one week, and it's all up and running with full features and full compatibility. This is

running on the latest NVIDIA card and open GL and running quite well at full performance.

The other exciting thing about the AMD Athlon 64 processor is that gamers have all of their favorite games. We're on the latest 64-bit applications at great performance so we'll run all of your old games at great performance too.

TIM SWEENEY: Well, the performance boost actually.

MARK REIN: Yeah. This is faster than any of its predecessors by a significant margin.

DR. HECTOR RUIZ: Well, I want to tell you, this is impressive – we're so thrilled and delighted you could join us today for this. We appreciate it. Tim, it's been a pleasure. Thank you.

TIM SWEENEY: Thank you very much.

DR. HECTOR RUIZ: You know, a while ago I spoke about Rock's Law and Moore's Law, that have provided the basis for guiding semiconductor companies in the past few decades.

The truth is, of course, that while both of these laws continue to be technically accurate, they will prove to be of declining relevance for our industry. Let me talk about that.

Moore's Law is your guiding light if your focus as a semiconductor company is, quite frankly, yourself.

But it says nothing about customers and what they might do with that technology. It says nothing about the importance of "customer-centric innovation."

In fact, if any business "law" is relevant to our times and to both the semiconductor industry, and to our technology industry as a whole, it's the formulation known as Metcalfe's Law.

Metcalfe's Law was developed by Robert Metcalfe, while he was at Xerox PARC. He was credited for inventing the Ethernet and eventually went on to be one of the founders of 3Com. What Metcalfe's Law states is that "the value of a network grows as the square number of the users of that network."

We can all see the power in Metcalfe's Law through a very simple example – the telephone. If you were the only one with a telephone, it would be of little value to any of us. However, given the fact that almost everyone has a telephone, this device has incredible value.

Well, I believe that a company can be thought of as a network – a network of people, of capabilities and ideas. If you agree with me on that you might see the power of Metcalfe's Law as it is applied to a very specific network called a "company."

Using that law as a model, the value of a company would then be dependant not on its sheer size, but upon the number and quality of that company's connections in the world at large.

I mention specifically the "quality" of relationships because I believe it is this concept of "connection quality" that will become increasingly important as we move forward from

here.

In the future, it's the quality of the connection that counts.

What does Metcalfe's Law suggest in terms of where we need to go in the industry? If I may be allowed to extrapolate what it suggests for the technology industry as a whole... in my view, this law is the new Rule of Engagement for all of us. The new Rule of Engagement that will set the standard for excellence in our industry and for our customers in the years to come.

Partnerships and relationships are the key to a new and more successful business model. We in this great IT community have become increasingly co-dependant on each other for our success. In the future we are all helping to create, success for one will not be possible without success for the other.

In my view, this migration to what I call a "connected business model" represents the engine that the technology industry has been searching for to drive it back to the top.

At AMD, our commitment to this new "connected business model" is something we emphasize and reinforce in everything we do every day.

Working with partners like NVIDIA, ATI and VIA, AMD is able to deliver compelling technologies that – in concert – deliver superior PC system performance. In fact, it wouldn't surprise me if some of our partners had interesting 'adaptations' of our technology in their booths here at Comdex. Take a minute when we're done and check it out for yourself.

One of our most highly respected partners and another "true believer" in the "*connected business model*" is a neighbor of ours in the Bay Area, NVIDIA Corporation.

As many of you might already know, NVIDIA is one of the world's leading producers of graphic processors and media and communication devices.

Here to demonstrate some of the fruits of our partnership is the President, CEO and Co-Founder of NVIDIA, Jen-Hsun Huang.

Jen-Hsun, it's a pleasure and honor to have you join us up here. We're great partners. We've done some great things together and we can talk about that a little bit more, but you guys have done some great stuff.

JEN-HSUN HUANG: We have. Thank you. In fact, I'm delighted to be here. AMD and NVIDIA have worked together for many years building great technology together.

DR. HECTOR RUIZ: Great. I understand you've got some sexy stuff that you guys have done. It really tells people the power of the technology and the things that AMD and NVIDIA have done together.

JEN-HSUN HUANG: Yeah, we have a great treat for the audience today. In fact, yesterday we announced our next generation GPU, called a GeForce FX. It is the world's first cinematic computing-capable GPU.

It has several important characteristics and new features.

First is the ability to support and run in real-time, very complex cinematic shaders. These are 3-D graphics programs.

It is also the first 128-bit floating point color precision GPU, so that it could render images in cinematic quality.

The third thing is that it's the first one to be built in .13 micron with copper technology. It supports the world's first gigahertz memory, so that the performance is going to be extraordinary. I'm delighted to show it to the audience for the first time today.

DR. HECTOR RUIZ: Can we see that?

JEN-HSUN HUANG: Absolutely.

DR. HECTOR RUIZ: Great.

JEN-HSUN HUANG: This is Curtis. He's going to give us a demo.

DR. HECTOR RUIZ: Good to see you, Curtis.

(NVIDIA "Nymph" demonstration)

JEN-HSUN HUANG: This is all being done in real time. Her name is Dawn and we named her Dawn because she is bringing us into the dawn of cinematic computing.

Dawn is being rendered completely in real time. She is the most complex character ever rendered in real time. There are approximately a quarter of a million polygons on Dawn. In fact, if you just looked at her hands, that is equivalent to the complexity of a Jurassic Park dinosaur made in the movie.

Let me just highlight a couple of the characteristics. About a quarter of a million polygons – it is the most complex skin shader ever done in real time, so we're of course rendering the color of her skin - the subtle bump maps of her skin - but we're also using a very sophisticated lighting technique that gives you the effect of rim lighting, so you could see the lighting coming off her shoulder blades and her, I guess, fine figure.

Now the most important thing is, with all of this technology, what we're really trying to do is bring to real-time graphics, the ability to capture emotion and character and all the subtleties that you see in movies that are rendered in 3-D graphics. So, with this technology, we believe it will bring a much larger audience to real-time 3-D graphics because we can just tell deeper stories.

All of this technology is currently running on an nForce2 and an AMD Athlon microprocessor. With the nForce2, we can also transfer a great deal more textures because the nForce2 supports a dual-channel DDR, as well as, an AGP 8X graphics bus so that we can transfer the rich textures and the rich geometry to our GeForce FX GPU.

DR. HECTOR RUIZ: Wow, Jen-Hsun, this is amazing. You know a lot of people see that and can't believe that actually it is a bunch of bits and ones and zeroes. You might fall in love with that kind of stuff.

JEN-HSUN HUANG: Well, we're hoping so.

DR. HECTOR RUIZ: All right. Well, Jen-Hsun, thanks. We appreciate it. I'd like to ask you to stay here for a little bit because you're also going to take part in the next

thing we show.

JEN-HSUN HUANG: Oh, that's terrific.

DR. HECTOR RUIZ: Thanks, Jen-Hsun.

JEN-HSUN HUANG: Thank you, Curtis. Dawn will be available for dates soon.

(laughter)

DR. HECTOR RUIZ: If I can add to what Jen-Hsun just said, you know, we've had a great relationship working with NVIDIA, in creating a partnership – with HP also.

Together with HP, NVIDIA and AMD, we launched a commercial unit for the desktop – they call it Compaq D315 system. It is being used by the Columbian government, who purchased nearly 200,000 units of this. You will hear a little more of that in a minute because this partnership has resulted in a very powerful solution in the commercial space.

Our collaboration with NVIDIA has been great.

And, as a matter of fact, one company in the northeast called Northeast Utilities was searching for something that they would be able to rely on that had the performance and the price performance balance that they needed.

I'd like to show you this next testimonial, which explains how powerful this "connected business model" is. NVIDIA and AMD together created a platform, which HP then put in a commercial desktop, which resulted in a win at Northeast Utilities.

[Northeast Utilities Video]

DR. HECTOR RUIZ: That's terrific. Jen-Hsun, it's a great partnership. I look forward to more of it. I heard a rumor going around that you guys have some sexy stuff in your booth. Is that right?

JEN-HSUN HUANG: Yeah. In fact, we are showing for the first time, the nForce2 running with a 400-megahertz AMD Athlon processor frontside bus. In fact, the performance improvement is somewhere between five and twenty percent.

DR. HECTOR RUIZ: Fantastic. Thanks a lot. Great.

JEN-HSUN HUANG: Thank you very much.

DR. HECTOR RUIZ: Well, we're close to the end. You know, one fantasy I had a long time ago about being in front of a large audience...I was eyeing that guitar there a little bit. I couldn't help but wanting to grab it. So, if you'll allow me. Wow. Kind of scary stuff, isn't it? Well, maybe I'll take the little one. That's too big.

(Dr. Hector Ruiz picks up guitar.)

This is neat. I'll just pretend. If somebody could take a picture and then I'll show it to my family. You know, I really think I need some help. Is Charlie still back in the audience? Charlie Boswell? Are you still around? Maybe you can help me "get real"

here. Well, let's see what you can do there and I'll try to follow you.

[Charlie Boswell and Henry Juskiewicz join him onstage and begin playing]

CHARLIE BOSWELL: Maybe a little beat here on my AMD Athlon processor-based workstation here.

DR. HECTOR RUIZ: Okay.

CHARLIE BOSWELL: Are you feeling that? All right. Put your hands together. Get out your lighters. Let's add a little saxophone here. You guys are pretty good. All right. Don't stop Henry. Love it! Vocals?

(Background vocals begin - "Rock, Rock, Rockin' on 64")

All right. Put your hands together. You guys are all right. All right. Let's take it down. All right. All right.

ANNOUNCER: Ladies and gentlemen, the CEO of Rock N Roll. . . Slash.

(Slash from Guns & Roses comes onstage and plays a guitar solo)

DR. HECTOR RUIZ: Thank you. Thank you. Thank you, Henry. Thank you, Slash - great to see you all. I hope you enjoyed it. Thank you.

(applause)