

SUN MICROSYSTEMS

**“Taking Back Wall Street”
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Jonathan Schwartz: Good morning everybody. Next time I think we'll get a bigger room.
Thank you all for coming; it's much appreciated.

What I'd like to do is spent about an hour talking to you about some of the changes that are going on inside Sun, why we're driving some of those changes and moreover, bring you a little bit back to the future. And the way I want to start is by reminding everybody here of a couple things. First, you may not know what SUNW stands for, but it stands for Stanford University Network Workstation.

The history of that workstation is an interesting one. And as I say with all due affection, Wall Street is the swamp from which we spawned. Just to give you an idea of what that history is, this is it. This is the first workstation that we ever delivered. This is called the A100. For those of you that don't remember this history, let me give you some details.

It was built with off-the-shelf parts and, irony of ironies, with an Open Source operating

system. History 101, we were born here because a lot of folks on Wall Street took that workstation, took the monitor off it, stacked the little CPUs, one on top one another which gave us a problem of having to learn how to write an operating system that spanned over multiple CPUs, thus a server business began.

Sun equaled system innovation. We brought together components. We actually ended up combining technologies based on volumes in the industry to go deliver constructive innovation to the marketplace. Wall Street really responded. Why? Because if there's one industry on Earth for whom IT matters, it's Wall Street.

The Financial Services community operates in a commodity market and delivers huge, huge returns based on technology as a competitive advantage. Our history is actually with these companies, but all of these companies have different names today than they did ten or 15 years ago because there's been a little bit of consolidation going on.

So this is the spawning grounds for Sun. And make no mistake, this is exactly the place where we believe we need to return to understand where the next generation of IT innovation is going to occur and how folks want to spend money to go achieve the advantage from it.

Just to give you a little bit of more modern history, you all remember these days? The NASDAQ 5000, that was a good time. I think all of us enjoyed it. As I say, while the fish were jumping in the boat, we weren't worrying about where the boat was headed and we were throwing the poles away and who cares about the navigation map. Just sit back, let them jump in the boat.

Growing 60% quarter over quarter was fabulous. And then what happens? Your world changed. People figured out that a sock puppet wasn't going to go reinvent the world. Business ethics and compliance started becoming issues that people worried about. And 9-11 didn't help. All of a sudden you had some new priorities that we needed to respond to. Those priorities weren't "give me the fastest systems possible."

The priorities ended up being more like these priorities. I've got a budget crisis. My budget's been set back in the year 2001 to 1993 levels. What can you do for me? All of a sudden, I've got competition I never even thought I had. I'm under incredible competitive pressure. My margins are declining. What can you do for me?

Sarbanes-Oxley emerges. Mergers and acquisitions occur. I've got interoperability requirements across businesses. I've got to be able to attest to them. I've got to be 404 compliant. I don't know how to do that. Can you help me? And these are all things that had nothing to do with what we were doing in all honesty in the year 2000, 2001. Sun was too busy growing.

So what ended up happening is you gave us a shopping list. This was what was on the shopping list. First, I want you to ensure that Solaris runs on non-Sparc platforms. Please make it available wherever I have bought machines because if I've got machines laying around I want to put an OS on them and I love your OS, love Solaris. But it's got to come unlocked from Sparc.

Second thing, industry standard hardware, x86 systems. I've got a lot of it. I need you to run your infrastructure there. I'd also like you to start innovating there because it's just a fact of life. And price performance on a one-way box is different in that world than on a Sparc box. You have got to understand that and got to figure

out how to innovate.

Third on the list, would you stop being an island? Your rhetoric is of a company that views itself as an island. You've been isolated and our businesses are fundamentally not isolated. They used to be. They're not anymore. We've got to talk to other people. We've got to interoperate in mixed environments. We've got to deal with legacy. Sorry, they exist. We can't walk away from them.

That level of choice not only needed to be a priority in R&D, it needed to be a priority in the culture of the company.

Lastly on the list, you've got to get back to your roots because operating on systems that aren't necessarily going to deliver price performance is going to be a short term phenomenon. You've got to come back and prove that you can continue innovating.

So when you spool forward and say these are the four things you asked for, what did we give you? Our shelves in all honesty were empty. We just didn't have much. So you came a knocking and we didn't have much to deliver. What did you do as a result?

Many of you were very public, and some even in the media, in delivering messages that sounded a lot like this: "You didn't listen."

So what do we start doing? We started listening. What's a great way to get our attention? Direct your purchase orders to someone else. And guess what? We declined year over year for a few years. And then what happens? Well look over there, 2003 to 2004, all of a sudden there was light on the horizon. And it wasn't from the sun setting. It was from the sun rising.

What we've been doing for the past three years is getting back to our roots and not our fashion from back then, not our haircuts from back then, but really returning to lots and lots of people who understand what it takes to run a business, who understand network workloads, who understand how to innovate with both off-the-shelf components as well as design components to make sure that we can deliver real systems innovation to you.

What does that innovation have to look like? What are the real themes that drive this? Again, think back to who Sun was when we first delivered those workstations. It was innovation based on industry volumes, the volumes that were out there. Why? Because that means we can drive our costs down and therefore your costs down.

Secondly, we had to be more open than open. There's a lot of rhetoric in the marketplace right now about open source equals open standards. You all now know that's not true.

So we had to actually deliver open standards in open architectures that gave customers choice. That's what open is all about. Customers define open in my mind.

There's a quote from a long, long time ago -- 20 years ago. They looked at Sun and said "Sun is a company that builds a Ferrari out of spare parts." We build massive performance engines out of things you can just buy out of the catalog. Increasingly we're looking at how we go reinvent our business that way because we do not want to be in the business of designing lots of things that you just don't care about.

Lastly the focus more than anything else in an era right now when lots and lots of people are

talking about decomposing systems and buying parts from this vendor and that vendor, and while we have some customers who I'll tell you about in a minute that are in a very interesting way continuing to go build their own components and build their own parts, the value that we can bring is we can be the systems company.

We can bring together the hardware and the networking and the storage and the software. We can innovate more rapidly because we focus on the real value-adds, not saddling our business with a bunch of commodity parts that won't differentiate ourselves to you and certainly won't differentiate ourselves against our competition.

So to me, Sun is all about being a systems company, about being a company that can leverage all of the parts to fundamentally deliver differential value to customers.

Back to our shopping list. Number one, would you please deliver Solaris on non-Sun platforms? We said good. Last count as of last night, 249 systems are now qualified to run Solaris on x86.

We had a dinner last night with about 20 CIOs from around Wall Street. It was interesting, one of them said 249 systems is great. That's probably too many. We only really want four. I said, you know, it's nice that you only want four. But the four that you want are sadly not the four that my Asian customers want. And so do any of you in this room care about those systems? No. If you're in Asia, you sure care about them.

So we've got to have a lot of systems. Why? Because that's giving you a lot of choice. We're making sure that we can support the OEMs who will support our operating

system so that you can ultimately buy any system you want and run Solaris on it. That's the first part of unhooking the legacy of locking innovation into one box.

Secondly, just because you make it available doesn't necessarily mean your sales force is going to want to deliver it. I'll give you a perfect example of this. I was with a sales rep not too long ago and with a CIO of another big investment bank and the CIO was telling me look, I just bought 4000 Dell servers so I can't use your stuff. I said no, of course you can. We can run Solaris on your Dell systems. We had a very good discussion about choice and competition. Then we left the room and the sales rep took me aside and said what the hell are you doing? I'm not going to get the revenue for that.

So what did we do? We went back and we changed the compensation plan and we said if one of our sales reps sells Solaris running on Dell, we'll comp them as if he sold the Dell box, as if he sold the hardware. Why? Because it makes him neutral to you. You can look to them as having your best interest at heart no matter what your hardware choice is.

This is a fundamental culture shift in Sun. And a fundamental culture shift in our finance organization that's figuring out how to adapt to this. But it represents an opportunity for us to reach more broadly into the marketplace. There are vastly more Solaris licenses in the world than there are Sun systems running them delivered by Sun because they run on every other system out there. We're using that as a competitive advantage and not think of that as a threat to Sun.

Now in addition to this, there was always a question about Solaris performance. In fact when John Fowler (EVP, Network Systems Group) was in the software organization

he held performance reviews with the Solaris team called “Slowlaris Performance Reviews” to make sure the folks in the organization were appropriately motivated to get back and make sure we were delivering real break-through performance.

Why? Because at the end of the day, performance matters to you all because throughput matters to you because business results matter to you. We knew that we had to get back to rewriting the fundamental infrastructure that allowed Solaris to run not just well on a 100 way system but really well on a one-way system and on a two-way system because there were an awful lot of them in the world.

Now I'd like to invite up Miriam Soza who is the Senior Vice President for Systems Development at Thomson to tell us a bit about how she's been using Solaris on Opteron.

Miriam Soza: Thank you.

Jonathan Schwartz: Thanks for joining us today, much appreciated.

Miriam Soza: Thank you.

Jonathan Schwartz: So why don't you tell us a little bit about Thomson Financial?

Miriam Soza: Sure. Thomson Financial is a \$1.5 billion information provider. It's a solution provider to the worldwide financial community. We offer the most comprehensive range of content and technology for our customers in over 70 different countries.

Thomson Financial is part of the Thomson Corporation. The Thomson Corporation is a

leading provider of real-time information which provides a lot of the information to the legal industry, to financial services, to learning as well as the healthcare section.

We actually have 20 million users of the Thomson Financial information.

Jonathan Schwartz: How are we doing for you? How is Solaris running?

Miriam Soza: You're doing great for us. Today we use Solaris x86 on some of our most mission critical applications. Some of our front end exchange processors as well as our market data distribution system are using Solaris x86 today.

We also use Sun 15k for our applications which are the core applications for our real time market data systems today.

Jonathan Schwartz: Great. So running then Solaris on Opteron as well as Solaris on Sparc, you've got a common application base, you've got common systems management. Has that delivered any benefit to you? I assume it has otherwise you wouldn't be doing it.

Miriam Soza: Absolutely. It definitely has. We have been able to use this information and it's really provided a huge benefit to us. Just recently we've also started to conduct a test on Solaris 10, Solaris 10 using the Sun four-way Opteron based system. We tested it on our current live application which front ends our market data distribution system.

Jonathan Schwartz: How'd it do?

Miriam Soza: It did excellent. I mean we are still at the very preliminary stages of our test.

But the test shows that we were saving approximately 35% of the overall performance. We also saw savings of 75% in systems. So we are still at the preliminary stage, but it looks very, very good right now.

Jonathan Schwartz: Fantastic. Thank you very much for joining us -- much appreciated.

A picture's worth 1000 words. So we decided we were going to go off and run a few benchmarks. What you'll actually see over here on the screen is running on a Xeon, Solaris 10 running on a Xeon and nicely beating Red Hat as well as Solaris 10 running on an Opteron.

Now there's no real benchmark that matters as much as your benchmark based on your application because benchmarks in our industry is known as "bench marketing." Everybody figures out the right way to orient the benchmark.

The best thing you can possibly do, and the thing we'd ask you to do is to think about how you can actually run benchmarks on your application. Because we know we can win on performance. Remember the company was founded on performance.

We are absolutely targeting Red Hat specifically and moreover customers that are experiencing whether it's system sprawl or performance problems so that we can come back in and actually deliver a much more significant benefit based on the R&D that we're doing.

That little demo gives you some idea of where we're headed. But more broadly the thing I want to make sure everybody understands is where we're headed with Solaris 10 and its value to you. You may not remember back to 1993, but there was a software product that everyone said was going to put Sun out of business

and it was called the Chicago project. Remember the Chicago project?

Well there were two kinds of companies, the kind of companies that said oh my God, I've got to throw away my operating system and go ahead with the Chicago project and then companies like Sun that said why don't we go focus on quality and scale and security and innovation?

The Chicago project turned into Windows NT. The companies that adopted it and threw away their own operating systems perished in a sea of undifferentiated retailers. You can't name them anymore because they're gone.

We built about a \$130 billion install base in the interim, \$130 billion. Why? It was based on innovation, innovation on security, innovation on scalability specifically. It turns out the network had some big scaling issues.

So a few years back when we got some wise advice from our friends on Wall Street and the analyst community, it came down to "you need to abandon Solaris and adopt Linux" because Linux will boil all the ocean just like the Chicago project was going to boil all the ocean.

A lot of us are sitting around saying, you know, that sounds really familiar. That sounds like a movie we've seen and I think we produced it the first time around.

So why don't we just go back and redouble our efforts around quality, scale, performance and innovation? That's what we've been doing in the past three years -- and I just ask you to contrast our strategy with either IBM or HP -- neither IBM nor HP have brought their operating system to x86 hardware. In fact, curiously, IBM didn't even bring their operating system to their new low end Power system which is a curious way to be a systems provider.

What we've been doing is focusing on these core things, extreme performance. By extreme performance I mean 30% to 50% to 200% improvement in performance as well as consolidation. With consolidation there's now secure containers, the equivalent of logical partitioning on a mainframe is now on a one-way Opteron box or a 100-way Solaris/Sparc box.

You can partition them up and get dramatic increases in the utilization. We've added unparalleled security. Does the world care about security right now? I think so, more so every day. If it's not the threats of the viruses, it's the threat of Sarbanes-Oxley. If you can't attest to the validity and audibility of your systems, you'll go to jail. That is an amazing motivational support forced on senior executives.

The most interesting to me is if you think about Wall Street as the spawning ground for Sun, UNIX and linux also spawn from a common swamp. We're both UNIX. So what we can do is take Red Hat applications today and run them unmodified on Solaris. The same thing with SuSe. We can do that in a partition so that you can have a four-way system that's running Red Hat linux apps on Solaris in one partition secure and contained and then a diversity of other applications on other partitions on a single box. I'll give you a demo of that in a moment.

If you think about other actions then that we'd like you to think through, we believe we have a significant advantage in where we're headed with Solaris 10. We'd like you to benchmark your applications on Solaris 10 and your applications based on Solaris 9 using D-trace. Don't just benchmark performance. Benchmark price and performance. Because there's this funny thing that's happened with linux recently. Linux isn't so free anymore. It's about 1000 bucks a CPU which gives us an enormous price umbrella.

We were with a great customer recently that said I've written everything to Fedora, but then I wanted to get an ISV to support what I've written. They can't support Fedora so we needed to pay Red Hat \$1000 a CPU. I thought well that would be dumb. Why don't we just go to Sun and pay you \$700 a CPU. So we moved their entire linux farm onto Solaris and we can still run their linux application.

There's a lot of opportunity for us to gather out there because the evolution of linux, although on the one hand it happened at the expense of Sun, it's now a farming ground, more market opportunity for us to go after.

Next on the list. All this talk about x86 is nice, but what are you going to do with it? How are you actually going to build out your portfolio?

From where I sit, we now have the most complete portfolio of x86 systems in the marketplace -- 64 bit. Why? Because we actually think address space matters -- one-way, two-way, four-way. We've been whispering about eight-way, going to get a whole diversity of new products coming down the pipeline we haven't even talked to you about. This is not just a we're going to call up a OEM manufacturer in Singapore and get him to ship us 2000 one-way x86 systems. That wouldn't be smart. There'd be no value for us to add.

What we're going to do is focus on differentiated value based on innovation. Unlike some of our peers in the industry, let's just take HP for a moment, while they've been trying to migrate their install base off of HP-UX and off of PA-Risc, which strikes me as a pretty risky thing to go do, you have to be a computer company without a microprocessor or an operating system. We have actually been taking our systems evolution not just up the x86 line, but also up the Sparc line.

In fact what we've done is basically doubled the throughput performance of all of our systems over the past six months. Everything we ship will be basically running UltraSparc 4 at twice the speed it was running at a year ago. That delivers us enormous improvements in overall systems price performance to you and gives you the ability to consolidate even more of your systems into a smaller number of boxes which lowers your management cost. As I was talking to a CIO last night, he told me the two things that he worries about most right now are space and heat. And this is a CIO. Who would have think four years ago those would have been the two discriminating issues in the IT industry.

To us though, just doing systems, computer systems, actually misses the evolution. If you think about what goes into that box and now what goes into an operating system, the innovation isn't just about the application base. It's about storage. It's about networking. It's about the software that actually goes into defining an operating system.

Sun has always been a company that innovated at the boundaries, at the edges.

What we've been doing is not simply focusing on x86 hardware and Sparc systems, scalable systems. We've also been focused on networking, storage networking and application networking.

I'm going to give you a demo of a couple new products coming down the pike in a moment that will tell you about how we think this opens even more market opportunity, to solve more of the problems whether they are space, heat or performance that we think our \$2 billion in R&D can actually go drive.

All of these systems run Solaris. Therefore we're able to deliver innovation and value to customers in ways that the other guys can't because our system teams hang out together. They talk about software and hardware, let's build containers into the software and then we can leverage off of one another. That's what a systems company can do.

But they can't just run Solaris, because again, customers want a choice. What else did they want to run? They wanted to run Windows. So we qualified our x86 systems to run Windows. And go try it. It runs great. Couldn't just run Windows. Also had to run Red Hat. Couldn't run just Red Hat because a bunch of you are frustrated with Red Hat and you'll go look at SuSe. Couldn't just run SuSe because a bunch of you still figure you're going to run Debian.

And although there's a diminishing number, there are still some people who are producing their own operating system on Wall Street.

Now my account team asked me to remove the logo of the company that still runs their own operating system. So out of deference to them and our desire to close Q1 on a good note, I will leave their logo off. But there are a surprising number of companies that still believe they want to create and maintain and own and operate their own operating system. Now why is that a problem?

It's a problem because it's not your core competency, not what you should be investing in. Last I checked, even though we invest money in the marketplace with the \$7-1/2 billion in capital Sun has, we haven't opened our own trading floor. We are unlikely to do so; nothing to worry about. We're really focused on doing what we do well which is bringing together systems value and disrupting our competition while we try to disrupt your cost structure to take it down dramatically. All that said, we can still run your operating system if you

actually decided to build your own.

Here's just a brief example of what some of the pricing looks like across the industry. This demo is a four-way x86 server running Opteron versus a comparable box from IBM and a comparable box from Dell. We know we can beat them on price if for only one reason. Not only do we think we can out innovate in the design of the system when we're competing against Dell, because again, Dell will look to an OEM to try to build the best box, but we also have an operating system that the other guys lack.

So as we get theatric about talking about the operating system, subscribe to the OS and the hardware's free, we're only doing that for a very basic reason, because in fact, most consumers buy subscriptions. How many have subscriptions to newspapers or to magazines or to cable settop boxes or your handset -- all of you.

In general, people actually appreciate buying that way. But one of the other things we can do in offering a subscription operating system and a free hardware device under it is we can make it very difficult for folks who are in the hardware only business, which by the way is almost all of our competition right now, or folks who are only in the software only business. Because as soon as you subscribe to the OS, the hardware is free. Or better yet, buy the hardware and the software's free, it makes it difficult for the competition who's decided to focus on one or the other to respond.

So we know there's opportunity there. One of the biggest issues we have to worry about is there's definitely some cultural shifts underway at Sun, understanding the role and value of software in leading architectural discussions.

One of the biggest single cultural shifts that we've got to drive at Sun isn't in our own employee base. It's in our customer base. Because when we walk in and say we've got a complete line up of x86 systems, one-way to four-way and an NDA road map we can talk about, and they say well gee, we haven't qualified you as an x86 supplier because I didn't even know you ship x86 systems. It's an awareness issue and a culture issue.

So one of the other requests I have for you is you ought to qualify us as an x86 provider.

Why? It's to your benefit when you go out and make a big purchase. Because if you're going to go out and buy a two-way x86 system, we'd be happy to help you drive the cost down.

By the way, just as a leading indicator of where things may go, do you know what Verizon's operating margin is on a handset? Negative 20 points. Why? They get a subscription. And that subscription over time delivers value back to Verizon.

So the gross margin on some of the systems that we build if they're out for developers or seed units, may in fact end up going negative. For the folks who don't have the resources or the assets to court that subscription value, my view is they're going to have a hard time responding.

Now a bunch of folks in the financial community keep saying well jeez, we don't understand how you all make money in the x86 server space. I would agree in some sense with the basis of the question which is if we just focused on selling a one-way x86 box, we ought to look at x86 systems like we look at DVD players.

Do any of you know what the margin is on a DVD player? Let me tell you. One dollar. Now who's going to make money on DVD players? Probably no one. In fact this year, about six Chinese manufacturers have gone out of business. Now why is

that remarkable? Because for the most part you could look at Asia as the lowest cost supply of labor and lowest cost supply of parts. If no one there can make money at it, this is pretty much going to be a no-margin business.

Who did well? These guys pictured here. They delivered content where the cost of replicating that content was trivial, the cost of distributing that content was very low and they could rely on volume. Because how many of you have laptops that have DVD players in them because everybody seems to have snuck that by the CIO - "I need it for training videos." Or better yet, there's now DVD players in automobiles. I rented a minivan that's going to take my family around and my kids wanted to watch a movie in the back seat. Thomas the Tank Engine goes right into the dashboard.

DVD players are everywhere which means there's volume, there's a volume market. The appetite and opportunity for content is just going to increase. When we look at volume, that's how we look at it. Sometimes there will be a \$1 DVD player for us. This is our x86 server unit growth. This is volume.

What are the margins on the box? At some sense, uninteresting compared to the margin on the system. Because the system is what we're building. I don't think anyone will be able to survive in the one-way or two-way x86 base if they don't own an operating system. Why? Because go back to that picture of a DVD player. It ain't that far away. Like I said, the margin on a Verizon handset is negative 20 points. The margin on a one-way x86 system standalone may be negative 20 points. The margin on the content that runs on top of it -- and the good news is we got a really good DVD -- 3 million units of Solaris. That's the base on which we can now grow. And that number's growing every day -- more downloads, more replication, more licenses.

When we look at the margin opportunity of the x86 space, we're not looking at the box.

Anybody who is, is going to have a tough time competing. By the way, probably a tough time competing against Dell for all intents and purposes. I think in standalone low margin commodity products, they're going to be the company that probably benefits the most.

On the system side we believe there's going to be a lot of opportunity if and only if we can deliver performance and advantage and significant competitive benefits to the customers that are going to deploy it. To that end, I'd like to invite up Cris Conde who's the CEO of SunGard.

Great. Thank you very much for coming – appreciate it.

So Cris, why don't you tell us a little bit about SunGard.

Cris Conde: Yes, SunGard is a software company. We run about 3 million trades a day that go through our systems and about \$9 trillion in assets that are managed in our systems. We also have a very large business continuity business.

Jonathan Schwartz: Great. We've been partnering together for a while now. Why don't you tell us about UMA.

Cris Conde: We've been partnering for quite a number of years. UMA has ever-more interesting products. It stands for universal market access. And it's both a management system as well as a direct market access.

After we launched it we put it on top of Opterons running Solaris. We achieved two times performance improvement which is very significant because for a majority of our customers, most of the money they make is either at the opening or at the

closing of the exchange. So performance and reliability at particular times is a key to success. So we're very, very happy with the way it's worked out.

Jonathan Schwartz: Awesome. Why don't you tell us a little bit about our collaboration on business continuity and disaster recovery?

Cris Conde: Oh yes. We have all kinds of things going on. At this point we have a very large partnership between SunGard and Sun when it comes to business continuity. And at this point Sun actually resells our service. So any of Sun's customers can sign on to the SunGard business continuity service and do it in a very seamless manner.

We have around 10,000 customers and we've simulated over 100,000 disasters. In the 25 years we've been in this business we've never failed a recovery.

Jonathan Schwartz: When there's trillions in assets flowing through your system, you probably do a lot of disaster simulation.

Cris Conde: Yes, absolutely, absolutely.

Jonathan Schwartz: Well again, thank you very much -- appreciate it.

Cris Conde: Thank you very much.

Jonathan Schwartz: Driving down that shopping list again, number three is choice and interoperability. I'd like to believe we were one of the first to understand the value of the community because that is really the -- in some sense, the concepts from which Sun originally sprang, from an open source operating system, from an open source license model.

With Java we changed the license model because we were worried about repeating the mistakes of the UNIX past, fracturing and tipping, tipping where markets moved to one vendor exclusively.

What we've been trying to do over the past three years is take that concept of community building and take it to the totality of our business. Everything we do looking at our partnerships with ruthless, ruthless competitors as ways to bring value to our customers. You want some proof, here's proof.

How many of you -- raise your hand -- would have predicted that that photograph could have ever been taken? McNealy and Ballmer together. Talk about matter and anti-matter sitting in the same space. We created a ten year collaboration framework -- it wasn't just about settling litigation -- to look at how can we go sit down with customers. What's the first thing we did?

We said hey Microsoft, let's get together with some joint customers. Let's go sit in a room and have them tell us what they're frustrated about. We flew out Bill and Greg Papadopolous, sat in a room with about 15, 20 customers, and they lectured us on the problems of running systems in heterogeneous environments. It was enormously instructive.

You might know that a lot of you all are focused on compliance activities right now. In fact one of you was telling us over the past couple weeks, that of the 63 IT projects your bank is currently funding -- and this is a very, very large global bank -- of the 63 funded, 60 were compliance related which is probably not that anomalous.

Now what's the most important thing about compliance right now? It's all about security,

auditability, traceability, knowing who has access to what and what can they do as a result?

What's the focal point for our interaction with Microsoft? Phase one is all about identity and Web services interoperability. You'll be able to take the Java Enterprise System from Sun run on whatever operating system you may choose -- there's that word again -- and you can interoperate with Active Directory and the Microsoft stack.

Why does that matter? Because again, if you're focused on auditability and identity and security, it's the focal point. Identity is the world's most fundamental Web service. If you don't get that one right, nothing else matters.

Another little interesting statistic for you. Why is the music download business on mobile handsets, a multi-billion dollar industry? No joke, you know, \$3 to \$4 billion versus the music download business on PCs being what, about 100 million? It's for one very, very simple reason. The mobile phone is authenticated. Therefore the content owners know they can get paid. The PC on the other hand is not authenticated and therefore you can do things that you don't tell your wives and husbands and kids and boss about.

Identity is the fundamental concept behind commerce. So that's why we're starting there.

Now moving forward, we've got to continue to deliver not only choice in interpretability in the Microsoft world, we've also got to do that in the linux world. I talked to you a little bit about how we were looking at linux right now. It's all market opportunity as we go to consolidate more of those systems and servers back on to singular higher scale systems.

We can run linux apps unmodified in a partition in a trusted container on Solaris while you're simultaneously running Oracle in another, RogueWave in another and a Java application server in yet another. This gives you the power to consolidate back a lot of the sprawl that you all have seen in the x86 server space. Again, it's part of being a systems innovator.

I want to be clear that we're laser focused on your market. I think I've personally been back to Wall Street ten times this year. I know our team is on the ground. There's someone who reports to me directly. His name is Stuart Wells. His title is Senior Vice President, Wall Street Technology. All he does is sit with the top 20 financial institutions and say what's keeping you up at night whether it's space, heat or the accountability of their linux vendor.

One of the big issues we found out when we went and spent time not with the executives but with the developers, if you take him out to dinner and you give him enough beer and they start opening up, and what they'll tell you is they're really frustrated by linux support.

What that really means is we had a senior executive in one of these financial institutions tell us my problem with paying 1000 bucks a CPU for support is I bought Red Hat. I paid the money. I had a problem. I called them up. My trading system was broken. And they said great. We'll get right on that. Within a couple hours, one of my developers came back to me and showed a posting to a newsgroup from a Red Hat employee asking for help. I said why did I just pay 1000 bucks for that? What I really want is someone who can be on site and there to help me, there to make sure that everything runs – completely accountable. Not accountable for the branding and packaging of the product, but accountable for its performance and its quality.

For the first time today we're announcing global UNIX and linux support as a part of our preventative services offering, we will take one of our talented UNIX engineers. And by the way, UNIX and linux - separated at birth. They will be available to you 7 by 24 to solve all the problems that may arise, and not by posting to newsgroups, but by actually looking at code, understanding the problems, talking to engineers and making sure we're responsive.

How do we help you solve the problems that are keeping you up at night?

The number of ISVs we have who are beginning to jump on to the Solaris bandwagon is growing every day. As each day goes by there's more and more folks who say they understand the value of performance and the accountability and innovation and they want to be a part of it.

Whether it is Oracle or BEA or Reuters or SunGard or Thomson, there's lots and lots of folks who are beginning to see the value in innovation and the value in performance.

But the most interesting trend to me isn't the complete list. It's the folks over the past 90 days. Because these are the folks over the past 90 days that have said this actually matters to us. This matters to us in terms of how we can grow our business and how we want to partner with you to grow your business. And by the way, I guarantee you there will be competitors in this list just like AMD is a competitor and Microsoft is a competitor. Because partnering with those folks makes your life easier.

Our belief is if we partner with the competition, we can help grow the overall market. It's not about taking apart one another when we're in the midst of a cluster sale and a customer. It's about how do we go identify more total market opportunity in

the marketplace.

The hallmark of a company that's confident in its product is you go off and you offer to upgrade the rest of the install base of the competition. So making sure we left no opportunity untouched, we are now offering an upgrade, first time today, 50% off Solaris for customers that are frustrated with Red Hat and would like to move.

Of course we'd not like to limit that simply to Red Hat. It's actually a little more interesting just in terms of breadth of the scale of the market that's actually out there. We are also pretty happy with our Opteron systems. We think that they are dramatically more price performant than the Xeon systems that are out there. We figure we may as well offer you an upgrade to repurchase all of your existing Xeon systems and give you a big discount off of the next generation Opteron.

In fact, I was with a customer recently that told me they had just drafted a policy memo that forbade the purchase of any more 32 bit x86 systems. Why? Because they were more expensive and slower than the next generation 54 bit x86 systems.

If you think about that for Sun, that's a \$20 to \$25 billion marketplace in which we have never really participated. This is all upside market opportunity for us. We think that pretty much nails for us, issues of choice and interoperability. Now we ought to go look at I think why many of you are here and certainly why those CIOs showed up last night, to understand innovation and price performance and what can we do to really change the game.

The first thing we can do is make sure that we go back to the \$130 billion install base of Sun systems that are out there and say we can now double your throughput

performance. And with the 490s and 890s, that's exactly what we can do.

For the competition that's moving away from their systems or having systems that show up without operating systems, we think this is a remarkable expression of confidence in the road map. We know there's a very, very long and interesting history in the past and a very, very interesting and lucrative future around scalable systems.

I remember being asked by somebody recently, well why are you still building 104-way Sparc system? I said because nobody on the planet has ever built 104-way system. And yes, there are still a huge spectrum of application that require that kind of scale – more so every day.

In the end, all horizontal scale scales vertically. What starts off as a one-way today becomes a two-way tomorrow. How do I know? That's a one-way. And we now have 104-way versions of it.

But the next generation of Sparc can't just be about taking the old model and trying to put a retread on it. It's got to be about changing the game. To us, this is changing the game. This is Niagara silicon. This is the next generation eight core Sparc system, four threads per core which means this is a 32-way system.

Now there's a lightning bug, a firefly, in the top right-hand corner of the picture up there. And I actually learned this when I was talking to my kid about what is the light that comes out of that little bug's bottom. It turns out -- and I didn't know this -- but the light that comes out of a lightning bug is 100% light and 0% heat.

That incandescent bulb on the ceiling I can promise you, is about 90% heat and 10% light. So

a lightning bug is perfectly efficient and it solves the problem for the lightning bug family that the lightning bug family actually thought was useful to solve.

These new Niagara chips? Fifty-six watts, 32-way system. To that point last night when I was talking to the CIO from a big investment bank who said his principle issues were heat dissipation and space, a 32-way system will now be a in 2U frame. That will hit both of those issues head on.

I was at Carnegie Mellon 20-plus years ago. All my buddies were in the CS department. A bunch of them were working on parallel computing. One of the biggest problems in parallel computing is there were no parallel computing problems. And so they all had the traveling milkman and the traveling hairdresser and the traveling salesman, but they were all basically the same problem.

If you scroll forward to today and you look at all of your businesses, they're all parallel computing problems. In fact, I was with Business Week yesterday and they didn't understand why their business was a parallel computing problem. And I said well what's the hit volume on a big story? And they said a half a million people. And it's like good. Half a million people are doing exactly the same thing trying to get to you to pull down that content. All of our businesses are increasingly parallelized.

When you can run them 32 times more efficiently, that will make an impact on price performance and space and heat dissipation. Do I think there will be applications that can require 32-way systems? Well the good news is we have an operating system that eats threads for lunch. The only reason why we've never tested the upper limits of scalability on Sparc is because we've never built anything more than 104-way system.

Well it doesn't take many of these running in parallel to go test that limit. We will because we think there are a lot more than just 32 challenging threads in every computing problem.

The next wave of systems innovation is going to target efficiency. I think it's going to target the things that we've been targeting. Because just as we did back then, we've been looking at workloads and looking at requirements in the marketplace and not going after this kind of dual core notion. That's clever. But we have that today. But going after eight cores and well beyond.

We're targeting systems innovation in exactly the same place. Again, the good news is we have an operating system that can absorb all of that innovation and drive it as well.

But technology innovation isn't just what we're about. As you all know, we're also just about business model innovation. We started something interesting about a year ago, a little over nine months ago. We said we're not going to charge people 32 CPUs worth of Java Enterprise System. Let's figure out a new pricing model.

Let's price by employee because pricing by the core won't make sense in the long run. The vendors that are trying to keep up with pricing by the core right now are going to see a huge amount of compression in the marketplace. Because what we'll announce is we're not going to price by the core. We're going to increasingly price by the employee. That's how you all think about running your businesses. Surely that's how we should try to best listen to and understand your problem.

When we set this out, we said look, what's the comparison between a license model in which we could give three years with 2000 employees and ten million customers? If

you've listened to any of the folks who've come up and talked to us, they have vastly more customers than they have employees. We can deliver the entire middleware stack -- directory, identity, portal, application services -- and with an infinite right to use meaning you can do with it whatever you please. You can expose it externally. You can use it internally. The three year cost versus the competition is actually incalculable because we couldn't figure out how much IBM would charge for 10 million customers. We just knew it would be a lot.

That's the basic stack up. My belief is in part, the compression you see in the middleware industry right now is partially attributable to this. Customers don't want to pay by the CPU and don't want to get hung up. That frees up more dollars for people to spend on software. It means that customers get accustomed to getting better deals. They're going to want better deals from everybody.

Now business model innovation is good, but the roots of the company are in technology innovation. There's this great slogan that we have which is the network is the computer. The network. When we deployed TCP/IP, when we started understanding how networks were constructed, we looked at innovating in Silicon to accelerate network performance. That's what we've in some sense come back to now. I want to give you a quick demo of what that might look like.

This is a product we're not announcing today, and I don't think any of you have signed NDAs, but we're talking about this product now. It's a next generation application switch, a switch designed to understand workloads of the network and make sure that we can extend the server into the network to do more of the job that was otherwise being done by lots and lots and lots of little boxes.

The first thing I'm going to do is give you an example of a network and show you what Nauticus can do to actually reduce cost and increase performance and also show you how that maps to Solaris.

So this is a simple network. I've got a V40z here running and it's running two sets of applications on virtual subnets. One of them is a finance set of applications where CPU and RAM are okay, and the other is a set of HR applications running on a different subnet secured.

On another system I've got a Dell box which is basically my developer box, another V40z running a bunch of the same virtual subnet. And in the bottom you can see that there's actually an empty container. So each of these subnets is apportioned its own space, its own IP address and its own security attributes and its own policies. Each of these boxes is running either one or more containers.

If I look inside the switch, I can ask it to show me all the HR applications. So when I click it, I can see there are a bunch of HR applications. When I go click on developer, it'll show me the developer applications. On finance, it'll show me the finance application.

Well one of the problems in the HR world obviously is I've got CPU utilization problems in a big way. The reason for that is because HR data tends to be highly, highly confidential. So these aren't messages that are going to be passed in clear text. These are going to be messages that are going to be encrypted using SSL.

One of the first things I want to do is recognize that all messages, Intranet or Extranet, in the long run will be encrypted using SSL. If that's a commonplace thing, then why not just put that in hardware? Because as soon as I do so and move the

load of encrypting those messages and decrypting those messages from the system into the switch, as soon as I do that, what happens to CPU utilization? It drops. What does that mean? I've got more CPUs. I've got more performance, more room. And what did I just take out of the system? A lot of load.

Well what's the next thing I want to take out of the system? The next thing I want to take out of the system is given that I've got some spare capacity over here, I don't want to have three boxes when I could have – sorry, four boxes when I could have three. There's a Dell box down here that's actually just running linux. Well why don't I just go put that into a Solaris partition, into a trusted container and then I don't need that Dell box anymore?

So what am I going to do? I'm going to click on it and I'm going to move the load from this Intel Xeon box onto a SunFire V40z, put it into its own container, secured and isolated.

I've now freed up this box and I can get rid of it. One less box to manage. One less set of complexity to deal with.

So to us, systems innovation is about recognizing when dedicated hardware ought to be built with general purpose servers and understanding when general purpose loads need to be put back into hardware. As we build that out, you should expect to see companies that are in the exclusive business of building load balancers, which seems like a funny extension of a server farm to have another 200 load balancers in front of it, come under the same competitive pressure that those of us who've been watching innovation in the network take place over the past ten years.

With that, if I can go back to the presentation, I want to talk to you about the next evolution coming up. When linux on Intel happened we were on the blade side of the ax. Next time we want to be on the handle. One of the next generation innovations occurring in the marketplace would be the adoption of serial ATA, serial ATA drives for archiving solutions.

Well why is serial ATA such an interesting innovation? Because it's so dirt cheap and because it can be used for a far broader spectrum of storage applications that are being used today. What's one of the artifacts of Sarbanes-Oxley? You all have to store everything. You've also got to worry about network identity and identity-enabling your storage solution.

With the next generation 5920 that Sun just announced, we have taken a radical bite out of price performance. With the next wave of that evolution using serial ATA for archival solutions, we've got an opportunity to take a look at your existing storage and take down the expense by the millions of dollars because the odds are not good you want to use mainframe class storage for just general purpose archival solution. We think we can deliver on the leading edge rather than on the trailing edge of that next wave of innovation. Stay tuned there as well.

Now I want to close on an interesting subject. And just as a quick poll, how many of you have read my blog, raise your hands? Okay, you should all read my blog. In a recent posting I wax poetic for a while on the definition of a commodity. There's been a lot of discussion in the marketplace about computing is a commodity, which is a clever thing except I wonder how some companies maintain 50 points of margin on commodities.

As far as I'm concerned, a four-way Opteron server is anything but a commodity mainly because I can't fit it through a pipe or a port. To me, commodities are services

that you can deliver through a pipe or a port whether it's water, power, electricity.

If you were to look at reinventing the computing industry around services, what you'd want to be doing is not looking at the box as the commodity because that's a physical delivery good. Maybe a pork belly is a commodity, but servers tend to be a little bit more differentiated. You'd want to think about how you would express computing as a service.

Now you've all seen what Salesforce.com has done. They've expressed salesforce automation as a service. And it's a fabulous business model. So what's happening is a lot of businesses are looking at the way they do salesforce automation and saying I have no competitive advantage in doing my own salesforce automation. Let me just give the task to Salesforce.com and I'll use what they have. That "use what they have" part is incredibly important because it's what allowed Salesforce to get a massive economy in scale. Everyone's running the same system.

If you were to look at what a grid service would look like – and by the way, every one of you is building a grid somewhere. The most amazing thing is they're almost all identical. I keep looking at them thinking, why is everyone inventing the same grid? Why don't we instead go look at the innovations that are occurring in the network today and how people begin to re-express Sun Microsystems not just with better technology, because people will forever be purchasing technology for the network, but look at the new opportunities for Sun in delivering technology and infrastructure as a service offering.

What would that service offering look like? Like this. eBay. How many of you customize eBay for your business? None. How many of you will customize

Salesforce.com for your business? None. Because they won't let you. It ruins their economy of scale.

How many of you customized the Verizon wireless service that they deliver to you versus just use what they gave you? None. You use what they gave you. And there is value in that uniformity when the expense of the differentiation is exceeded by the value of the service being delivered. Increasingly I see that happening in the computing world. Lots and lots of people are differentiating in ways that in some sense don't matter any more.

But in order for us to get to this model, we've got to fundamentally rethink, so how would you express computing as a service? I want to, if you'll allow me, just give you a little tangent here. I was talking to yet another CIO in a large financial institution. He was telling me about his big grid and how much problem he's having managing, maintaining and operating all this big pharma stuff.

I said okay, just as a random idea, throw a noodle on the wall and see if it sticks, what if we put 20,000 CPUs up in Siberia because it's cold and we wouldn't have to worry about heating? No joke. What if we put up 20,000 CPUs running Solaris in trusted containers so you'd have the scalability and trust in that operating system running on a CPU and we sold you the right to use a CPU for an hour?

And he looked at me and said that'd be interesting. How much would you charge me? I said I don't know, why don't we just put it up on eBay and we'll figure out what it's worth. He thought for a minute and he said, you know, that's kind of an interesting thought but actually it won't work for my transactional apps because I've got to worry about the speed of light because of the latency between complex business systems.

I said well, then throw away those apps. You go run those on your own. I want to run the ones that are insensitive to latency like a Monte Carlo simulation or a portfolio analysis or fraud detection or rendering a movie. Because there's a huge sea of applications that are insensitive to latency. So he said that's a clever idea. Let me go think about it.

I left him and I went down to LA and I met with a bunch of movie studios. And you'll never guess what they said. Man, I would love to use your 3000 CPUs to render the next super hero movie rather than using mine. I met with a jet engine company that said man, I'd much rather have you do the simulations of wind turbulence in an engine than run it on mine. I met with an oil and gas company that said I'd love to run seismic simulations on your grid rather than on mine. I don't want to buy it and build it and own it.

And then that CIO called me back and said you know, I checked with my folks. It's probably not a big portion of our workload. It's probably only about 10%. But I would be thrilled to be able to buy that on an hourly basis from you. So let's get going.

We started talking about what would a, no joke, computing card look like, a computing card that once you inserted it into a card reader gave you access to compute cycles on an hourly basis and you used them up just like you use up wireless minutes or your calling card.

I was talking to a professor friend of mine who's a protonomic modeler of all things -- there's actually a field now called computational biology, that's a head scratchier -- and he said we model proteins. I would love to not have to go schedule time in the super computing center to go get my proteins modeled.

I'd rather just buy yours available on demand.

So we thought that's actually a pretty interesting idea. Why don't we take our N1 strategy which is all about virtualizing infrastructure. Because the real definition of virtualization that our customers wanted was virtualization meant that the employees didn't work for them. That's what real virtualization was all about. You can either automate it with technology or with people. And as long as you take my expense down and out of my data centers I'm happy.

We began looking at well how would we price it? The logical way to price it was buck per CPU hour.

So what we announced today, a first for the planet, a first for the industry is what we think is the evolution of the next wave of computing, the expression of compute cycles as a service.

Not hosting, which is all about taking your complexity and putting in our data center and hoping we can come out with some efficiencies. But instead, what Google and eBay and Salesforce.com and Verizon Wireless do very well, here's our infrastructure. If you can map your workload to it, you're more than welcome to use it. And by the way, you can pay us by the drink.

Of all the CIOs we spent time with last night, every single one of them said that's a pretty good idea because we will map our workloads to take advantage of your infrastructure so we can get it out of our data centers. It's not for every workload out there. That's not the point. There are some workloads for which this is perfectly appropriate.

Why can we do this? It should be a familiar refrain. Because we own the operating system. I

can guarantee you partitioning and I can guarantee you trust and security. And can the other guys? Think about their reputation with security or trust. We think we have a material competitive advantage. It's up to us to go execute now to go make sure we can deliver that advantage to the marketplace and also back to our stockholders.

And another little head twist, I was talking to someone last night at dinner. He was telling us he runs an exchange. Exchanges tend to be pretty busy during the day, tend to be pretty quiet at night. That's wasted capital. The question is if we can deliver this service to the marketplace broadly, is there a way for us in the long run to enable others who have fair capacity to sell that capacity when it's not being used? I think so, but that'll wait for a year.

So with that, we think there's a fundamental reinvention occurring at Sun. It is about coming back to understand the core issues that customers had. Multi-platform Solaris, we have that now. Delivering on industry standard hardware, we have that now. Delivering choice and fundamental interoperability across every spectrum, we have that now, about redefining the next generation of computing and getting back to our toots to drive innovation through price performance, we think we've got a great angle on that as well.

And so for all intents and purposes, our shelves are stocked, stocked with hardware, stocked with software and we've got a ton to talk to our customer base about.

To that end, I'd like to close by giving a few awards to some of our customers that are doing some pretty interesting things and have been working with us recently to ensure we understood their needs and their views on how the market would evolve.

First up is Visa Inovant. And if I could invite up Joel Mitler, Senior Vice President. Thank you.

This award is for stellar achievement and outstanding Solaris technology innovation. Why don't you tell us a little bit about what you did?

Joel Mitler: Well over the last four years or so we've been using Solaris to deliver a variety of payment solutions for our members. What's critical about that is the performance and scalability that we were able to achieve. When you think about the volumes that we deal with in all due respect to our Wall Street friends, in one hour we handle as many transactions as Wall Street handles in a day around the world.

Jonathan Schwartz: That's scale.

Joel Mitler: That's massive scaling there.

Jonathan Schwartz: Thank you very much. Thanks again, much appreciated.

So the second is in recognition of stellar achievement and outstanding innovation. We've been talking a lot about the value of a technology called DTrace. Many of you have probably heard about it. Some customers have been getting upwards of 200% performance improvements quite literally over lunch because we have tools that really allow us to look deep inside what's going on and make sure we can find the bottleneck.

One of the customers that's actually done that quite well is the Philadelphia Stock Exchange. So I'd like to invite Bill Morgan up.

Why don't you tell us what happened with DTrace and what's going on with the Philadelphia Stock Exchange?

Bill Morgan: Oh, thank you Jonathan. Well we've been piloting Solaris 10 and DTrace functionality. And we've had exceptional performance improvements. We've seen about a 36% improvement on our servers that we have installed at the exchange. Just to give you a sense of what that might mean in terms of the actual hardware base, we're seeing the performance of a ten CPU Sun Fire 6800 system out of a two CPU Sun Fire 4800 system. So that's significant. And really this couldn't come at a better time for us.

I think as Wall Street certainly knows, the options business is transitioning into an electronic trading system. And we in Philadelphia are building a hybrid electronic and floor based system. We expect next year our capacity to be least five times what it is today. And while Sun has always given us the ability to scale our hardware very efficiently, Solaris 10, this product is just an add on which is very significant because that's going to allow that to continue as our capacity demands grow. So we thank you for that.

Jonathan Schwartz: Great. Thank you very much -- much appreciated.

We like to believe we're a company that understands partnering. And one of our longest standing partners is Reuters. If I could invite up Peter Lankford who's the Vice President of Reuters to talk a little bit about not only the history of that partnership but hopefully some of the future around that partnership.

Why don't you tell us about what we're doing together and where you see some of the opportunities going forward?

Peter Lankford: I think most people are probably familiar with Reuters. We're a \$5 billion provider of market information and news to most of the financial institutions around the world. My group in particular provides the software for the client side that runs market data for most institutions around the world.

Sun and Reuters, I think our partnership goes back about as far as that box? Back in the late 80s when together we helped to lead a real sort of digital revolution on Wall Street and enabled clients to consume vast amounts of market data in logical form and consume it into their business applications. And it's really driven a lot of the automation we see on Wall Street today.

Jonathan Schwartz: So what's been your experience so far with Solaris 10?

Peter Lankford: We're quite excited about Solaris 10 and a number of our clients are as well particularly because right now what we see going on is a real intense focus on increasing automation particularly in the trading space. Trading's a popular business again and the clients are really looking to get an edge there. And I mean it's an area where milliseconds matter. There's an intense focus on latency and on performance especially as the volumes market data updates accelerates.

And so there's features like the dynamic tracing and the performance enhancements in Solaris I think are really appealing to clients as they look to take every cycle they can out of trading decision.

Jonathan Schwartz: Great. Thank you very much Peter -- much appreciated.

And finally I want to actually invite up Steve Rubinow who's the Chief Technology Officer for Archipelago and certainly one of our more colorful customers.

But that's certainly not what the award is for. The award is for outstanding innovation and high volume trade transaction on Solaris. Maybe you can tell us a little bit about that.

Steve Rubinow: As most of you in this audience know, Archipelago, which is just a seven year old company, is the world's largest all electronic stock exchange. And in seven years we've had a long way to go to fight against some pretty entrenched competitors, most of whom I can name on less than the fingers of one hand.

Our company, which we process tens of millions of orders, hundreds of millions of shares a day, our company is based on a very simple model -- openness and simplicity. Whether you send us one order or you send us millions of orders, the results are pretty much predictable. There's no mystery. There's no wondering what's going to happen, what kind of execution you're going to get. It's pretty much what you see is what you get and the market likes that and has rewarded us accordingly.

We've been a public company now for just I think five or six weeks. And we expect to continue to go of course and get bigger and better. And I was thinking as I was listening to Jonathan talking... And this wasn't orchestrated, but many of the things that Jonathan has been describing for Sun as far as openness and simplicity and manageability of course are earmarks of what we need to be able to do to be better. We need to be better performers. We need to have better manageability along with security and reliability and all those things that you would expect in exchange to have.

And it just struck me that, because we haven't orchestrated the comments, it's just indicative

of the similar philosophies that the two companies have that have enabled us to grow at the rate we're going with few negative surprises, meaning day in and day out, just as our customers expand, they expect excellence of us every day, we expect the same of our vendors. And Sun has rarely if every disappointed us. And we expect those things in the future as well.

Jonathan Schwartz: Great. Thank you very much Steve -- much appreciated.

In closing here, I just want to give you another personal story. I'm remodeling a house. And one of the things that I'm doing, because I actually think about this stuff, is I'm putting solar panels on the house. When I was talking to Steve last night before we actually got together, we were talking about this concept of a grid and what would happen if there were a real standardized uniform grid service available at a rational price of a buck an hour.

What I thought about was what my contractor told me about putting the solar panel on my house which is you can get the meters to spin backward which is if it's a sunny day by law, actually in California, if you pump electricity back into the grid, they pay you.

Isn't it interesting that in the computing industry, there is a vast, vast quantify of unused computing power every day. Not just on your laptops, but in servers.

So when Steve and I were talking lat night, I was actually thinking about if the exchanges are dormant at night, then surely at some point there would be an opportunity if the trust and security and containment were there for businesses to begin to feed some of that capacity back into the network.

So we like to believe and we hear it frequently from our customers that we give them things

to think about. We'd like to believe that the innovation we've been articulating today will give you some things to think about. We'd certainly like to sit down with you and talk to you about some of those innovations.

But most of all, to the marketplace in general, I want you to understand that across the entirety of Sun Microsystems, we're looking at getting back to our roots, coming back to the customers who are the most demanding in the world, who run the most demanding businesses and for whom IT has always been and will forever be a competitive advantage to understand how we can be the world's best partner to help you go drive your business forward.

With that I want to once again thank you very much.

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