

SUN MICROSYSTEMS

The Progress & Freedom Foundation

Keynote: Jonathan Schwartz

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Keynote - Mr. Jonathan Schwartz

MR. JONATHAN SCHWARTZ: Thank you for that wonderful introduction and one of the good things about this speech is that I get to give it with a glass of Chardonnay-

[laughter]

-in my hand. And I guess I'd like to talk to you all this evening about a topic I think that we've all been talking about and in a sense it's a bit of a Groundhog Day discussion topic and that is: Digital Rights Management. And before I actually get into the meat of the discussion - which I think is relatively straightforward, at least with respect to how technology trends are really moving forward now - I thought I'd give you a little bit of personal background on me and why the issue, I think, actually matters, in fact, to both progress and freedom as well as education.

So, just by way of personal background, my father was a university professor for most of his life. My brother is an educator. My wife is an educator. My best friend is an educator. Education, I think we'd all agree, is critical, is pretty critical to the, to the future of the planet. And, moreover, education is really predicated upon the availability and access to information; you can't learn unless you've got access to information. Now, I want to start by making a relatively profound statement which is: I think the Internet is a good thing. I also think-

[applause]

That's okay, one down.

[laughter]

And also, I think the Internet actually contributes to education; more people learn as a result of being connected to one another. But I also think that, along with information becoming more accessible, there are some fundamental shifts that are occurring, which are, you know, relatively profound. Some social in nature, some technical in nature, and some very basic questions will make that pretty apparent to you. How many of you have e-mail, don't bother raising your hand, and you right there, reading it on your Blackberry-

[laughter]

Which proves the point that you, like me, enjoy inte- and I hope it actually is your Blackberry. If you give it to me I'll check my mail, which will make my point: we have all begun to access our

information where we see fit. We are no longer interested in having our information be bolted onto a singular device. That would make no sense. E-mail that works on one machine isn't actually e-mail.

So, if we spool forward a little bit and try to think about what happens in the very near future, I want you to fantasize with me for a moment about what happens if all the devices in your world have infinite bandwidth. And the reality is, that we see is, in a world where, for the most part, bandwidth is cheap and ubiquitous and completely plentiful, devices become functionally equivalent.

Why is that? Would you really want to watch a movie on your wristwatch, compared to watch it in your living room, on a 48-inch flat panel TV? Well, if you're on a bus, you're not going to take your 48-inch flat panel TV with you, you're going to take your wristwatch or your Blackberry. And that's where we want to watch movies; that device is capable of displaying a movie.

Where do you want to search? I don't know about you. I search wherever I go. I don't pack search engines with me, I just go to the nearest kiosk, or the nearest cell phone, and I bring up my favorite search engines, and I go off and I look for information.

So I think, as we go forward, devices will be differentiated by their form factor - how big they are, can you stick them in your pocket, do they have input mechanisms? It's pretty tough to type on a wristwatch. It's tough to play chess on one as well, but it's oftentimes, you know, as convenient to watch a movie on one there as it is when you're, you know, sitting with a bowl of popcorn.

And the net of all this is, we're clearly coming into a world where devices will no longer be purpose built. They will no longer be built for their functionality. They'll be built for their form. They'll be differentiated on size, input mechanisms, and, for the most part, not based on whether they can do one thing or another.

Now, what that implies is that physical media is, obviously, losing its value. If you can pump a four gigabyte movie across the network, you can pump a four gigabyte data warehouse across the network. Getting the, you know, information around isn't going to require a disk. It's going to require authentication. The services that you want to get access to are those to which you will be authenticated. And, where you are authenticated, that's where you're going to get your mail.

But what needs to be authenticated, in our viewpoint, is the individual. Not the content, specifically, it's the individual and their right to the information that they're seeking.

Now, my view is there's no one business model in this Internet that's emerging. There are some which are fantastically successful, based on the somewhat traditional idea, that you pay for the media before you get it. And my favorite is, and it's also one of my favorite questions for diverse audiences: How many of you have ever bought a ring tone in here? Okay, some of you are lying when you raise your hand, but for the most part it's a multi-billion dollar industry and you are not the target demographic.

[laughter]

And yet we make great theater of the fact that we've downloaded music onto our PCs but come on, it's a tiny business by comparison to ring tones. And so, whether it is free search, which is obviously pretty valuable if you're going to raise four billion dollars with all the decimal digits to the right of three and pie. And, but it's clearly diverse.

And I think the fact that there is diversity in the media, diversity in the devices, plentiful bandwidth and computing capacity that can distribute the information around the world, implies we have to have a solution to a problem that contemplates diversity. It cannot contemplate a singular solution, a single device, a single format, a single protocol.

Now, there's a very interesting question which is revolving around the executive suites in the world today, and it's inspired by three letters which should strike terror into most executives. Those letters are S-O-X, and SOX is actually an interesting DRM problem. SOX attempts to get control around a simple question: Who has access to what?

And so, from our vantage point, the infrastructure necessary to provide a control environment for a corporation may not be all that distinct for the infrastructure necessary to help folks manage how they are compensated for their access. And, rather than create a redundant standard around identity or authentication, many of which exist in the world - one clearly has more support than the others, it's called the Liberty Alliance, which is the standard built by a bunch of folks in the technology industry as well as in commercial business - and for us to look at answering questions around DRM, we have to look at other solutions that are being developed in response in part to legislation.

SOX will play a role in that, because, in part, our assertion would be, SOX is answering a digital rights question: Who has access to what?

Now, maybe at the outset I can start by assuring you, before I

start talking about open source and free software, I believe in IT. And for those of you that don't know much about Sun Microsystems, we're an eleven billion dollar company that doesn't have a FAV, doesn't have manufacturing plants. For the most part, we have a bunch of folks who come up with good ideas and we send those ideas, intellectual property in the form of designs, chip designs or software designs, to other people to manufacture.

Now, we have a different way of viewing how we want to distribute our intellectual property. I would like every one of you to go to the Internet this evening and download a copy of Solaris. I am not holding my breath for you to do so, but the evolution of that operating system requires popularity. Volume is a good thing for an operating system but at our very core, our business is built upon the idea that we are paid for our intellectual property.

How we're paid, the business model we use to get paid, is different, it varies by business. You're probably not going to download a ten-wave server off of the Internet, you know, much as you might download a free office suite or Firefox off of the Internet, but at the end of the day our contribution to that has been we created the design. And so, intellectual property is not something I'm suggesting should be willy-nilly distributed around the world, nobody should be paid for it. It should be up to the company who owns that intellectual property to determine how they would like to be paid for it.

But again, whether you look at Google, or Wikipedia, or Scythe, or Sun, we all have a different way of looking at how we'd like to be compensated for our intellectual property. There is no one business model.

So, it's also clear to us that choice is becoming more important and there's a fundamental shift underway that is making that evident. And the choice is, you know, we always talk about: Who are the actors in DRM? You have the service operators: the cable companies, the telecommunications companies that are delivering a service to people. You have the content owners: the people who actually own the content, maybe the movie studios. And then you have the device manufacturers and the technology industry who, for the most part, are there to try to secure a phone or a server or drive a standard.

But there's one critical audience that's been left out of that discussion. And that was the audience, the only one, that had, actually, the content necessary to inform the world about what happened in the bombings in London recently. They were the folks that were in the tube, who had their cell phones, who were taking movies, who were supplying the information to the rest of the

world.

So where are they represented in this triad of voices in determining where DRM goes next? For the most part, they haven't been represented, but it seems inevitable to me when I ask you, "Have you bought a ring tone?" You will likely turn to me and say, "I haven't bought a ring tone but my God my kids have been buying them like they're going out of style."

And that portion of the demographic, those that are now users on the Internet, are as likely to be producers of content as they are consumers of content. And if you witnessed how the tsunami was covered, a year or so ago, How was it covered? It was covered by individuals with cell phones and blogs before CNN could even get there. So there's a radical shift underway which suggests that the world is moving away from an information age; in which there's an educated center, which the uninformed edges tap into; and instead we're moving into a participation age, in which there are educated edges, which are leveraging the center to promote and propagate information. That is a turnabout in how the Internet is being constructed.

Now, the Internet can be the one place that traditional media, and traditional media companies, can be, or can't be. And the one place they can't be is absolutely everywhere. And so, as the Internet continues to wind itself away, around the world, whether it's through satellite coverage or Wi-Fi networks, or other forms of propagation, it's making and turning individuals into the producers of content. So, a solution needs to be made available that isn't just appropriate for the three actors we talked about, but one has to be made appropriate for the individuals who, in the next five to ten years, may own more of the content that's valuable on the Internet than simply the companies that I just mentioned, because they are inevitably becoming the owners of most of the interesting content that's being propagated on the Internet today.

And whether it's blogs, or wikies, or craigslist, or the information coming up through other forms and formats, that's clearly creating a very, very valuable asset on the Internet. The asset, by the way, may not be monetized by your agreeing to pay for it before it's delivered to you. It may be monetized in a different way, but again, that too is something that needs to be comprehended. So the diversity has to be understood. The diversity has to be valued and any solution that's built has to comprehend that diversity.

Now, I want to give you an example of why this convergence of these different forces is actually causing an interesting discussion to occur and that the convergence is a very basic one. It's the one

that all of us are taking advantage of when you're looking at your Blackberry. There's a network. There's really one network. It kind of connects everybody to everything and then there's information on that network which you look at and get access to wherever you may be.

So the CTO of a big media company came and sat down with me about three or four months ago and said, "I have a favor to ask. We're going to be getting in front of Congress and asking them to enact legislation to cover over the analog hole."

I'm assuming most of you know what the analog hole is. It's taking a digital camera and taking a picture of a picture or a movie of a movie. And this individual wanted us to support the legislation that would, in effect, require a device to check for a watermark. If the watermark was absent, you couldn't, you couldn't watch the movie. You couldn't distribute the movie. And rather than provide a response in the room to that individual, who simply wanted to monetize their intellectual property, I said-

I have a favor to ask you. I'd like you to go back to your CIO because, by the way, he's going to be operating the same network in your data center that you're going to be leveraging to get a movie to my living room, because it's just one converged network now. And on that thesis, I want you to ask your CIO if he would support legislation to watermark software - because again, the difference between a four gigabyte movie and a four gigabyte data warehouse is there is no difference, it's just a different media format - if he would support the inclusion of technology that would check for a watermark on the software assets in your business systems.

And naively, this individual said, "Well sure, I'll go ask." So, two days later, I got an e-mail from him that said his CIO wanted to send a sharp message to me and the message was, "Prove to me that I've stolen something first." And he said, "There, I've run your idea up the flag pole. And so it's clearly irrelevant."

And I said, "No-no-no-no-no. What's good for my living room is good for your data center. You're going to have to pick. You either want the freedom to run your business as you see fit or you want to try and constrain my freedom and the freedom of those like me that want to check their e-mail or get access to a search engine."

There are no two questions here. There's only one question. The question is: How do you want to secure your assets, monetize them, and have the basic control you think you need to go do your business? And I, as an individual who, by the way, now that I take

home movies on my digital camera and – yes, they're really crappy but it's not because of the camera, it's because of the producer of the movie – I can send them around the world at some point. I may want to control how they are, in fact, delivered.

I write a blog. I'm very prolific in how I write. That's my content. I don't want someone usurping that in a way that I don't approve of. I may deliver it free into the world but again, I want to be compensated for the intellectual property that I build.

So the point here is, there really is only one problem. And all of the discussion around DRM, that tries to separate into "No-no-no-no-no. There's consumers and there's businesses." Well it's one network and we have to therefore have one solution that can stand to multiple uses, multiple media types as well as multiple business models.

So I think that really gives us a few questions that we need to ask as a tech industry. And certainly, we and others in the industry, HP most notably, about a year ago got together – actually it's more than that, it seems like a year ago, two or three years ago – to set a standard for neutral network identity. Why? Because on the one hand, users don't log, like logging in seventeen times. And on the other hand, things like, you know, identity management systems in large organizations are sources of risk as well as sources of control. They're good ways for businesses to get a handle on what's going on. So we clearly have an ability to bring together consortiums in the industry to go progress the dialogue, as well as progress the technology.

Now the technology industry tends to be a bit of a canary in the coal mine for this stuff, and from my vantage point, and I know this is shared by others in the industry, we're at a tipping point, where we can now begin to look at how we solve the problems of Digital Rights Management.

There's a safety that's been introduced into the marketplace as a result of open source. You don't have to worry about whether or not somebody's going to trip you up with a technical dependency. There are commons that are emerging which allow for some degree of confidence around whether or not you're going to get sued because you stepped on somebody's patent. There are sufficient, you know, background and history to consortiums to prove, in fact, that whether it's the Java community, or the Liberty Alliance community, or the web services community, that we can agree on standards that will in fact be ubiquitous and freely available. And moreover, there's now a clear endorsement of the idea that royalty-free standards are the ones you can trust. Those that come with a tax, or a vig, or reasonable and nondiscriminatory fees, are ambiguous,

and they leave open the future of the network because they leave open the price tag of actually pursuing freedom.

So our view is, if a DRM solution is going to work, it's got to be device independent, not just one phone but all phones; format independent, not just one person's media stream, one person's licensed, regulated, and highly-controlled media stream, but any media stream; business-model independent because it's not just whether or not you've agreed to pay me before I give it to you, you know, Google doesn't actually subscribe to that model and they've clearly built a pretty big business around it; but one that really contemplates the diversity of technologies, the diversity of business use cases, and the diversity of business models.

So, as chance would have it, we've developed exactly that.

[laughter]

And we've actually had in our labs for a while something called the DREAM Project, which is Digital Rights Management with the E-A added in for "everywhere available." And the engineers involved obviously weren't as creative as the marketing people wanted them to be.

[laughter]

And the whole concept here is, let's build on what exists. Let's build on the existing open source licenses that people can trust. Let's build on the existing technology consortiums that know how to work together. Let's build on the standards, like the Liberty Alliance has delivered, that allow governments to connect with one another, business communities to connect with one another. And rather than reinventing something for the commercial media world, let's simply take all the work that's being done for SOX, for identity management, for authentication services, and bring it forward into a converged network that will now be serving homes.

So it seems clear to me that the intranets of the world are dissolving away. There will realistically be a much, much more, you know, lively and vibrant Internet and so any solution that's built has to span not simply what happens behind the firewall, but obviously what happens on the outside of it as well.

So what we're launching today is something called the Open Media Commons and what the Open Media Commons will be, will in fact be a commons, into which we will be contributing, for free, our DREAM DRM technologies, royalty-free, open source, under an open source, an OSI-approved open source license – so one you can actually trust. It's the license used, in fact, for the Firefox browser that's out in the marketplace.

And, with that, we'd like to extend an invitation to all of the constituencies involved in looking at issues associated with DRM, not simply the telecommunications industry and the cable operators, not simply the content companies or the technology companies, but even the individuals who are, as I pointed out, a greater source of new content on the network than they've ever been before. Clearly there needs to be a solution for the community and somewhat by the community. We'd like to play a productive role in seeing that happen.

We'd also like to bypass the patents that are currently looming as a threat to the future of the Internet. A DRM solution that's perfect in the eye of one company but just happens to come along with it a dollar per usage is unlikely to be a successful DRM solution for the whole planet. We want to assure that everyone has access to an open DRM solution, free from the penalties of either a usurious fee on a patent or fear of litigation based upon, you know, a small number of companies' interest.

So again, I'd like to just extend an invitation, a formal invitation, for the constituencies we just articulated. We've been in discussions with a whole diversity of you, some of you in this room, about trying to progress this forward. We have a history of working to create communities. One of the largest and most vibrant communities in the marketplace is called the Java community. It's largely invisible to many of you, except if you have a phone every once in a while you see a logo pop up. That's a community that has created a standard platform that allows content to roam across the internet. The same thing on the network side. If you use eBay, you're running Java, again, we've proven that this community model can actually work.

So with that, I guess I'd like to pass it back to Ray to open up the forum for questions and I'll get back to my-

[applause]

RAY: Well, we have an invitation. Almost a challenge maybe. Any questions for Jonathan? And I'm going to call on Jim DeLong [phonetic]-

[laughter]

-who's a senior fellow and Director of the Center for the Study of Digital Property, because Jim's job is to think about these things deeply, so.

MR. JIM DELONG: Yeah, I haven't had much time to think [unintelligible].

[laughter]

MR. JONATHAN SCHWARTZ: Did you like my wine?

[laughter]

MR. JIM DELONG: My first reaction is that the people who will really like this idea are the content industries, because-

MR. JONATHAN SCHWARTZ: Well, you know, it's surprising because some in the content industry are actually owners of the patents, very quietly,-

[laughter]

-that they are trying to monetize to insure that, you know, if you use their patents, then they'll love it because they'll make a buck whether or not it was their movie.

[laughter]

So, be careful. There are many wolves in sheep's clothing out there.

[laughter]

MR. JIM DELONG: Well, I think-

MR. JONATHAN SCHWARTZ: But I'm sorry, you had a question.

[laughter]

MR. JIM DELONG: No, I'm [unintelligible] about it. Well let me ask a question as to, in the end, Sun will need some revenues free to support this work, which is expensive to do-

MR. JONATHAN SCHWARTZ: And how do you-

MR. JIM DELONG: Where do the Sun revenues come from?

MR. JONATHAN SCHWARTZ: So, I'll give you a little interesting statistic. We drove Java because we thought the Internet needed a standard. The marketplace asked how we made money but in the year 2005 we had seven and a half billion dollars in cash. So, don't you worry yourself about that.

[laughter] [applause]

I mean, look. In a more serious vein, neither Hewlett-Packard nor Sun invented http. We did real well as a result of the adoption of a standard that allowed the world to connect because we could supply all the infrastructure that surrounded it but we insured we would not be locked out of a market opportunity dominated by one company.

So standards, in the end, create way more market opportunity. I mean, look, and I'll give you actually another wonderful example of this. If you have a cell phone, in the world, and you can roam, one could argue, "Well, geez. A roaming cell phone is less valuable than one where there's one network for the whole planet." Except GS cell phones are the ones that everybody wants to get access to because you can roam the world with them.

So I think there's a notion that proprietary technologies give you a short-term benefit. I believe they do. In the long run, the standards that connect people together are the ones that really drive value. It may not be in the standard though.

MR. JIM DELONG: There are amazing analogies between physical property and the type of thing you're talking about here, and as Ray knows - because it's almost a joke between us now - one of my favorite analogies to the Internet is the nineteenth century railroad. And, but that one holds very well quite right here because, you know, at one time the land in this part of the country was worth absolutely zero, and this land without a means of transportation was worth nothing. At the same time a railroad without productive land was also worth nothing. You put the two together, in what was actually a very creative mix, commons and private property, and you have incredible wealth.

MR. JONATHAN SCHWARTZ: And I am, like you, somewhat a student of social utilities and there are, actually, a number of fantastic examples here. If you wanted to get goods from New York to Washington D.C. before the Civil War, do you know how you did it? You got on, you know, one rail line at, for as long as its rail gauge would work, and then you got off that onto another rail line which had different rail gauge, different cars, different loading capabilities. The net result of that was it was incredibly expensive to move things from point A to point B.

So, one of the interesting and maybe controversial thoughts in the Open Media Commons is: maybe the government has a productive role to play, as they did in rural electrification, as they did in the standardization of railway gauges, as they have done in the telecommunications industry. There's certainly a role to be played to ensure that a standard connects. I think I worry, as many do, that the government sees their role as doing something more than

setting standards. And I'll leave it at that but our guy from Washington has a coronary.

[laughter]

MS. SILVA SINGLESON: Silva Singleson [phonetic], also from PFF. What I-

MR. JONATHAN SCHWARTZ: So the folks from PFF are the only ones that are encouraged to ask the questions.

[laughter]

MS. SILVA SINGLESON: I have to apologize for that but, what the heck. I don't want to - after this, no more PFF people - so if any of you others want to ask a question. No, but, what I, what I hear part of what you're saying is a message of converging, devices doing what other devices do and so on, inter-offer ability and so on. I, on the one hand, I find that tremendously compelling but on the other hand if I look out into the marketplace, a lot of the most successful examples of people who have actually built content businesses around the net, so far, have involved much more restrictive uses of DRM.

I'm thinking of things like computer games, frankly pornography where in order to see it and get it, you've got to log in with a credit card.

MR. JONATHAN SCHWARTZ: No you don't.

[laughter]

I don't know why I said that but I don't think that's true.

[laughter]

MS. SILVA SINGLESON: I'll take your word for it.

[laughter]

MR. JONATHAN SCHWARTZ: I'm sure someone could give you a refresher course on the state of the Internet.

[laughter]

Well, the most successful games are free to join. The most successful search engines are obviously free to join.

MS. SILVA SINGLESON: Well, I don't know. I mean, there've been some pretty successful game systems that are not only tied in terms of their access but in terms, they're tied to a particular piece of hardware. And then you've got the iPod and iTunes being tremendously successful in the media space. So, I'm wondering,

will there continue to be a role for these to play in niches, or are these going to go away and be replaced by something else?

MR. JONATHAN SCHWARTZ: So, it's a great question but all, for many of you in this industry it's your industry so, I'm speaking only as a vendor to the telecommunications industry. The most popular cell phones on the marketplace are the free ones. The most popular checking accounts on the marketplace are the free ones. The most popular operating systems right now are becoming the free ones. The most popular search engines are the free ones.

So, it's not to suggest that the ones you pay for go away. I wouldn't, you know, presume to say that. I just don't think they serve the majority of the marketplace. And so when we talk about DRM, if all we're doing is serving a minority of a declining business, then, by all means, let's go do that but let's understand that we're niching ourselves.

I'm as worried about the DRM of my blog, and how I choose not to be compensated for its distribution, as I am of a media company that says they want to protect me from a kid in Thailand with a movie camera taking a picture of a movie, which is a legitimate fear.

I just think we can't have one solution. There is no, in this instance, you know, one business model hammer for all business opportunity nails.

[PAUSE]

RAY: If you could introduce yourself.

MR. TOM JOVANETTI: Sure, Tom Jovanetti [phonetic] from the Institute for Policy Innovation. Isn't it very economically naïve to say what you just said: checking accounts are free, Google's free, dah-dah-dah-dah-dah. The fact that you don't pay for it doesn't mean it's free. The fact that Google, the fact that I don't pay to do a Google search doesn't mean it's free. The fact that I don't pay a fee for my checking account doesn't mean it's free.

It strikes me that you're ignoring circular flows of capital and you're failing to take into account the very fact that there are alternate business models but ultimately they all result in a revenue stream to somebody.

MR. JONATHAN SCHWARTZ: Exactly.

MR. TOM JOVANETTI: Aren't you, aren't you ultimately omitting the very important factor of inherent economic incentives that drive the rollout of these things?

MR. JONATHAN SCHWARTZ: So when I talk about "free," and actually let

me, let me bring this back to the personal. Sun Microsystems has spent multiple billions, and that was a B, billions of dollars building something called the Solaris operating system, which we then gave away for free. Now it was free to a developer but it wasn't free to me, it wasn't free to our stockholders. When we had to explain to our board why we were giving away a multi-billion dollar asset for free, it was because there was an ancillary benefit, there was an auxiliary business model that was built from it.

So when I say free, all I'm saying is from the consumer's perspective, the price tag of the good is free. And that's to describe a business model that clearly, whether it's Google or Scythe or maybe even businesses that aren't quite so controversial, have been able to manage. EBay's free. You know, I'm sure Sotheby's didn't like that. It changed the economics of how auctions were being done. It didn't mean that it was free, because eBay built a very, very, you know, large infrastructure, and they're a very good customer of ours, they didn't spend nearly what we think they should-

[laughter]

And so I, yeah, I agree. It is, it is economically naïve to say anything is free. I mean, someone before me once said there is no such thing as a free lunch.

MR. ALEC FRENCH: Hi, Alec French with NBC Universal. I was a little confused at your response to the person who came to you asking a question about analog hole or-

MR. JONATHAN SCHWARTZ: I'm sorry, about?

MR. ALEC FRENCH: The person who'd come to you and asked Sun to support analog hole legislation-

MR. JONATHAN SCHWARTZ: Right. Right, right, right.

MR. ALEC FRENCH: How do you send software over an analog output?

MR. JONATHAN SCHWARTZ: Well, clearly the devices are digital. It's the device itself that will be used to check it, once it's in digital form. So I don't believe you can send, I mean, you can send software through an analog output. It's, you know, sending a four gigabyte data warehouse probably wouldn't be very efficient.

The point is, you're validating digital content. And if you're, if you want one form of content to be authenticated, I think, to me, that's missing the boat. You don't authenticate the content, you authenticate the user. You authenticate the individual. The individual is the one that has the rights and the individual is the

one that is being governed, either in a commercial setting or in an enterprise setting.

So I, my only point was, the market is converging. You cannot have multiple standards because as soon as we start having to authenticate, actually let me give you a perfect example of this. When I sign off on our FTP filing, I'm being asked to sign right now with my pen and ink, which is a somewhat antiquated form of authentication. And yet, SOX now requires that I pay very careful attention when I sign that and I'm providing a signature to say, I am authenticating that this is, in fact, the truth.

So, the content that's being propagated around the Internet, I mean what this individual wanted to know was: Was it in fact the true copy? Was it the one that we intended you to get? That problem in the enterprise is the same as it is in the consumer environment. My only assertion is, we cannot look at them separately. If we do, we're going to end up with redundance and potentially risk. Hi Decklin.

MR. DECKLIN MCCULLOUGH: Hi, Decklin McCullough [phonetic] from news.com, part of CNET. Now, two questions. First, have you had any other companies sign on to this and say, "It's a great idea. We're with you in this?"

MR. JONATHAN SCHWARTZ: We've been having these discussions for a couple years now and very confident - as we did with the Liberty Alliance, when we started off with no signatures on a piece of paper - that we'll gather those together. Partially, I think, there's a lot of - Look. We in our position can afford to be controversial in part because, we've done this before. We've got a great degree of confidence in the utility of consortium. The Liberty Alliance proves that the model works. The Java community proves that the model works.

But oftentimes, those of us that are canaries in the coal mine often end up being on the vanguard, taking a risk. And certainly I think there's some who don't want to alienate the very media companies that have patents in, you know, whatever the pooled consortium may be. They want to see how it goes. So we've certainly had those discussions with operators as well as with content owners because it's, you know, a great majority of the world's content is not owned by a company that has a patent lock that would require a buck per video stream. Those folks need a solution. We want to be there to provide it.

MR. DECKLIN MCCULLOUGH: My second question: you, the Digital Millennium Copyright Act, Section 1201, makes it a civil offense and some cases a criminal offense to circumvent broadly DRM technology.

There's a bill in Congress, at least one, that would say, well you can circumvent as long as you're doing it for a fair use purpose. What does Sun think of that legislation?

MR. JONATHAN SCHWARTZ: I think we believe that there needs to be fair use, there needs to be fair compensation. I don't think there, again, is one hammer for all nails. I think, you know, the notion that, I mean, I want you to take our copyright product and propagate it into the world. I want you to take Solaris and deliver it everywhere around the world. OpenSolaris the same. Please, you know, reprint from my blog as frequently as you'd enjoy.

So, I think all I'm, you know, the Digital Millennium Copyright Act, and similar legislation that tries to contemplate the world in one business model, will miss the mark, because there's no one way. I mean, for the most part, I think the folks involved in that have looked at: I have a movie, you have money.

[laughter]

Let's swap.

[laughter]

I don't think that business model is going to be the most popular on the Internet and therefore, I don't think the Digital Millennium Copyright Act is going to hit the mark it needs to.

RAY: Phil?

MR. PHIL CORROWIN: Yeah, Mr. Schwartz? Phil Corrowin [phonetic] with Butera [phonetic] & Andrews in Washington. I assume when you said that an open source, you're talking about a standard architectural language for conveying the DRM instructions but that, I guess my questions are, is that standardization, does it, does it imply a particular set of usage roles? Or-

MR. JONATHAN SCHWARTZ: No.

MR. PHIL CORROWIN: are they completely up to the content owner.

MR. JONATHAN SCHWARTZ: No.

MR. PHIL CORROWIN: And, I guess my next question as a consumer, I'm wondering-

MR. JONATHAN SCHWARTZ: We couldn't contemplate that, by the way. I don't know what all, no one, I mean, if any of you had thought about Google before Google happened, shame on you.

MR. PHIL CORROWIN: Let me ask you-

MR. JONATHAN SCHWARTZ: You didn't do it, they did it, and they made a lot more money than you did.

MR. PHIL CORROWIN: Here's my real question. Do you think there's any kind of optimum kind of, you know, sweet spot for DRM with media, where it's not too heavy but not too light, and what do you make of curious phenomena like currently the Dave Matthews Band is, on their website, is instructing their fans how to get around the DRM on their latest CDs so they can move the content to their iPods.

MR. JONATHAN SCHWARTZ: You know, the Grateful Dead had a really interesting DRM strategy as well, which was, bring your microphone.

[laughter]

And they obviously did pretty well at that, and that was not a one-way model, it wasn't a traditional model. So, I think, the, you know, do I have an opinion on what the Dave Matthews Band is doing? I don't know, it's probably going to alienate his, you know, record company. I'm not smart enough to know much about what he's up to.

What I do know is that we are not done with innovation and any, either legislation or technology, that presupposes we're done is naive. The business models are changing right in front of our eyes. What's happening with search right now, all the metasearch companies are coming out, and the blog search companies are coming out, and they're threatening to push down the traditional search companies so you don't look at them anymore.

Good news: there's competition, there's innovation. It's absolutely everywhere.

You know, my favorite example of the result of competition - take out your cell phone. What does your cell phone do? Mine does: it takes pictures, it takes movies, roams the planet, allows me to make phone calls, I can play good games, download them over the Internet. Great stuff. How many of those can your PC do? Less. And yet, the cell phone has been in existence for, how much less time than the PC industry? There's been hellacious competition in that marketplace and the net result of which is, how big is the music download business on PCs today? And I'm really impressed with iTunes too. It's just dinky compared to ring tone download, which is multi-billion and growing much, much faster.

So, I think you can't assume any one device, any one business model, or even any one content type. And those that do, and legislation or technologies that try to presume that, will miss the mark and will stifle innovation rather than fuel progress.

Questions?

RAY: One more question.

MR. LAY COLLING: Lay Colling [phonetic] with Verizon. Just a question about, you were talking about, broadband being ubiquitous and basically unlimited in terms of how much capacity we have. Are you, is your view that it's, almost like the nuclear industry and 20 years ago, that it's going to be free? Are you thinking that it's going to be easy to deploy these networks? It seems to me that we've got a real challenge in the area yet to do to get to that point.

MR. JONATHAN SCHWARTZ: So, people in my position, the suppliers to Verizon, like to say, "It's really easy. Look at what Verizon's doing." Now I know the reality-

[laughter]

No. It's not going to be easy. I mean, we spend two plus billion dollars a year driving innovation to make it look easy to a consumer to buy a ring tone. You spend a gargantuan amount of money, not nearly enough on Sun-

[laughter]

-to go build out, you know, FIOUT [phonetic] and HEBDO networks. I know they're incredibly expensive. I just think if you look at the trends, they're becoming relatively obvious.

I put, I remodeled my house. I put fiber in my walls. Why? It's not because my telco can, today, drop a fiber, you know, at the edge of the curve. They can't. But at some point, they're gonna, and I want to be ready, because, you know, you're already doing that for my parents, who live in Bethesda Maryland. I want to be able to connect them so they can talk to their grandkids, which they otherwise across a five-and-a-half-hour flight can't.

So, I just, I think it's inevitable. I, do I think it's going to be easy? No. Do I think it's going to be cheap? Absolutely not. I just think it's inevitable and so with that in mind, how can we encourage people to invest, to go seek return, rather than try to stifle something that, again, will ultimately get there one way or another? It's just I'd love it to get here sooner rather than later.

So, with that, thank you all very much.

[applause]

[END RECORDING]