David (Dadi) Perlmutter; Exec. VP, Mobility Group

David (Dadi) Perlmutter:

Ten years ago when we started what then was called the Banias program that really started eventually to become the Centrino program, we said that our vision is to make on-the-go computing, notebook computing to be mainstream. That was 10 years ago. Today we have a new vision for the next decade, which is one billion mobile IA devices shipped in one year in [unintelligible].

Why am I confident that we'll be able to do that? This is an extremely aggressive goal. Because 10 years ago, we were right; we said, "By the end of this decade, notebooks are going to be mainstream." And it is mainstream. It is mainstream now.

I'll start with a personal anecdote first. Our family had kind of sad events in the past year, but last week was really a happy one. Our daughter's boyfriend made a wedding proposal to our elder daughter, a great wonderful event. Why am I telling you that? Tens of billions of people do that every year for the past maybe 5,000 or 10,000 years. It's about the technology the poor guy was using to make this proposal. [Laughter] By the way, my wife is here, so everything is recorded.

He was using the video camera built into his notebook. He made a very nice, very amusing video. He video edited, added music, all kinds of wonderful things. That operation I bet was difficult for him. If I were trying to do that more than 30 years ago, I probably should have called Mr. Meyer from MGM in to build up a big production. That's

probably why I never got to make a wedding proposal to my wife; she made it to me, because I was not having these wonderful notebooks.

But I'm an engineer. And [that type of] data is just interesting, but we all want real data. The real data is that notebooks are about to surpass desktops in shipping. Is it going to get next quarter or early next year? It doesn't matter. But remember our first goal was to make it by 2010. Year by year, the [ramp-up] of notebooks [goes] faster and faster, getting sooner. So, it's imminent.

Another big indicator is the amount of designs. Back in 2002 when we were working on the first Centrino designs, we had about 30-plus different designs going. We were extremely happy that was presented in front of Intel management. Today we're having close to 250 different designs happening for our new computing. But every good thing requires some perspective, and this is how it all started.

Many of us, especially the older guys and ladies, remember this bulky, heavy, small screen, slow, small disk, battery life about an hour, an hour plus, that we had to carry together to do our work. I remember back in the '90s when Craig Barrett was then Intel's CEO, today Intel Chairman. He used to mock us engineers, saying, "If this is the best you can, you're not really good engineers."

We used to laugh back at him, and we called his dream of this really thin, nice-looking, high-performing notebook, and we called it the Craigbook. Sometime in '98 we decided it's probably going to be easier to design one for his liking other than argue with him. That's

what we did. These are the Centrino notebooks that we all love and use today in big numbers. And they're used because they're useful. They're high-performing, no compromise, good battery life, [we added] wireless computing, and of course we do it in multiple form-factors.

We believe that just doing well the job of notebooks, we're going to continue the steady slope of [unintelligible] of notebooks sales on a yearly basis. But as I mentioned in my first slide, our appetite is way, way bigger. We want to expand bigger, smaller, add more capabilities to the notebooks.

And if you count, what we need to do -- I really want to admit, I screwed up. When I created this [kind of form and] vision, it was before the Olympics. So, I counted seven. I said, "If we are going to win seven gold medals, we're going to do great." Well, I was [proven] wrong, so I have to gather my team after IDF and get the eighth one, at least.

So, I'm going to go one by one. I'm going to start with introducing quad-core into notebooks. I want to put that into perspective. In the '70s, Cray systems were doing what used to be called then "super-computers," which had a quad-core engine. It was huge. I don't know what kind of big size it was -- definitely not fitting into a notebook. And it was [Freon cooled].

In the early '90s, Pat started that, and I was continuing the work on the Pentium Pro. The vision was to create what we called then a simple, high-volume server product which had four CPUs both about that size,

and it was [drawing] something around 200 to 300 watts. So, [putting] together a technology to put this kind of super-computer into a notebook form-factor is not a small undertaking. It requires architecture, power management, and the leadership 45 nanometer [unintelligible] technology.

I want to take this opportunity and call Craig to really show us what kind of great things we can do with quad-core.

Craig Barrett: Absolutely. How you doing, Dadi?

David (Dadi) Perlmutter: Hi, Craig.

Craig Barrett: We're going to go over here and take a look. The big thing that we get in mobile is people want to be able to take their computers and laptops on the go, and not have to compromise for power and performance. Our fault, guys. We didn't tell you about the mobile quad-core. So, let's introduce you to some. Right here we have a couple of different models. Actually, a Lenovo W700 in the back, this Dell [Nike], a new Cosmeo, as well as this Fujitsu Siemens, all quad-core notebooks across the board.

And what we'd like to do, we actually set up a little conference with our friends over in Tandberg. Why don't we go to them live high-def and see exactly where our mobile quad-core expert is on the road?

Art: Hi, Dadi and Craig.

Craig Barrett: How you doing, Art? Where you are, Jack Lord's house?

Art: No, welcome to my new cubicle.

Craig Barrett: Working on the road, we see. Go ahead.

Art: I got my new quad-core notebook, and I'm able to run a ton of high-performance applications. In fact, the audience is seeing me through this new software from Tandberg called [Mobe]. It's high-def video conferencing, and we're able to bring this high-quality scenery to you via the Internet. This is all enabled by optimizing with SSE4 instructions. And running on our quad-core notebook we have headroom to run a ton of other stuff. I think you were going to show them some of the other things we could do on your side, on your quad-core notebook.

Craig Barrett: Yeah. I think we're going to sign off. We sent you out there actually for some serious work. It looks like you're doing some serious relaxing out there. Anyway, it's looking great, so why don't you go ahead and keep the work up. You have a beer coming. That's awesome. Okay.

                   So, a few more technical details. The 720p conference is coming directly, and you can see the crystal clear quality. But as I go ahead and use that on my quad-core notebook here, I'm going to go ahead and bring up actually some high-def video, some 1080p video that I've been playing the entire time. So, you want the ultimate in multitasking? There you go. Also, I take a little chunk of my task manager sitting at about 50 percent, 60 percent utilization. So even

more headroom to go past from there, so definitely no compromise on these quad-cores, Dadi.

David (Dadi) Perlmutter: Great.

Craig Barrett: Thank you very much.

David (Dadi) Perlmutter: This product is going to be in production based on our Penryn technology this quarter. So, it's imminent.

Please stay here, Craig. I want to talk about what we call "mainstream." Quad-core is wonderful. We believe it's going to be in the high-end. We have a way to go on mainstream computing.

A month ago, we introduced our Montevina, our Centrino 2 platform into the market. Of course we have excelled in anything from performance to battery life, form-factor, wireless performance, and of course the newly-added vPro technology. But it's better seen than done, and therefore I want Craig to go over with us on the wonderful features that really deliver breakthrough on-the-go performance. So, Craig.

Craig Barrett: Yeah, let's go ahead and take a step through. I've taken all of your comments to heart. I always stick you with the slow systems -- my fault. We switched it around this time. So, on your side I have this incredibly beautiful Centrino 2 system, and I'm going to go ahead and take the slower ones over on my side. This is actually a T61, which is previously our Santa Rosa generation, and then two more years back

here on the original Centrino Duo Napa. So, we're going to do a little bit of bake-off using some video encoding. Why don't we just go ahead and give it a one, two, three on the enter key? One, two, three.

And actually, what we're seeing here up top is, Dadi, your laptop is crunching away. We're taking a look at some high-def video on Sony WEGAs that I went ahead and captured, and here with our Santa Rosa and Napa machines, and I'm shrinking these guys down into something that's a little bit more manageable for my mobile devices, some MIDs, maybe an iPhone, that type of stuff. And you're crushing me out of the gate.

With SSE4 instructions and the multimedia, you're able to get incredible performance, where -- why don't we just let these guys go, Dadi? It looks like they're going to take a little bit longer to go ahead and set up. But how's that for extreme performance on all of our Centrino 2 laptops this year?

David (Dadi) Perlmutter: This is wonderful, but we are talking about a real platform, and the real platform is not just wonderful CPU. What else do you have to show me?

Craig Barrett: It has to be everything, Dadi. Let's go ahead and take a wonder down here. What we have to show you on this little Sony VAIO system is switchable graphics. And for the user who actually wants to have everything on the go, this is going to supply it to them. So with that little flick of a switch, what I've actually done is the NVIDIA discreet graphics that are on this system I've now disconnected, and we're

moving on over into the Intel chipset to use our integrated graphics solution to save us that battery.

So, for the person who wants the best of both worlds, I can jump back and forth between high-performance gaming and now move into a little bit more battery savings in the incredible formats that we have on our integrated graphics. So, I'm sitting here at about 24 watts, and the screen just blanked out to go ahead and disconnect. You're going to see an extreme rapid reduction in the amount of power that we're drawing off the actual battery itself.

So, there's my quick spike. Now I see I'm in a rapid drop. As I'm cruising around here from about 24, this is actually going to bottom out somewhere in the neighborhood of -- it looks like we're getting down to 15 watts there. So, about a 9-watt savings on a standard 6L battery. You're looking at over an hour of saved battery life just in that little performance switch on-the-go. So, more and more progressing to that whole day battery we've been talking about for so long.

David (Dadi) Perlmutter: And this capability supports multiple [unintelligible]?

Craig Barrett: We don't care about the solution. So, whether you're on ATI or NVIDIA, Intel Integrated Graphics will work with you to make these amazing features built in.

David (Dadi) Perlmutter: You know, we always talk about that graphics is wonderful, but what about media?

Craig Barrett: High-def. This is the year of high-def, as have been the last several. So, now we have incredible machines and now the horsepower to play these through. So, I have this Blu-ray HP-enabled Integrated Graphics Centrino 2 system, and we're now, for the first generation, able to play an entire disk, a two-hour movie, on Blu-ray all the way through on a single charge, which has been great in the past if you just want to watch a trailer. But if you actually want to get a full production movie under your skin, this is the way to do it.

Something we've seen in the traditional laptop -- how about something like this you'd probably see a little bit more traditional for your digital home? What I have here is an AOpen machine, which is a desktop Montevina. So, all the great powerful components in those high-performance HD, like we're seeing here on some Blu-ray, is squished down to this tiny, little platform you can hook directly into your living room up to your plasma TV.

David (Dadi) Perlmutter: And for those who like, it comes also in pink.

Craig Barrett: Uh-huh. [There'll be] flavors for all of us. Now one last thing I want to show you here is our Extreme processor. So, if you even want to push it forward for all of our enthusiasts and our over-clockers here in the crowd, is I actually have a CyberPower OEM machine, and I'm playing a little bit of "Assassin's Creed" from Ubisoft here.

Talk about some amazing graphics and game-play capability. This is some stuff that we previously have only seen on the desktop. So, for

something that you have on the go -- pardon me, guys. I want to go ahead and give you the big wow factor. This is something gamers have previously only seen on the desktop, and we're going to get some amazing type features -- like that. So, truly enabled to take you to the highest performing gaming with you on the go.

David (Dadi) Perlmutter: This is a great machine [on] notebooks with a great battery life and form-factor and everything.

Craig Barrett: Absolutely. This is the brand new Extreme, which is our 3.06 and the world's highest performing mobile processor. So, pretty impressive there.

David (Dadi) Perlmutter: Thank you very much, Craig.

Craig Barrett: Hey, thank you very much, Dadi. [Applause]

David (Dadi) Perlmutter: Before you go, these are all kind of relatively old news, four weeks old. But do you want to talk about something new?

Craig Barrett: Let's go ahead and take a look over here. So, brand new for our IDF audience today, these were a lot of the crafty details that we came out with for launch. But we didn't talk about Intel SSD yet. So, let's go ahead and break into that. We'd been talking about all the great strides that we've made to make Centrino the best-performing laptop platform in the world. Well, processor, graphics -- those things we do

incredibly. Now, we want to go ahead and bring that into the I/O space.

So, just for a quick reference, I actually have two machines here, and our system over here is actually just doing a quick I/O meter, which is doing reads-to-disk. And for our Intel SSD machine, I'm reading about 7,000. Now I want to compare that to a single 5,400-RPM drive doing the same at 62. So, you want to talk about extreme performance -- when I'm just hitting the I/O of that platform, you can see an incredible difference here. You want to bump up to RAID on a regular hard drive, as well? You're only going to see double, triple of that performance of the triple hard drive. And you see we're looking at somewhere in the neighborhood of almost [70x].

David (Dadi) Perlmutter: This is wonderful, but what does it do to me as a user? What do I get? What kind of impression would I see if I'm going to use this?

Craig Barrett: You're going to get faster across the board. So, not only are you saving energy and getting more power battery back into that laptop, you're really going to see fast boot, fast responsiveness to applications, and quicker time to productivity to get you up on the go. Because you know how we don't like to wait, Dadi.

David (Dadi) Perlmutter: Okay. Thank you very much, Craig.

Craig Barrett: Thanks a lot, Dadi. Appreciate it. [Applause]

David (Dadi) Perlmutter: So, this is coming to you soon. The 80-gigahertz assembling now, going to be in production in September. The 160-gigabyte version is going to be shipping in Q4. This is going to [come] with extremely fast system, high resilience, wonderful machine. [And in perspective] I showed earlier the machines of the '90s hardly had 20, 30, 40 gigabytes of extremely slow parallel technology of disks. So, this is great stuff.

But we are not going to stop here. Pat's talk just less than an hour ago about the tick-tock model -- and the tick-tock model has something wonderful of [passing a baton]. So, the Mobile Group has been delivering the CPUs for all the way from servers to notebooks. Now it's your turn, Pat. We're going to have Nehalem technology in notebooks next year. It's going to be using all the wonderful things, and all the great power management that Rajesh was talking about, and is going to be even more, which I'm going to leave for next IDFs to talk about.

I'm going to show here a validation board. We're just getting this one ready for production. So this is not yet in form-factor of a notebook. But this is the validation board that we have for validating the first Nehalem we codenamed Clarksville. I have four CPUs, eight threads, and it's going to be delivering performance. The wonderful machines we just showed are going to pale compared to those. And it's going to come with all the form-factors eventually of notebooks in two cores, four cores, everything you want to have.

We're going to talk about things getting smaller and smaller. This time we want to talk about small form-factor devices. We introduced small form-factor notebooks years ago. We came with new packaging technology on our Santa Rosa platform. And a few of our OEM customers have been shipping wonderful products like the Notebook Air from Apple, the [8300] from Lenovo, and many others which are really slick, small and high-performing devices.

We are now introducing -- basically putting these small packages on our Centrino 2 technology. This is shrinking down the packages from the standard devices by big factors. It's going from about 35 millimeters square from the graphics and the CPU to something in the range of the low to mid-20s. The I/O hub goes all the way from 31 millimeters to 16 millimeters square. This enables to put things in extremely small devices. And we're having a bunch of those on that side, many wonderful designs of small form-factor devices from multiple suppliers which we're all proud of. I'll come back to these systems later on.

But it's many times better to hear about the technology from those who make them. So I'm happy to invite Keith LeFebvre, he's the vice president of HP, to the [unintelligible].

Keith LeFebvre: Dadi, how are you?

David (Dadi) Perlmutter: Hi, Keith.

Keith LeFebvre: Nice to see you.

[Applause]

David (Dadi) Perlmutter: So you have some nice things over here.

Keith LeFebvre: I have some nice things that I wanted to share with you. Now you talk about ultra-smalls. We have ultra small. But you get a whole big one first because you're a pretty strong guy.

David (Dadi) Perlmutter: Yeah, okay.

Keith LeFebvre: It's a special product for us. So one of the things that I wanted to talk about is the fact that, you know, we talk about building notebook computers; it's really about finding ways to be able to help people make connections. And when we talk about connections, we talk about customers who have different needs. For business users it's all about making secure connections to be able to have access to their information. For consumers it's about having easy access to their entertainment, to their files that they use for music or photography. In either case, everybody who's using notebooks these days wants to be able to have an easy-to-use, reliable and secure system to be able to get at that.

Now with HP spending $3 billion a year on research and development, we're always looking for new ways to help people to make those connections, to be able to connect between themselves and to connect to their information. How do we do this? How do we get this much to be able to invest in a business that's become so much of a commodity

business? Well really it's a matter of volume. We ship about 84,000 units a day which turns out to be about 3,600 units an hour, which is like a computer a second. So we're going to help you in that chart over there that's going to show the growing number of notebooks sold.

And we do that through a combination of being able to get through 80,000 retailers around the world, 140,000 value-added resellers across the globe.

Now HP has a way to be able to tie the right mix of understanding what the form is with the functionality. And so we have the engineering side of HP who's using all this wonderful technology from Intel to be able to deliver the solutions to solve the problems. But we also have folks who are specifically focused on industrial design. And those industrial designs are all very much focused on the cool new looks that people want in terms of the actual touch and feel.

So we think that we have a unique strength in terms of our ability to touch both the physical designs as well as the really cool physical packaging to be able to put these machines in. And we alone have the resources to be able to do that.

So let's talk about the products that we have here. So I'll switch products with you and let you hold this.

David (Dadi) Perlmutter: Sure.

Keith LeFebvre: So this is about a three-pound notebook, a little bit over three pounds. It has an integrated optical drive. It's called the HP EliteBook 2530p. And this machine is specifically designed for customers who are in business mode who need to be able to travel and don't want to be lugging around a heavy machine.

The thing that is very intriguing, I think, about these whole new machines, the whole line of EliteBooks, is that we've got a completely different packaging. Basically it's got an aluminum skin which we're using something called DuraCase which is extremely resistant to scratching, about six times more resistant to scratching than our previous generation of products.

In addition to that we've increased the stiffness. So one of the things that most people do when they want to test a notebook is give it a torsional test across the back or be able to push against the bottom. It's got an 80 percent increase in torsion and a 50 percent increase in terms of the flexion.

Now underneath that pretty skin is some really cool Intel technologies. We have ultra-low voltage and low-voltage processors. But we recognize that people want to be able to drive better performance, and so we're now putting 5400 and 7200-rpm drives into these machines. But most importantly we've actually got the new Intel solid-state drives, which I just got information from our engineering guys last night, we're getting a 507 percent performance improvement compared to a 5400-rpm drive, which is pretty amazing. So we're very excited about what we can do with solid state.

And of course solid-state drives help us to dramatically increase the amount of battery life we have in these machines. The Ultra Portable has a 3, 6 and a 9-cell battery, and our 6930, which is our mainstream 14-inch, has a 12-cell battery which will actually allow you to run for 24 hours. I heard the challenge made earlier. We can actually run now for 24 hours with our solid-state drive using our batteries on our 6930.

So when we look at the products, we look at the ideas of finding ways to make them more interesting for people, we come up with professionalizations like, for example, 2-megapixel webcams built in, and finding ways to be able to make them more secure by having things like File Shredder.

And moving over to the other end of the spectrum is the big guy here and that's the mobile workstation. Yeah, it's a little bit heavy, but as you mentioned before, this is your dream machine. This is your quad processor, your quad-core processor that allows you to run all of the kinds of applications you would be running with a desk-space workstation.

We have a lot of customers who have now moved over to mobile workstations now that can do all of their CAD applications and specifically things like VCC, Visual Content Creation. We have a DreamColor Display on this machine which is done in conjunction with HP and DreamWorks to be able to give you a WYSIWYG design, so you have exactly the same colors on the screen as you'd have on a print [unintelligible] media, whether it's on film or paper.

So that is the new HP product line, the EliteBook. And we're very excited about using the new Intel technologies to be able to take it to the next level.

David (Dadi) Perlmutter: Great. Thank you very much, Keith.

Keith LeFebvre: Thank you.

[Applause]

David (Dadi) Perlmutter: A year ago in last year's IDF, I was talking about the five key things that key users want from our mobile platforms. With [some of those] we've been very satisfied. Those have been the classic [unintelligible] mobility that we excelled since we introduced Centrino, performance, battery life, wireless communication and form factor.

But with the increasing popularity of notebooks, a new problem was really increasing in size, which caused theft and loss of notebooks. Now, it's one thing to lose something which ranges from several hundred dollars to $1,500 to $2,000. But the most precious thing that you have in your lost or stolen notebook is very much the data in it. Enterprise or personal data is sometimes way more precious than it would be of the notebook.

So we took the challenge upon ourselves to go and fix this problem or make it way better. So we are talking about really technology that

helps protect the enterprise data. So I would like to have a video shown to show what our partners in Lenovo are doing with that technology.

[Video plays]

David (Dadi) Perlmutter: So what are the things that we wanted to get done with this [anti-theft] technology or on-the-go security? First is prevention. It's really preventing the wrong people, those with malicious intent, to go and use our data. The second one is detecting. Detecting the fact that someone has stolen or taken our notebook and/or detecting where this person is. The moment you found out about this one, we need to respond properly. And last but not least, when we get our precious notebook back, we would like to reactivate it and be able to continue to use the data.

We are doing that with partnerships. You heard Lenovo. Fujitsu Siemens is another OEM partner, which is going to ship products using this technology later this year. We are also working with two ISVs, Phoenix and Absolute Software. Absolute Software was the first one we worked with in this technology. We're using our internal embedded [unintelligible] functions in our chipsets to be able to have secured operations to be able to get these things done. And I'm going to show you how it works.

So therefore I want to call Craig again to really show us what happens on how this one really works.

Craig Barrett: All right. So I have your brand new anti-theft laptop. These are with all of your mobile roadmaps through 2020 here, Dadi, so probably some pretty valuable information that we wouldn't want to have stolen. The best thing about anti-theft technology is that I don't have to chase that guy down.

David (Dadi) Perlmutter: Craig, just a second. Your notebook!

Craig Barrett: Well, your notebook.

David (Dadi) Perlmutter: Oh, my notebook. Oh!

Craig Barrett: So sorry about that. No worries. Normally I would run after that guy like greased lightening. But luckily we can go ahead and make a call right away to IT and they can sort us out. Luckily here at IDF I'm managing all of our executive notebooks. So let's just go ahead and log in to our service here. And I can take a look, and we're working together with Lenovo and Phoenix Technologies on this one, also our other partners such as Absolute. And as you can see here -- there's your laptop here at the top. And what I want to do is I'm immediately going to give this guy what we call the poison pill. And the poison pill basically is going to take . . .

David (Dadi) Perlmutter: Is that going to kill him?

Craig Barrett: No, no, it's definitely not going to kill him right away. We want to go ahead and get him later. So the deal is that the poison pill is actually going to send a disable request to your laptop. All of the encryption

that we have built into that machine now crawls over all of your data and is protected and yet secure away from all prying eyes.

So as I went ahead and had that sent off, I can actually track where this laptop is by using some of the vPro features that we have built inside as well as anti-theft. So let's go ahead, and I can see -- actually on the GPS signal, we have a laptop that's still here in the building. It looks like just outside of Howard Street so that's kind of funny. Why don't we go ahead and see exactly, from a webcam photo that we've taken through control of our little system there, who's actually got away with our machine? So let's go ahead and give this guy a quick load up. I'm dying with anticipation to see who it is. Pat Gelsinger?

David (Dadi) Perlmutter: I know the guy. Hey, Pat? What are you doing with my notebook?

Pat Gelsinger: Well I heard you were working on your memoirs on management secrets and I needed them, so I wanted go get an advanced copy. Is that okay, Dadi?

David (Dadi) Perlmutter: No, it's not.

Craig Barrett: [Laughs] So as you can see, we have Pat's computer there. And it looks like he's going to be searching through some items. But an immediate blank-out through the disable on that guy is going to lock out Pat. Now the brilliancy is, all of your data is secure and it's kept away from anyone's unprying eyes until you're able to go ahead and log back into that machine and give your correct credentials.

David (Dadi) Perlmutter: You'll have to use your own management techniques. Sorry.

Craig Barrett: I was going to say, it looks like you're pretty much done, Pat. But anyway, you are quick like a cat. I'll give you that. Anyway, truly with anti-theft technology in this next generation of our Centrino with vPro we're going to be more safe and secure than ever. Thank you very much.

David (Dadi) Perlmutter: Thank you very much.

[Applause]

David (Dadi) Perlmutter: We may not always be lucky to find Pat so fast, but I think being able to lock and disable any malicious user from our data is critically important.

The next capability I want to talk about is wireless broadband. Wireless broadband is critical to mobile computing. It's definitely something that we know is going to help. When we moved to broadband in the '90s, Internet broadband, it really gave a big rise to sell some PCs, people wanted to get connected.

Craig, in his talk, talked about the great connection being made in Africa for health and education use which is extremely useful, and we are very proud to be extremely close to starting having products and networks.

So first of all the product. We're going to ship soon our Echo Peak Wi-Fi/WiMAX products that come in both full and half-mini PCI [boards] that have both 802.11 Wi-Fi and WiMAX 802.16e. This is delivering many megabits per second on the real networks.

But having the component is far from being sufficient. Seven OEMs are going to be shipping our notebooks with our Echo Peak technology in the first quarter of this year. But it's not enough, because the notebooks need to have someplace to connect with. In order to be able to achieve that, we worked together with our partners [and put] a billion dollars of money in order to help merge Sprint WiMAX network and the Clearwire WiMAX network to create the one global across North America. We brought in a few more formidable partners like Comcast, Time Warner, and Google. And the first network is going to be launched in Baltimore in the coming few months.

We also forged the Open Patent Alliance. We want WiMAX to be as close as possible to IPR-free system, unlike many other networks in the world. We want to make sure that it's going to be cheap, available, and global.

We're continuing, because our network in North America is less [forming sufficient], we continue to work with KT on the [wide brow] and its improvement into WiMAX into the future. And next year there are going to be launched two WiMAX networks in Japan and in Russia.

We had wonderful news just a couple weeks ago when the Indian government freed up 2.5-gigahertz spectrum, which is going to be bid for both cellular and WiMAX technologies. And we are working together and investing with partners in the UK, in Netherland, and in Malaysia to build mobile WiMAX networks over there as well.

But as I said earlier, you know, hearing is not as good as seeing, so I would like to create a WiMAX-based call with John Saw, who is the CTO of Clearwire back in Kirkland. So let's hear John on --

Craig Barrett: How you doing there, John? Welcome to the keynote.

John Saw: Hi.

Craig Barrett: So maybe you could tell us a little bit what you guys are doing over there on your side of the Clearwire fence?

John Saw: Sure. And hello to all of you in San Francisco. I'm talking to you from the Clearwire office in Kirkland, Washington, over a mobile WiMAX network. You know, it has to be WiMAX and not 3G when you do not see those frozen frames with the word "buffering" at the bottom of the screen. Plus, you can actually see me wave real-time.

Our WiMAX link today is running on a Motorola base station that's communicating to my laptop here via a WiMAX laptop card. [Our WiMAX networks] are demonstrating some groundbreaking performance recently, with [peak data rates of more than] 15 megabits per second and average download rates of more than 6 megabits per

second to end-user devices. Note that these rates are measured in a real market environment and driving at an average speed of more than 35 miles an hour.

We are very pleased with the progress in our first four WiMAX markets. Today our WiMAX network in Portland, Oregon, covers more than 1.2 million people, and we are looking forward to a commercial launch very soon. We are also making great strides in our other initial WiMAX markets, including Las Vegas, Atlanta, and Grand Rapids.

Together with Intel, we are testing a multitude of WiMAX devices, including the first notebooks with embedded WiMAX chipsets from a number of OEM vendors. We are very excited about our growing pipeline of embedded and peripheral WiMAX devices.

I know that many of you attending the conference today have worked very hard to help build this robust ecosystem. And I want to thank you on behalf of Clearwire for your partnership and for making the mobile Internet a reality today. And, Dadi, thanks for the opportunity to showcase mobile WiMAX as part of your keynote address today. And with that I'll [pass the time back] to you.

David (Dadi) Perlmutter: Okay, thank you very much, John. And let's have a big success with WiMAX.

John Saw: Thank you.

Craig Barrett: So also out here, Dadi, we'd like to actually show off to our audience
                      some of the brand new Echo Peak design wins from our OEM
                      partners. And as you show off on our small form factor Centrino 2s
                      here, the Toshiba as well as a Dell and Acer system and in the back
                      here, of course, Lenovo and ASUS. So truly when, uh, Clearwire gets
                      us up and running here in the U.S. along with Sprint, we're going to
                      see some great connected notebooks and one heck of an Internet
                      experience.

David (Dadi) Perlmutter: Thank you very much, Craig.

Craig Barrett: Thanks a lot, Dadi.

David (Dadi) Perlmutter: I promised to go smaller and smaller, so I want
                      to start talking about our notebooks and MIDs. Craig talked about the
                      embedded Internet and I think he's right on. Internet is becoming an
                      integral part of our lives. Everything we do, from reading paper, to
                      getting data, to kids doing homework, to playing games, to social
                      communication and social gathering in either real worlds or virtual
                      worlds, it's all about the Internet. And of course we'd like to take the
                      Internet on the go. Notebooks are good, notebooks with WiMAX are
                      even better, but we believe that the solutions to those who want to do
                      Internet browsing on the go, on cheaper and smaller machines than
                      current notebooks.

                      We talked about the Atom. I usually view great inventions by the fact
                      that you can do many things with a solution far beyond what was
                      originally intended. We intended to use the Atom processor for

extremely small form factor MID devices. We expected later on to do nettops, and Pat talked earlier about the usage of Atom into the embedded Internet.

And Eric Kim will talk tomorrow about using the Atom processor into the digital home, the Internet-connected TV. [It has high-capability for application.] It runs everything you used to know that runs on the bigger computers. It has the Internet performance, the power consumption, and last but not least, it comes with a small size.

This is what we believe is going to give us the extra boost beyond the notebooks to get closer and closer to shipping one billion units sometime in the next decade, hopefully sooner than later. And the [blue one] is Atom-based, which are [both netbooks] and MID. This is our anticipation of what's going to happen later, going into the next decade.

Atom is not just a promise for tomorrow. Craig talked about the small deeds are better than big promises, so Atom is real small, and it's happening now. We're having multiple partners already shipping netbooks products. And I have here various examples coming from ASUS, Acer, this is Lenovo, this is ToGo PC, and these are coming from -- I don't know, I cannot read the name, so all are wonderful. I think everything you touch is great performance, good usage.

But the real question is what people are going to do with them. And who is going to use them? I think the answer is very simple. It's basically everyone.

When we envisioned the netbook, we thought it was going to be predominantly for the emerging markets where people have less and less money to spend. It is an extremely useful and wonderful solution for them. But we were happily surprised to see that this technology is also being desired in mature markets. Similar usage, education, Internet browsing. It could be the first-time users in emerging markets and could be second-, third-, fourth-time users buying their second, third, fourth, and if they have large family like mine, maybe their sixth notebook to the home.

And the usages are quite wide. Examples could be anything people do today on the Internet. Anything from communication, to watch and play, to listen, to learn, and to just browse and get information.

Last but not least, if you really want and love the Internet and you want it on the go, you want it in your pocket. Some may need deeper pockets than the others, but they still fit in the pocket. And I have a large variety of mobile Internet devices coming from multiple suppliers. These are all based on our Menlo technology, and they come in different shapes, some with keyboard, some without the keyboard. These are all great, nice looking, great looking products, which are going to get better and better when our technology continues to improve.

To increase your appetite, by tomorrow you'll have to guess what is this, but to really know, you'll have to come early in the morning, 8 a.m., watch Anand Chandrasekher, senior vice-president and ultra

mobility general manager, to talk about much more details into mobile Internet devices.

So [where will on-the-go go]? I would like to show some opinions from people that might know, because they're dealing with on-the-go computing for many big portions of their lives. So let's roll the video and see what they're talking about.

[Video.]

David (Dadi) Perlmutter: So where is on-the-go going? I don't think we really know. I think we could give direction, which could show possibilities, and we being Intel, we are going to supply technology per the vision that we have been describing in the past hour. We're going to continue to deliver great CPUs, smaller form factors, cheaper Internet in new places, in the pocket or on the go. We're going to put advances in security and data protection, begin to improve technology of battery life, and we're going to get broader wireless, cheaper and better and with better coverage across the globe.

It's up to all of us, we, and you the developers, to put the extra innovation, the extra usage model, to build new usage models, new devices, new opportunities, and new services. And I think that the ideas that Craig was showing earlier this morning were just a tip of the iceberg what could be done with such a technology where everything is connected, everything is on the go, at your fingertips, able to do things.

So I believe that the vision of one billion mobile Internet devices, based on Intel architecture, is not a pipedream. It's going to happen. And we believe that working together with you, the developers, the innovative developers, that's going to happen even sooner than what we believe. Thank you very much.

Male Voice: Ladies and gentlemen, technical sessions will begin at 3 p.m., including our special technology insight. We would like to invite the press and analysts onstage for a photo opportunity. Thank you.

[End of recorded material.]