

DADI PERLMUTTER KEYNOTE

Female Voice: Ladies and gentlemen, please welcome senior vice-president, general manager, Mobility Group, David Perlmutter.

David Perlmutter: Good afternoon, everyone. Why are we here? Well if you don't know, at least I'm here about to tell you. We're here to talk about mobility. Mobility is very exciting segment in the market. It is a growth opportunity for you and for Intel, and it is one of the most growing businesses within Intel today. I'm going to talk about wonderful technology, wonderful products, great things that you and us could work together to get to the market and create new products, new services that the market did not have before.

I'll start with a short story about my mobility experience. Years ago, my daughter was backpacking in South America. You know, her mother was very anxious. Rare occasion that we get communication from her, email, sporadic, voice discussion very few. And we were waiting to just hear, to say that everything is okay. Now one day, in the evening, it was the eve of a holiday, she succeeded to get into an Internet café -- wonderful invention, by the way -- and got us on a messenger with a nice small video. My wife was very happy, but we were about to go drive 100 miles to go visit our parents. It was the even of a holiday. So my wife told me, "Go fix it. I want to drive, I want to be on time for dinner, but I want to continue my discussion with my daughter. What are you going to do about it?" Well, my wife's wish is my command. I presume I'm the only one this is the case for here, but I am this lucky guy.

So I took my notebook. I had a GSM modem. I hooked it in. And I succeeded to get my daughter on. The video was a bit more shaky, but we at least could identify that this was really our daughter. And we drove for two hours. Well, it was a Centrino notebook, so I was not worried about the battery life. It succeeded to go through this two-hour drive. We got into our mother-in-law -- this of course has to do with the mother-in-law - - and she was there, and we said, "Do you want to talk to your granddaughter?" "Of course, where is she?" And we gave her the notebook. She looked at the notebook, saw the picture -- by the way, this is, I think, the first time she really saw notebook and definitely saw the small video of the messenger. She of course kissed the picture and was very happy to see her granddaughter.

So this is what mobility is all about. This is creating this personal touch; this is new things that we could do beyond just email. On the way back home, I was thinking a lot, and my wife said, "What's on your mind? Are you thinking about this wonderful dinner, wonderful thing we had with the family?" I said, "No, I'm thinking about how can we make this technology way better?" So I got this kind of note from my wife about you techies. But here I am to talk about this new thing, trying to get this experience and other experiences way, way better.

But let me take you to history. This year we are commemorating the 25 years of the PC. And we tend to forget, but the first PC

was really mobile. Maybe portable or luggable is a better one. This is the Osborne portable PC that was available about 25 years ago. It was running CPM. And this was the size of the screen. So when you guys complain about [the 5- to 7-inch UMPC] we are talking about, this was the PC 25 years ago. Of course, we made it a long way since then, and you have some of these wonderful – some of our Santa Rosa notebooks that are going to be launched first half of next year. See the difference between what mobile really is.

But to think that Adam Osborne had, back in 1981 or even beforehand, this vision that if it's a personal computer, it has to be mobile. Because you really identify and get it personal when you take it with you and make use of it while you are moving. We've gone an extremely long way since then in these 25 years, and the situation is very different. We had -- in the '80s, mobile was really a niche. It was luggable; it was not even mobile. It was really creating and moving the Intel® Pentium® processor into notebooks in the 1990s that got a small lift into portable PCs, and we got to the range of 10, maybe 15 percent of clients shipped have been notebooks.

But only after the advent of Centrino® mobile technology, and later on the Centrino Duo, that the hockey stick really start lifting off. And we have seen tremendous growth and tremendous rate of people really desiring notebook, rather than a desktop. And in mature markets today, more than 50 percent of PC purchases are notebooks. And even in emerging markets, China -- when I

started my job in notebooks in early 2000, we had been about close to zero notebooks sold there, is going to be about a third of PCs sold in China at end of the decade are going to be notebooks.

Mobility goes hand-to-hand with personal. When you take it with you, you have the things that you want to have. You have your pictures, your videos, your data, your office, if you are a person like me that works around the clock. And you have it with you, any time, anywhere. Together with that, it goes with the shapes, the colors, the material, what this PC is built from to really make it personal. And you see that, and it's evolving. And you know when it's become from a technology to a fashion when you see kids have their own color associated with their own notebook.

Innovation has been increased, and the shape of the notebooks and how they look is way different from where they were just 25 years ago. And we have our Concept PC, concept that we have started four years ago to bring innovation into the market. We worked with our OEM partners, and they took this innovation, they put their innovation on top of it, so we create new shapes, new opportunities for people to use.

Comment [JJ1]: a concept?
Fragment

There's one thing I want to show, because this one is very special. The Concept really started in an open forum I had with our employees, and one lady raised her hand and asked a question, "You talk about notebooks. Do you think about ergonomics? I really wish I had a notebook that, you know, the

screen would have been lifted up so I don't have to kind of look forward and have my neck and my back hurt." So I talked to our Concept PC person, and he said, "We'll think about this one." After awhile, he came back with this. And of course, you can take it up and down. He said, "It's smaller than you asked for, because if you want to see a movie, you can really go and make it like that." And by the way, this special feature is also especially for you, because when you fly coach, and I usually fly coach, you can really, when the guy in front of you reclines, you can really go and type like that. So, anybody fly coach and try to work and read this notebook like that? Not anymore if you use this. So, we work with our partners. They're going to take this to market in PRC and in Germany and there's more to come.

When you talk about mobility, you always ask about battery life. People want more and more battery life. We improved battery life quite significantly when we moved from Pentium to Centrino, and we are now running in the range of four or five hours quite nicely, and we improved it since then [unintelligible]. It's a lot of work. Our first move has been cutting power from our CPU and our chip sets, but this is way from being enough. You will have to go cut power across the platform in order to make it battery life and the power reduced. By the way, just to memorize, cutting one watt gives you about 25 to 30 minutes, give or take a few.

Comment [JJ2]: delete?

So, this graph that you have on here shows you certain things that we are doing. I'm going to touch on two. One of them is

Robson technology. I'm going to talk about more details later, but it shaves about 400 milliwatts from the platform. Another big deal is that we work together with Toshiba Matsushita, and we have created a display technology with them that really does dynamic switching between progressive and interlaced, and we're going to demo that in a few minutes to show you the benefits of this one, saving power from the system. And I want to call [Adam Moran] to really talk to us about battery life. So, Adam, please.

Comment [JJ3]: Or is Toshiba Matsushita display a name?

Adam Moran: How's it going, Dadi?

David Perlmutter: I'm fine. How are you, Adam?

Adam Moran: All right, thanks for having me. Well, I've got a couple of systems over here on this pedestal. What I have here on the audience's left is a non-Intel based system and it's got a 15.4 inch screen, a standard size battery, and on the data sheet, you'll read some things like dual-core, somebody's graphics, these kinds of things like that. Now, on the audience's right side, over here, what I have is a Centrino Duo based system. The specifications of the two systems are identical. The clock speeds are matched about the same. The screen is the same size and brightness. The battery is the same, and they're both unplugged right now, and actually set to their highest performing settings.

Comment [JJ4]: fragment

Comment [JJ5]: Please confirm that this is the case – we can only compare apples to apples.

Now, what I have here to demonstrate is, I've taken some content off of my Sony 1080 camcorder, and I've put the content on both systems here, and I'm going to start using Windows Media encoder and encoding. So what I'm doing with Windows Media encoder is, I've taken that content and I'm putting it into a format that's more acceptable for distribution to my family, friends, co-workers like you, Dadi. And this is somewhat boring, however, here's where the demo starts to kick in. Our users are multitaskers now. We always have a dozen things going on at a time, and so what I'm going to do here is start both of these videos off, and what you'll see on the Centrino Duo platform on the audience's right is fantastic playback, whereas on the competitive platform, we've got really an unusable kind of jerky video.

But the real story here is told by this graph. These graphs represent Windows performance monitor that comes with the operating system, and this is monitoring the battery discharge rate. So, how quickly, in watts, that it's drawing. And what we see on the competitor's platform is somewhere between 42 and 50 throughout our testing, whereas on the Centrino Duo, we're seeing somewhere between 30 and in this case, 35. So during this benchmark, we've been seeing about a 30 percent battery efficiency performance improvement here, and of course your mileage may vary.

David Perlmutter: Is that our newest technology here on the Centrino Duo platform?

Male Voice: Oh, no, no. This is the platform that we showed this audience a year ago here. So this is the platform that the competitor shipped just a few months ago, and this is the one that we showed this audience last year.

David Perlmutter: Okay, so saving energy is really important for the three outlets, I presume.

Male Voice: Yeah.

David Perlmutter: Okay.

Male Voice: Now, over here, this is what you talked about on the previous foil from Toshiba Matsushita display, and we've been working with them and other industry partners to work on other pieces of the platform besides the CPU, graphics, Wi-Fi, and the other components that we're being so successful right now on. And so this is the screen technology, and as you mentioned, it will automatically switch from progressive to interlace.

Comment [JJ6]: See previous name

So if we look here, if we can get a little bit of a close up, I've got a dial on the bottom here, and this dial is cabled in. And what we're doing is we're monitoring the display power draw also in milliwatts, so we're coming in just short of 1,200 here, but when we disconnect the power, the system determines we are not playing video, so it's okay to switch to this interlace mode. And what we end up with is, as you see here the red mark has now

moved up under 1,000 milliwatts, a significant savings here. And when we go back and look at this technology in bigger screens, brighter screens with higher resolutions, that's where we're going to get the 400 milliwatts you talked about on the other foil.

Louis Burns: Very good, thank you very much.

Male Voice: All right, thanks a lot, Dadi.

[Applause]

David Perlmutter: It's a lot of work, milliwatt by milliwatt, but we are getting there. For years, mobile technology lagged significantly behind desktops. People used to say that if I want to do a real thing, I need to do it on my desktop PC, because my notebook is just too slow for me. Not anymore. This is a known fact since we launched Centrino mobile technology. We are cutting the gap, and you can do with a notebook what you can do with your mainstream desktop today and also in the future. And even when we went and introduced dual-core into desktops and servers, didn't take long time, and we have been having a real, true, dual-core going into our notebooks. And it's [shrinking] way beyond our dreams.

Comment [JJ7]: Delete?

If you look at the chart, our dual-core, 65-nanometer-technology-based products, the Core Duo and the Core 2 Duo are [ramping] way faster than our original Pentium M at 130 nanometers and Pentium M at 90 nanometers. Way faster. And

we are going to end this year with 90 percent of our products shipped in [performance to be] dual-core. This is really great because we are going to continue on a promise of uncompromised performance in notebooks, and to match whatever you have in mainstream desktops.

Last IDF, we stood here and in other places around the globe, and we promised that in the summer, we will have our Core 2 Duo technology, leading-edge microprocessor technology into our Core Duo [unintelligible] Centrino duo platforms. And we did just that. A few weeks ago we launched this product. It's a marvel, it's a breakthrough in power performance, it delivers 20 percent more performance than Core Duo in the same power envelope. And not [eating] anything on battery life. This is clearly getting wonderful remarks from the press and from the industry about the goodness. And I [join you to read with me] and enjoy, as I'm enjoying these wonderful remarks that this microprocessor is getting from the press. This is really the best microprocessor in the world.

But we don't stand still. We do not want to sit on our laurels and say this is it. We continue to move on, and our next big move is going to be in the first half of next year with our Santa Rosa platform. It launches many new things. It's going to use the Core 2 Duo that we just launched, but it's going to come with some enhancements that are enabled only at Santa Rosa. On top of that, it comes up with new technology chip set, graphics, new communication, wireless communication in a wide, broad range

of things. And our NAND Flash disk caching technology. On top of that, we are going to enable Intel management technology, and this is going to be the richest platform that we have ever introduced in mobile technology.

This is going to demonstrate to you the goodness of Santa Rosa, very much the main things that we are doing in a microprocessor to make it better than the predecessors. This is the chart of everything that exists on Santa Rosa with all the capabilities. The first enhancement going from Centrino Duo to Santa Rosa is increasing the bus speed from 667 megahertz to 800 megahertz. This is going to significantly increase the bandwidth within the CPU and the chip set. This, on top of the fact that we have a leading edge chip set microarchitecture, allows us to increase throughput to memory, reduce latency and results in much higher CPU performance.

The second feature is enhancing the dynamic scaling of foreign performance into the bus. In previous generation, we had the CPU going from high-frequency mode which delivered the utmost performance at the highest power, and used a scaling through what we called the P point -- and we have 60 P points -- all the way down to low-frequency mode, each time picking a different point of frequency and voltage, which means that at each point you get just the performance you need and not anything beyond that. And, of course, if the CPU needs to be active, but does not require to do a lot of computing, the low-

frequency mode is just what you need. And the lower the power you get, the better it is.

So, in the Santa Rosa generation, we have this super LFM. We now do the same trick that we do on the CPU core, taking it all the way down from high frequency to low frequency, doing the same with the bus, and taking that from 800 megahertz to 400 megahertz, resulting in the CPU frequency moving from 1,200 megahertz to 600 megahertz. This results in yet another reduction in active power. This is critical when you really measure, and will get battery life better.

The second one is when the chip is in stop mode. In core architecture, which is shared with Core Duo and Core 2 Duo, we have added the enhanced deeper sleep. In the enhanced deeper sleep, what happens is that the CPU frees up and evacuates all the contents from the cache and gets to then lower level of voltage, which means low power, and leakage goes exponentially with voltage. But each time there was a bus activity generated by memory activity, the chip set was waking up the CPU, checking on do you have this stuff in the cache. And the answer was no, because it was not there. We added a new capability. And with this new capability, the chip set knows that the cache is empty, and therefore does not have to go wake up the CPU and get it into an active mode, check the status of the cache and go back. It really gets to the situation where the CPU is in deeper sleep, as much as is needed, and is being

waked up to do real work, saving significantly the non-active part.

So, in summary, we have performance enhancements, active power, power reduction, and better battery life resulting from going all the way down in sleep mode to a way that you don't have to wake up the CPU.

Another wonderful feature that we have on Santa Rosa is really enhancing the graphics and the video capabilities of this product. Crestline, our next generation mobile chip set really delivers richness, realism, lifelike effects in high definition playback. And high definition is it. People are now having high definition DVDs, high definition cameras, high definition video recorders, and everyone wants to be able to play back all this wonderful stuff onto their PCs, essentially on their notebooks.

Clear video technology has the video processing hardware and software to allow to get high definition video playbacks, with sharper images and advance the interlacing and color controls. The 3D enhancement gives you better 3D graphics for better gaming, and really does hardware transformation and lighting to really get the improved realism and better for the future games and really be compatible and better than the minimum requirements of Vista Arrow. With all these wonderful enhancements, we never forget about power. So this product is going to deliver similar average powers to what we had in

previous generations and continues to support these display power-saving techniques we just showed in a demo earlier.

Next one, which really makes us proud, because it's the next step of improving platform technology. It's really attacking the I/O side of the business. And this has been neglected for many years, because this technology was focusing very much on getting it smaller and much higher capacity. And we see today 70 or 100 gigabytes of disk, but they're not any faster, or any significantly faster, from what they have been 10 years ago.

Putting a NAND Flash-based disk cache really does some wonders to your performance. It gives you 2x faster application load and application execution. It gives you 2x faster resume from hibernation on your notebook. And, like many good things, it comes also with low power, because it really eliminates many of the accesses in getting the disk spindles really spinning around and create some power. So I would like to call Craig to show us this wonderful performance and capabilities of Santa Rosa.

Craig: Hey, Dadi.

David Perlmutter: Hi, Craig. Long time, no see.

Craig: Thanks for having me. So what I want to show over here is, we're taking a look at a – our brand new Concept platform. And what we have is a next generation OS, which is Microsoft Vista,

running on our next generation of Centrino. And what we're showing on here is a bunch of widgets that I have pushed up front, or gadgets, rather, and these gadgets are basically bringing in all of this application straight to the desktops. When we were talking about all of these, you know, web cams that I'm bringing in, and my music and video and streaming radio, this is the type of new usage model that really the next generation of Centrino you are going to need to provide. So, as you can see, I'm bringing across all this video, but let me go ahead and bring some attention to our little CPU monitor down here. And we are basically going through a lot of paces when we're looking to this. It really is the ultimate in multitasking. So just a little bit of a sneak peek there. But I showed you this to show you this next demo.

David Perlmutter: You have a next step. Okay.

Craig: Let's go ahead and take this a step further. Now, this is going to be a usage model that everyone is going to be using in the near future, but let's take it to the real extreme. So what I'm showing here is, this is called CineForm, is the cinema behind it, and we're using a Silicon Imaging camera. Now, these two companies are partnered with Intel to optimize on our processors to use greater than HD film. We're talking twice as big, if not greater, than a high definition camera that we're capturing today in 1080i. So huge 2K cinema files, and we're actually doing it on optimized architecture for Core 2 Duo.

David Perlmutter: Is it Core 2 Duo in this camera?

Craig: Not necessarily in the camera. However, for the first time, I can take this type of processing and offload it and directly stream the capture from here right onto my Core 2 Duo notebook. So what we're actually showing off is real-time processing outside of the camera so I can stream it real time. And what that allows us to do is replace all the film for our Spielbergs and our Lucases, so we can actually take that type of experience with this form factor and our notebooks, and it truly is the ultimate experience in mobile workstation.

So really bringing this HD, what we have here to show is an independent film called Spoon that was actually captured directly and produced on our own next-generation Centrino Core 2 Duo architecture, which is currently the only architecture capable of doing this type of high-definition capture. So a really big one, and we actually played a few seconds of this one, so I just wanted to go ahead and show that off to you. It's an exciting business model.

David Perlmutter: So real workstation performance on the notebook?

Craig: That's exactly right, and while this is extreme, this is also the next generation of Centrino we're offering to everybody, so whether you're shooting your own HD, this is really the next generation of high-definition video.

David Perlmutter: Okay, thank you very much, Craig, see you. Notebook without wireless connectivity is not something that we would be happy with. In the Web 2.0 era, when you want to be connected to the one you like, whether it be a MySpace, YouTube, a Google Maps, a Yahoo search, [finals], whatever, you want to be able to access that any time you really need it. In order to do that, you're going to need wireless connectivity. That's not a new revelation. We are putting focus on wireless in two vectors. One, increasingly significantly the speed of our Wi-Fi solution, but also creating solutions which are expanding the way that you can connect. So other than connecting in small places, you really get networks that cover way larger, way bigger geographies.

So first I want to touch on our [unintelligible] [802.11agn] technology. This is supporting or compatible with 802.11 standard. It delivers 300 megabits per second. This is 5x than what we had in the previous generation of 802.11g and close to 30x better than the first 802.11 we had on our Centrino platform only in the middle of 2003. This is really based on 2x3 MIMO technology, two transmitters, three receivers that we have that really enhances the signal and does a lot of [wandering] digital processing to really be able to transmit and receive these wonderful rates. But we are not forgetting that this is a notebook, so huge focus on form factor, but making this mini-PCI Express card single-sided so we could make it denser, but also continue to focus and being leading edge of Wi-Fi technology as its predecessor was in power dissipation.

Since this is a standard in the [world], we want to make sure that we ensure interoperability with as many access points we could have. Because one of our big Centrino promises that you go out there and can make a connection. We are supplementing the Wi-Fi [alliance], interoperability testing with additional what we call real-world testing. This is taking our stuff outside and checking with our leading access point manufacturers, partners, like Buffalo, [Billing]. LinkSys, and NETview. This is crucially important because this robust testing program is what it's all about to make sure that we can allow interoperability across wide ranges of access points.

But going faster is one angle. We need to go broader. And my friend Sean Maloney usually says that Wi-Fi is like a pepperoni on the pizza; it adds a wonderful taste but doesn't cover the whole thing and you need to have also the cheese to cover the other spaces.

We're happy to announce today the partnership with Nokia to deliver an integrated wireless card that's going to be inside our Santa Rosa platform, that's really going to rely on Nokia's HSDPA wideband CDMA technology to deliver wireless WAN solution to our platforms. This is [Gatesoft; this is going to increase in our mind the attach rate] of third-generation technology into notebooks. So I call Craig again to really show us the goodness of wireless.

Craig: Hey, long time no see, Dadi.

David Perlmutter: Yeah.

Craig: So what we're actually doing for part two of showing off the feature set of Santa Rosa, we have our 11N notebook right here. And, you know, the main complaint that we're seeing is a lot of people talking about wireless and especially for G is that really, you know, there is some sort of sacrifice as far as the performance, as well as the reliability that you have directly at your desk right at your home. Well, we're going to go ahead and blow that premise out of the water here on stage today.

So, what we're actually seeing here is on the bandwidth meter that we're going ahead and feeding this notebook over our in-connection. And that bottom line there is representing the traffic on the maximum acceptable level of G. So, we're really going ahead and filling up that spectrum all the way. And then what we've done is kicked up 5x the traffic all the way up that we're actually feeding this notebook, representing moving my high-definition video around the home, streaming music, doing surfing, and also having members of my family, with everyone else around the table being able to surf and do those type of things around the home.

But we always like to take it a step further. So, I'm going to go ahead and kick off this high-definition video just as I would do in front of my TV at home or in my bedroom. And we're going to

see these beautiful HD colors and that bright video from that technology.

David Perlmutter: So, this is transmitted over the net?

Craig: This is transmitted directly over our wireless link. And I'm actually adding bandwidth on top of 5x, what we currently do with G. This is something that G just can't do anymore, so we're providing that next level.

David Perlmutter: Okay, super.

Craig: Thank you again.

[Applause]

David Perlmutter: So this is our card that Nokia makes for us. And this notebook is connected via this card to the network that we have here, the [sort of a] network that we have here around in the San Francisco area.

A few weeks ago we introduced vPro and IAMT into the desktop. In order to make it mobile, you have to make it support also wireless LAN, because this is the way, or the majority of the way people are connecting their notebooks into the corporate network. The AMT, and I bet that our guys in DG have covered this one in length, really delivers discover, protect and heal over the networks to make sure that you're either protected

from viruses that come in, or disconnect the sick client from the network so that it doesn't really be contagious for the rest of the network, and heal it eventually from remote by the IT person.

With Santa Rosa, we have this capability working over our Wi-Fi solution. And this is really delivering a solution now that an IT could select either a desktop or a notebook to this wonderful way of doing management. And it gets a lot of support from ISPs to really support all the things that you need to get Wi-Fi supported with IAMT.

But the jewel of the crown for wireless connectivity is WiMAX. This is what we see as the global high-speed data wireless connection globally. And in so discovering our products, we have announced this year several products. We are going to have a mobile WiMAX card that supports all the ranges of frequency from 2.5 to 3.3 to 3.5 gigahertz, really supporting wireless spectrum available in different countries in the world. This is supported by our [unintelligible] radio that really supports all these frequencies. And we are going to take this technology into the future supporting next-generation MAX, and also when we integrate Wi-Fi and WiMAX together in our 2008 platforms to really deliver WiMAX into the masses of Centrinos when we ship this one.

And last but not least, we have started with Rosedale, our fixed WiMAX technology. This is going to deliver and be able to allow and support 802.16d. We're going to launch a new product,

Rosedale 2, which is supporting dynamic switching between 802.16d, which is the fixed WiMAX into 802.16e, which is the mobile WiMAX. This is going to be done by software release. And service providers who are building fixed WiMAX networks today, could switch, later on, their system, their network, and also the CPs built around Rosedale 2 by a software release over the year to support the mobile solution. And this network could later on support Centrino mobile technology.

The key word that we will repeat and has been repeated time and again is really interoperability of networks worldwide in open standards. In order to enable, and our goal is to really have millions of WiMAX users going on with their notebooks or UMPCs with our WiMAX solutions and be able to connect anytime, anywhere, and anyplace they're going to be around the world. Therefore we released earlier this year the Intel Centrino mobile technology difference guide for WiMAX. This is really to give a roadmap to the service provider building the networks how to build the right profiles and right configuration for WiMAX solution. So if you're interested, watch intel.com/go/wimax. And later this year we're going to increase it with more details and more information because this is critical for us and for you to make sure that we can connect and have interoperable systems around the world.

But components are not enough. The real thing is really having networks. And the tipping point is coming. And we have two big announcements with Sprint and Clearwater announcing that

they're going to build networks in '07 and are going to have commercial services in 2008 in areas that cover more than 100 million people. And they're all going to supply WiMAX – and we're going to supply WiMAX notebooks into the marketplace. I'd like to pay a tribute and have an opportunity to have a video showing Sean Maloney and Scott Richardson that really made it all happen, so please roll the video.

[Video plays.]

Male Voice: So after more than four years of hard work, research, and testing, Sprint Nextel has selected the mobile WiMAX IEEE 802.16E technology for its 4G network. Tens of millions of electronic devices will be embedded with WiMAX chipsets, enabling them to connect instantly to the Internet and each other.

Male Voice: Clearwater's business model is focused on the delivery of wireless, high-speed broadband Internet access. And WiMAX is going to be the key, pivotal technology that we use in deploying those services to consumers. What really excites Clearwater about mobile WiMAX is that we look at the opportunity to deliver anytime, anywhere communications that allows the consumer to define, on their terms, when and where they want to have access to information, and that's a very compelling proposition.

Male Voice: WiMAX enables the mobile Internet, and the mobile Internet is just upon us. It's different than today's cellular network. For the

first time, we're going to get multi-megabit speeds to new types of devices that go beyond the broadband service that you have in your house today. In Nigeria, Suburban Telecom is blanketing the City of Abuja and covering millions of people with broadband Internet access. In the US, we're working with CalTrain in California to deliver integrated Wi-Fi/WiMAX connectivity to moving trains. And in Brazil, we just helped bring WiMAX to a town along the Amazon, making it the world's most remote digital city. We've moved beyond first-generation devices, and by 2008, we plan on delivering integrated, high-volume Wi-Fi/WiMAX modules that are going to be available for PC manufacturers to integrate in their new notebook designs.

Male Voice: There has been a fundamental realization that WiMAX and the underlying technologies around [LS DMA] are just more efficient for data transmission, as simple as that. We're heading towards 100 million notebook computers and mobility built into these and built into small new devices. Ultra mobile devices will be the big transforming technology wave in our industry in the next three years.

[Video ends.]

David Perlmutter: Just having this excitement, we'll move into the next one, because we are talking about reinventing the PC, and here is our next step. We're going to create another category with the leading-edge technology that will create them smaller, lighter, better battery life. And we're going to extend mobility -- [IA]

mobility one step father in order to create and the ability to use the Intel architecture ecosystem that [exists there, which are] all the PC applications, all the plug-ins and everything that runs on the Internet today will really be able to run on these small devices.

So, first of all, technology. If our 2006 product is one in size of a package and power of the CPU, everything about UMPC is about shrinking power and shrinking size. So we're going to cut the power by half and the size by three-quarters in the product we are going to launch in the first half of next year. We're going to take it significant [step] further. We are basically going to [decimate] the power and make another push on the size. Going forward, we'll integrate more and more functions to make the product smaller, better and better power. And this is all about the innovation about UMPC.

But technology is not sufficient. You have to have other things, other technologies, other capabilities into the platform. It is all about the platform. So we are working with partners on anytime wireless, optimized displays, making sure that the 5- to 7-inch displays are bright, good resolution, low power, to make sure that it delivers the quality of the video, the graphics, the pictures that you want to have, that we get the right peripherals and other technologies like GPS and TV that people would want to have, especially on their ultramobile devices. It's all about the Internet. We all know that. The good thing about this device, that you could carry it with you and still have an Internet access.

We have wonderful things that we have showed yesterday, and this is this wonderful one of the concept of a UMPC. You can have a keyboard if you want one. You could turn it, do this kind of thing. This is light, easy to use. You have all the capabilities you might want from a notebook.

Earlier this year, in January CES, Paul and Terry Semel, Yahoo's CEO, talked about Intel and Yahoo cooperating to bring Internet capabilities, Internet services, which we call Truly Personal Internet, into UMPC. I have this wonderful opportunity to call Marco here, he's a senior vice president of Yahoo, to talk about Yahoo! Go for UMPC and describe what it really is. Hi, Marco.

[Applause]

Marco Boerries: Hi. Thanks, Dadi, for having me. So let me first tell you how excited Yahoo really is to work with Intel on the ultramobile PC opportunity, because we see that this great device is really a great extension of what we have on the PC to the mobile environment, especially leveraging the rich PC ecosystem. So Intel and Yahoo, as you know, are really working together to create the ultra-rich user experience of those Yahoo services that over 500 million people use in the world. So let me show it to you.

So what you see here in the screen is actually Yahoo! Go, which is our client experience to deliver what we call the lean back Internet, which is a media-rich user experience designed for casual interaction rather than always staring at a screen. So what you see here is kind of My Yahoo! done really beautifully. I see local traffic, because a UMPC is local-aware. I see my weather. I see my favorite game. And I see like an ultra popular video right now. I can also go and look in terms of the video and the [unintelligible], and because the ultra mobile PC is so media-rich, I have the full power of kind of like the PC environment at my hands, in the palm of my hands. And, again, because it's Yahoo, everything is fully personalized.

Another cool thing is, because I would like to really figure out where to have dinner tonight, you know, I go to the local feature. And, again, the ultra mobile PC is local-aware. That means, I'll just say I want to find a restaurant, I could find other things, and do search, and, boom, because the ultra mobile PC knows where I am, I now see here on Yahoo! Maps the cool restaurants, and, again, [brought in] by Yahoo! Community, personalized ratings and recommendations.

A big part of entertainment is music. So here, we have the music feature, which is really cool. And, again, because it's a media-rich environment, I [consume] music via video, not just the sound. And again, for me, I'm so excited about this. But this device is also a PC. So, if I have to, if I don't want to, you know, entertain myself, I, with one click, can check my emails. This is,

again, Yahoo email, number one email service in the world on your ultramobile PC. So again, we are really excited about this. This is a real way of bringing what we call the lean-back Internet into the next phase. And, you know, very happy to work with Intel.

David Perlmutter: Okay, thank you very much, Marco.

Marco Boerries: Thank you.

[Applause]

David Perlmutter: So, this is really taking years of the ecosystem that was built in the past 25 years, from application to services to capabilities, running on the machine or over the Internet into these smaller and smaller devices.

But that's not it. We have to educate our next generation so they're going to consume our wonderful devices then. So, this is the next thing that we can do with the UMPC technology. This is a PC. Really useful for kids. And this is what you might want to think your kid to have. First, it's very light. Two-hundred-and-a-half -- sorry, 2.5 pounds. Two hundred pounds would be tough. [laughter] Well, my daughter could, but maybe other daughters could not. [laughter]

Another thing for my daughter that I'm told this is [a rugged] PC, so if I drop it from three feet, it should not break. I will not tell my

daughter that, because she'll try six feet. And you can run anything you want. It's a fully loaded PC, running Windows. It could run whatever you want. We worked together with the software industry, with ISVs, to really create content, to really enhance one-on-one learning in the classrooms. And at the end of the day -- really done for my daughter -- is you can take it with you. The only one feature missing is a very important one -- a chain to connect it so she doesn't lose it. But . . . so I have to make it cheaper.

So, there is a question at the top of this foil saying 'delivering the personal Internet.' This is, of course, a rhetorical question. Definitely, yes. Intel has an unmatched combination of process technology, design and architecture capability, and manufacturing arm that could really create these products, deliver the features, deliver the capability, and run them in millions around the world. We have a year ahead of process technology. We are already shipping more 65-nanometer technology than our 90-nanometer technology, while our competition is not shipping a single 65-nanometer technology. We have 45-nanometer technology in design, going to be [dev'd out] soon. We have shown you the wonderful CPU microarchitecture, best of class. And our manufacturing is ramping in a significant manner and building factories, as we speak, to be able to deliver even more. This leads to leading in performance. This leads us into better power performance. This leads us to be able to deliver all the things that I talked about in this presentation.

The execution, the fact that Paul, and Pat before me, and I talked about all these wonderful products. We just launched mini-microprocessor chip set. It's not the result of just best effort; it was a well-planned, conscious effort that we have [painted] to go together and develop what we call the tick-tock model. You start with a new technology, you put the best team on it, you get it done. You then compact it to the next process technology, while in parallel our second tock team, really developing the next microarchitecture. And go on and go on. This is the Intel development engine that is going to continue to deliver to the future better, improved, low-power products. And Paul promised 300 percent improvement of power performance in four years. I'm an engineer, so I'll say 4x of power performance in four years. This is great.

So we have looked at 25 years of history of the PC, 25 years of mobile PC history, and we are reshaping and reshaping and reshaping again and again this mobile computing. And it's here to continue to grow, continue to flourish, continue to deliver new capabilities, and therefore building new services around this one to be able to really create things that are going to be good for us and for you. So I want to end up this discussion and thank you very much for listening to this afternoon talk. Thank you.

[Applause]