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Otellini's Vision: Augmented Reality, Personal Internet

By Eric Grevstad
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LAS VEGAS -- Donny and Marie Osmond aren't playing Vegas until this summer, but Intel Corp. President and CEO Paul Otellini's Monday keynote speech at the Consumer Electronics Show was a little bit country and a little bit rock 'n' roll.

The country was China, as seen through Intel's vision of a new "proactive, predictive, context-aware Internet." The rock came from the band Smash Mouth, whose lead singer Steve Harwell joined Otellini on the Las Vegas stage to preview some virtual-reality garage-band boogie.

Otellini defied keynote tradition by not giving a detailed plug for the Intel products announced Monday. Those included 16 notebook, desktop, and server processors created with the chipmaker's ultra-miniaturized 45-nanometer-process engineering and hafnium- rather than silicon-based transistor materials.

Instead, he merely cited them as examples of Intel's drive to reduce CPUs' size and power consumption enough to enable products that will put the Internet into users' pockets.

Otellini made a similar allusion to the "Menlow" mobile-device platform scheduled to ship later in the first half of 2008, which combines an ultra-low-voltage CPU dubbed "Silverthorne" and a chipset codenamed "Poulsbo."

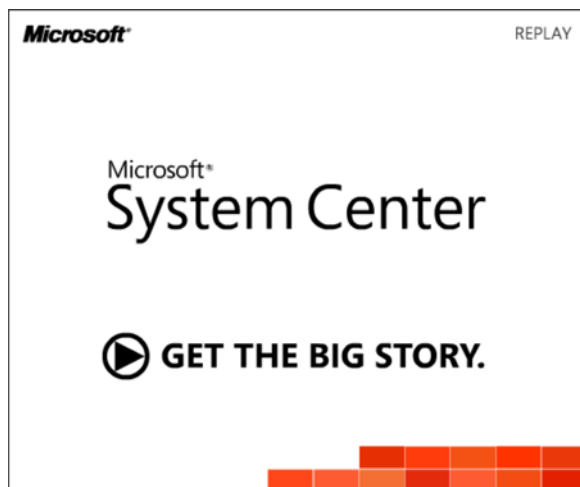
A demonstration highlighted a Toshiba prototype delivering a no-compromise Web experience, with rich browser-based applications courtesy of Adobe's Air development environment.

Looking beyond Menlow, Otellini described Intel's "first system-on-a-chip [SoC] for consumer devices," codenamed "Canmore," which puts "both a CE [consumer electronics] system and an Internet computer on the same chip."

Promised for the second half of this year, the chip will combine a PC processor core, 3D graphics unit for visual user interfaces and online games, broadcast TV tuner, and dedicated audio/video processing capable of playing 1080p HD video with 7.1-channel surround sound.

In addition to sufficiently small processors, Otellini explained, another necessity for "the personal Internet" is a truly global wireless broadband infrastructure.

Intel's preferred platform for this is WiMAX, for which the company is cooperating with wireless carriers to conduct commercial trials and test rollouts in 70 countries worldwide. A third challenge will be the development of more natural user interfaces, as



seen in current work on voice and gesture computing.

A whole new Internet

The last piece of the puzzle is perhaps the most ambitious of all: an end to what Otellini described as "the era of the go-to Internet."

"If you want to find a piece of information you go to your PC," he said. "Then you go to a place that has Internet access, then you go to a search engine, then you go to [a linked page]."

"Rather than us going to the Internet," he continued, "the Internet's going to come to us," at a level far beyond RSS news feeds or "push" computing. "The personal Internet of tomorrow will serve you -- delivering the information you want, when you want it, how you want it, wherever you are."

By way of example, Otellini staged a dream scenario of an American visitor to China for this summer's Beijing Olympics, equipped with a handheld Internet device that could, when pointed at a street sign or at the name above and menu beside the door of a restaurant, show it in English rather than with Chinese characters.

Such "augmented reality" might go beyond today's GPS navigation to guide a walker with real-time-rendered, panoramic point-of-view street scenes.

Or it might offer everything from an audio tour guide to directions to the nearest restroom when visiting the Great Wall of China; or supply "Star Trek"'s universal translator -- the same device turning a spoken English sentence into both on-screen and audio Chinese.

The massive database access of the demo, Otellini confessed, required the muscle of numerous Core 2 processor systems backstage. But with 45nm technology to keep Moore's Law in force for the next few years, he declared, "it's not going to be a blink before we make that into [handheld] reality."

All avatar

Finally, Otellini welcomed both Smash Mouth frontman Harwell and a series of social-networking and virtual-reality vendor execs to the stage to show how broadband Internet connections and potent processors can deliver the "realest" virtual reality yet.

First, Harwell and his bandmates put eJamming's Web-based AUDiO service to the test, performing their hit "Walkin' on the Sun" from separate locations around Las Vegas.

The effort aimed to show how the application both cuts latency and adds milliseconds of delay to keep jam-session partners or concert performers in time even when oceans apart.

Next came a demonstration of Big Stage's personal avatar creator, scheduled to go live in the second quarter of the year.

The process takes just three digital-camera shots of a player's face to generate a surprisingly realistic digital version of the user. The avatar then can be cartoonishly decorated with extras such as nose rings and a Mohawk or dropped into an e-mail, blog page, or other piece of content. The high point of the demo was Otellini's head replacing Harwell's in an MTV video.

Last, Intel called on Virtual Heroes and Organic Motion for a virtually live performance of the band's hit "All Star".

Harwell's avatar led the performance, moving in sync with his real self as captured by 16 video cameras, without the need for special stages and ping-pong-ball-studded motion-capture suits used by Hollywood to animate movie characters and by sports trainers to study an athlete's range of motion.

"Some might think the consumer electronics industry has completed [its] transformation

to the Internet," Otellini told attendees. "I believe we're just getting started ... Let's go forward and build something wonderful together."

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