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Intel Hopes Its Latest Chip Drives a New PC Generation

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Abstract (Article Summary)

At the same time, Intel executives appear closer to adding 64-bit capability to the company's line of 32-bit PC chips, a subject on which Intel has said little publicly. Intel developed Itanium, the 64-bit microprocessor, with Hewlett-Packard, but that chip is used in bigger, higher-priced network server computers, rather than desktop PC's.

Adding 64-bit extensions to PC chips would put Intel on a path similar to its rival Advanced Micro Devices, which has embraced a steady move toward 64-bit computing. It unveiled its 64-bit PC chip last spring. Many industry executives and analysts have long been predicting that Intel would be forced to bring 64-bit compatibility to Pentium 4, as well as to Xeon, in order to compete with A.M.D.'s 64-bit strategy.

Moving forward with 64-bit technology for its PC chips could also add confusion to Intel's marketing of the Itanium chip, which has received a lukewarm reception. In November, Mr. [Paul S. Otellini] said the company was on track to ship 100,000 Itanium microprocessors in 2003. Sales of the Itanium chip have fallen short of expectations since its introduction in 2001, and only recently began to gain traction.

Full Text (659 words)

The Intel Corporation begins shipping its new generation Pentium 4 microprocessor, code-named Prescott, on Monday. That step may put Intel, the world's largest chip company, closer to adding 64-bit capability to its personal computer chips in a future version.

The company, based in Santa Clara, Calif., says it expects the new Pentium 4 microprocessors to drive a new generation of home entertainment computer systems as well as PC's. The chips, in versions with frequencies from 2.8 gigahertz to 3.4 gigahertz, will appear this week in new computers from Dell, Gateway, Hewlett-Packard and Sony, among others.

William M. Siu, vice president and general manager for Intel's desktop platforms group, said the company hoped to sell 70 million Prescott chips this year, calling it the fastest production start in Intel history.

At the same time, Intel executives appear closer to adding 64-bit capability to the company's line of 32-bit PC chips, a subject on which Intel has said little publicly. Intel developed Itanium, the 64-bit microprocessor, with Hewlett-Packard, but that chip is used in bigger, higher-priced network server computers, rather than desktop PC's.

Last week, in an analyst interview available on the Intel company Web site, Paul S. Otellini, Intel's president, said that the company would add 64-bit capability once software becomes available. In a conference call on Friday, Mr. Siu reiterated that the company would add extensions when the "ecosystem" supports it, but he would not elaborate.

PC software is generally written for chips that process data in 32-bit chunks, but the Microsoft Corporation, for one, is working on software for 64-bit chips to be released later this year, analysts say. Moving to 64-bit technology -- which allows more data to be processed -- in desktop PC's would enable high-performance capabilities typically reserved for server computers.

Some analysts expect Intel to demonstrate 64-bit features in the Pentium 4 and the Xeon chip for low-end servers later this month at the company's biannual conference for software developers.

Nathan Brookwood, an analyst at Insight64 in Saratoga, Calif., said he expected 64-bit capability to be part of Intel's next release of the Pentium, code-named Tejas, within a year.

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But moving forward with 64-bit technology for its PC chips could also add confusion to Intel's marketing of the Itanium chip, which has received a lukewarm reception. In November, Mr. Otellini said the company was on track to ship 100,000 Itanium microprocessors in 2003. Sales of the Itanium chip have fallen short of expectations since its introduction in 2001, and only recently began to gain traction.

In the meantime, the Prescott is expected to offer performance improvements, like faster speeds and better hyperthreading for performing more than one task at a time.

It is the company's first chip to be made using Intel's new so-called 90-nanometer process, meaning the chips have smaller internal features. That process is expected to help Intel lower manufacturing costs for the chip by 30 percent over time, according to the company. Those savings should lead to lower computer prices for consumers, Mr. Siu said.

Richard F. Doherty, president of the research firm Envisioneering, said it is the chip's advances in cooling that will enable PC manufacturers to produce new systems like multimedia entertainment centers. In that way, the chip fits with Intel's vision of a future in which the PC contains all the features of a television, a DVD player and a video-game machine, replacing many separate home entertainment devices.

"For a lot of people under 30," Mr. Doherty said, "the PC they buy will become their home entertainment system."