



IBM, Sony, Toshiba in Alliance

The three companies will pool their engineering resources to develop advanced chip manufacturing technologies.

January 13, 2006

<http://www.redherring.com/Article.aspx?a=15303&hed=IBM%2C+Sony%2C+Toshiba+in+Alliance§or=Industries&subsector=Computing#>

IBM, Sony, and Toshiba said they'll spend the next five years collaborating on developing chip manufacturing processes for making tiny circuitry on a semiconductor.

The announcement on Thursday also reflected the trend of rival chip and electronics companies that pool their resources in developing cutting-edge technologies. The partnership aims to research ways to pack more and smaller transistors on a silicon, the building block of a chip.

"I believe that in the future, because the cost of developing new devices and process technologies, there will be more consortia," said Dave Cavanaugh, analyst at Semico Research.

IBM, Sony, and Toshiba have banded together to develop new technologies before. They created the celebrated Cell chip, which has nine cores on a piece of silicon and will power Sony's PlayStation 3. The project cost about \$400 million and involved engineers on different continents (see Q&A: IBM's Peter Hofstee).

Now the three companies decide to tackle a different and tough assignment: how to make complex chips with miniscule circuits without running into problems with leaking electrical current or other flaws. The triad plans to focus on developing the 32 nm technology for producing chips.

Accelerated Cycle

"This joint development project will help accelerate the cycle from fundamental research to commercialization based on detailed feasibility studies of potential technologies, device structures, innovative materials, and unique processing tools," said Kenshi Manabe, president of Sony's semiconductor unit.

Right now the most advanced manufacturing technology in use is the 65 nm process. Intel has led the pack in using the 65 nm process and is now making its Core Duo processors for computers.

Each nanometer is a billionth of a meter. The gate of each transistor, where the current flows through, is so small that 100 of those gates could form the diameter of a human red blood cell.

The technical challenge of creating such small circuitry is matched by the high cost of developing and manufacturing chips. Intel, for example, is building a \$3.5-billion factory in Israel that will use the 45 nm process.

But more and more, companies find savings in forming alliances for research and development. For example, Sony has worked with Samsung on developing flat-panel displays.

Toshiba, Hitachi, and Renesas Technology recently announced a joint, manufacturing venture (see 3 Japan Firms Form Chip Pact).

Freescale Semiconductor, STMicroelectronics, and Royal Philips Electronics formed a partnership during 2002 for developing manufacturing technologies. IBM also is working with Advanced Micro Devices on doing similar research.

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