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INTERNATIONAL BUSINESS

INTERNATIONAL BUSINESS; Silicon Valley's Awesome Look at New Sony Toy

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On a giant video screen, a lifelike rubber duck splashed about in a bathtub fleeing from a pursuing submarine. Suddenly the drain opened and both were swept into the resulting whirlpool.

What made this demonstration today by the Sony Corporation notable was that the scene, rendered with almost perfect realism down to each reflection in each ripple in the tub, was not a movie but an interactive video game that signaled a new level of computing power for everyday consumers.

Sony's Playstation II, though still more than a year away from store shelves, is creating a stir here in Silicon Valley because it is the first machine to deliver graphics that until now could be produced only by supercomputers -- and at prices that will put it under Christmas trees in 2000.

Shown for the first time in the United States, to 1,000 software game developers, the machine suggested that the state of the art in computing is moving from the aisles of CompUSA to the shelves of Toys ''R'' Us.

Playstation II, which Sony says it expects to sell for substantially less than $500, is perhaps the most striking example yet of a coming generation of powerful computer processors that are not designed for traditional computers. Instead, they are engineered to concentrate all their considerable power on performing highly specialized tasks.

The new Sony machine will not process text or calculate a budget, but it will take a generation of youngsters to the threshhold of virtual reality.

''I think what you're seeing is the transition from people playing video games to a world where we will create our own fantasies in cyberspace,'' said Larry Smarr, director of the National Center for Supercomputer Applications, in Champaign-Urbana, Ill.

Playstation II was developed by Sony and the Toshiba Corporation in a joint venture that adds up to an estimated $2 billion gamble on the future of consumer electronics. Though the two companies are playing down speculation that their new chip could catapult them into competition with makers of personal computer hardware and software, many opportunities are obviously ahead for a machine that generates graphics at more than twice the speed of the most powerful engineering work stations.

The brain of Playstation II is a microprocessor that the two companies have dubbed the Emotion Engine. It is designed to draw tens of millions of tiny polygons, the building blocks of computer graphics, on a television screen every second. As a result, it renders animated graphics with the realism of the movie ''Toy Story'' but in what is known as ''real time.'' That is, it creates movement, characters and entire environments on the fly in response to the movement of a joystick or other gaming device.

''Sony is clearly riding on a consumer mandate and delivering supercomputer graphics,'' said Richard Doherty, president of Envisioneering, a computer industry consulting firm in Seaford, N.Y. ''People will buy the Playstation II just to get at the chip.''

Sony executives said they intended the name Emotion Engine to convey the hope that game developers would use the chip's power to create virtual worlds rich in subtlety and nuance.

''We're hoping that you will go beyond driving and shooting and killing people,'' Phil Harrison, a vice president at Sony Computer Entertainment, told the developers. ''We are looking for a new generation of software that has the same impact on a person as a great book or a great movie.''

He said the new processor had enough power to begin to convey humanlike motions and abilities, ranging from natural movement and facial expressions to artificial intelligence like the ability to learn and to recognize speech.

The Emotion Engine is the most recent example of a reversal under way in technological development. For decades, the most advanced consumer electronics were technologies that trickled down from the world of supercomputing, the Departments of Defense and Energy and NASA. That process has been turned on its head, mostly by the economics of

the consumer electronics industry, which has evolved from a beneficiary of cutting-edge computer engineering to its driving force.

Since the end of the cold war, increasingly powerful computer products have begun showing up first in consumer applications. For graphics and related multimedia processing, for example, the Emotion Engine is significantly more powerful than the Intel Corporation's newest Pentium III microprocessor and has more than twice the graphics power of the most powerful Silicon Graphics work station, the benchmark for graphics computing power.

Yet, benchmarks and flashy graphics do not guarantee success in a computer. Indeed, Silicon Valley is littered with news releases from companies that promised to shake up the world with ever-faster computers. The vast majority failed to leave the laboratory and ''auger in'' to the market, in local parlance.

The Emotion Engine is unlikely to suffer that fate, if only because of the market muscle behind its developers. Still, production in quantity awaits the completion of a modern semiconductor plant that Sony and Toshiba expect to go on line next year.

What is more, some analysts questioned Sony's announcing Playstation II before it is available. It will arrive on the market later than its main competition, the Sega Dreamcast machine, which was recently introduced in Japan.

Sony executives went to some pains today to assert that their new machine was not a competitor to Wintel, the combination of the Microsoft Corporation's Windows operating system and Intel's Pentium microprocessors that dominates the personal computer industry.

''There are certain things the PC does really well, such as running as a server and displaying Powerpoint slides,'' said Mr. Harrison, the Sony Computer Entertainment executive.

Still, the company has given every indication that it envisions a new computing world that has little to do with the office desktop. In this world, brilliant graphics and mathematics-intensive tasks like voice recognition will matter most. And it is in this world, Mr. Harrison said, that the Emotion Engine will excel.

But it is clear to computer designers that the potential for Sony's computer is enormous because its graphics power will be coupled with high-speed connections to the Internet through cable and satellite links.

While company executives were coy about that possibility, they did announce that the

Playstation II would incorporate ports for the two fastest communications channels available today -- Firewire and the Universal Serial Bus. It is also noteworthy that the machine will ship with the industry-standard slots for connecting peripherals like modems, network cards, hard drives and flash memory to laptop computers. Firewire is evolving as the standard for connecting a new generation of digital video cameras.

These features could make Sony a powerful competitor to Microsoft if software developers begin to abandon the personal computer platform when creating their newest and most advanced applications.

''This machine heralds the merger of film, television and the video game businesses,'' said Stewart A. Halpern, a Wall Street analyst at ING Baring Furman Selz.

Others are already looking to take Playstation II beyond games.

''This is the first credible alternative to the PC for reaching people on the Internet,'' said Carl Malamud, chairman of Invisible Worlds, an Internet software company in Redwood City, Calif.

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