

# Reshaping the business of technology

IBM moves front and center.

By Ed Sperling

Several years ago, when IBM began spreading the word in earnest about its proposed electronics ecosystem, most electronics manufacturers scoffed at the idea. They are no longer scoffing.

IBM has put into motion one of the most fundamental shifts in the history of business, let alone electronics. Big Blue, the company that the US Justice Department once reviled for keeping everyone out of its core market, is proving equally adept at profiting by letting everyone in.

That strategy has worked better than anyone could have hoped. In both market leadership and bottom-line performance, IBM has benefited handsomely from the partnering approach. It now develops chips for all three of the major gaming platforms—the Sony Playstation 3, Microsoft Xbox 360, and Nintendo Wii—as well as the manufacturing processes to build them. It also builds advanced chips for supercomputers and racks of servers that run the world's most advanced data centers, and it runs its own state-of-the-art fab that it uses for both collaborative development and advanced chips for its own system-level products.

Like many other successful business shifts, this one is rooted firmly in the intersection between economics and technology. It simply costs too much to stay on the Moore's Law road map as a single company. Solving problems at 32 nm and beyond is a massive undertaking.

"We made a conscious decision that everyone on this planet has something to bring to the table,"

says Bernard Meyerson, IBM's chief technologist. "Many companies believe in accumulating their capital, but how many companies are sharing their intellectual capital?"

The answer is a growing number, thanks to IBM's foresight. Meyerson says IBM realized the future was in partnering a decade ago, beginning with its open-source software. As for semiconductor technology, "We said we are going to collaboratively create a reservoir of precompetitive talent

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and process capability. Of course, later we may go off and beat each other to death with it in the open market. By working in this fashion, we caught everyone by surprise."

Success also has built more success. In gaming, for example, IBM's success with the Sony Playstation led to contracts with Microsoft and then Nintendo. In the Albany Nanotech Center, IBM's presence helped to draw competitors such as Applied Materials, Tokyo Electron, and ASML into the same development effort, a research-driven 12-in.-process fab that will become IBM's chief development location to 22 nm.

"There was a groundswell here,"

Meyerson says. "In the [electronics] industry, virtually everyone is aboard. Next came the [manufacturing-equipment] vendors. We now have group meetings with both Tokyo Electron and Applied Materials present—each serious competitors. Nonetheless, we all accept that you've got to work together at the leading edge to get the fundamental work done."

Meyerson believes the development model around collaborative innovation will thrive for the foreseeable future—particularly because manufacturers must holistically address many of the power-related problems in information technology, whether due to current leakage in devices or system inefficiency. Meyerson coined the phrase "holistic design" several years ago, referring to need to think about design in the broadest, system-focused terms. At the time, it was largely an IBM-only approach. The next phase of system development will perhaps also include teams from multiple companies working on the same fundamental problems.

Meyerson says giving others broad access to the family jewels also keeps IBM on its toes. "Everyone inside our shop must ultimately compete with the best of breed to maintain their position in the value chain, and that challenge changes the entire culture of an organization to one of sustained leadership," he says.



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