

ITRS Roadmap Dependent on Cash More Than Technology

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SCOTTSDALE, ARIZ. -- Due to the sheer economic cost of a new fab, the issue of staying on the ITRS' roadmap that dictates a new process technology every two years is not a technology problem, according to Wilf Corrigan, chairman of LSI Logic Inc., during a panel session at the annual Semico Summit that was held this week here.

"The industry is very integrated on a worldwide basis in the sense of the long-range planning, so we can look three generations ahead – we know pretty much what the technology is going to be – and the limitation is really about how to economically build the next generation fab," he said.

Walden Rhines, chairman and CEO of Mentor Graphics Corp. observed, "The thing I find unique, in my whole history in the semiconductor industry [which spans at least three decades], I cannot think of another time when we could see our way clear to three generations of lithography that was well-defined."

As a bit of history, Corrigan reminded that in the 1960s and 1970s, U.S. semiconductor companies were multi-divisional and had succession plans in place for manufacturing technology, but over the last several years, semiconductor providers have all become, "tall, thin men" all focused on CMOS. "Most companies [today] don't have a linear division to hand down the factory to after three years, or they don't have a diode division to hand the factory to after six or seven years, and so on," he explained.

So, if you've only got those two years and then you've got to get the next fab up, you've got to figure what to do with the current factory that's still perfectly good at two years old, because you want to be on to the next technology, he continued.

"And of course the answer to that is the foundry," Corrigan said.

With the emergence of the consumer business as a major player which generally runs "n-1" technology, i.e., not the very latest process node, suddenly, "you've got a big sump that can take that excess capacity going forward and that's going to drive ever-lower-priced consumer products," he noted.

We're in a changing sort of period with the only limitation on technology for the next 10 years or so being which companies have the money to move to the latest manufacturing process generation, not the technology itself, Corrigan added.

In terms of the technological aspect, Rhines concluded that what will drive the ITRS' two year roadmap is whether the demand will be present for the characteristics of next generation lithography, given the leakage current, the cost of capital and what the relative cost per wafer will be – more so than the ability to print lines that are smaller.