



Collaboration, new technologies will play key role in semi manufacturing

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The massive challenge facing the electronics industry from consumers' demands can be solved with new technologies and stepped-up collaboration efforts.

That was among the prevailing opinions from industry leaders at the Semico Summit this week during a session on how manufacturing will sustain Moore's Law. There is no doubt that the industry faces myriad challenges in the next decade, but many can be conquered.

"Scaling is getting more difficult and more costly, and we see changes in architectures now," said John Kispert, president and COO of KLA-Tencor, a supplier of yield enhancement equipment to IC manufacturing lines. "Multi core is the IP of choice to double the performance. With these solutions comes a cost, and that's what we're struggling with right now," he added.

Kispert added that cost is the "new brick wall" in terms of innovation, and that companies like KLA-Tencor are looking to the capital equipment industry for help. The solution for the equipment companies, he said, is innovation, and total productivity across the fab.

"Innovation through collaboration is key for us," Kispert said.

Rick Cassidy, president of Taiwan Semiconductor Manufacturing Co. (TSMC) North America, echoed the importance of collaboration as a key factor. He pointed out that the number of technology players has declined and the number of EDA companies has grown dramatically. "Partnership is really what has to happen," he said.

"IC makers, equipment makers, material makers—we have to work more closely together," added Dr. Andre-Jacques Auberton-Herve, president and CEO of Soitec, a manufacturer and supplier of SOI wafers.

Cassidy added, "I think innovation is with us." TSMC operates two 300mm wafer fabs, five 8-inch wafer fabs, and one 6-inch wafer fab. "Time to market and time to money is absolutely critical," he added.

"Gigafabs will provide an opportunity for low risk," Cassidy said. "With a gigafab, you have a nice strong performance. On many dimensions it works, but most important is the cost level. This thing is huge but it's efficient."

There's no doubt about it: the electronics industry is in the middle of the consumer revolution right now, where adoption rates continue to get shorter and consumers want technology that integrates into their lives without being in their faces.

"Moore's Law is alive and well; there's no doubt about it," Cassidy says.

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