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Analyst predicts IC slowdown, revitalization

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SANTA CLARA, Calif. — New, "disruptive" technologies and strong global demand will drive the semiconductor industry through 2010, according to Jim Feldhan, president of market research firm Semico. But Feldhan told attendees of Mentor Graphics' EDA Tech Forum here to expect a slowdown in IC revenue growth in 2007.

Feldhan said Semico is projecting that IC revenues will increase 11.6 percent in 2006 and 7 percent in 2007. Most of the 2007 growth will come from memories, he said. The 2007 figure is actually an increase from [more pessimistic forecasts](#) released by Semico earlier in the year, but consistent with a revised forecast that Semico [issued last month](#).

Feldhan said that the semiconductor market has become "atypical." While computing demand is strong and capacity utilization is high, prices are soft, and "there's a fear the market is fragile," he said. He noted that many dot-com survivors are running companies, that companies compete on price, and many are willing to sacrifice profits for market share.

"End markets will be soft in the first half of 2007," Feldhan said. "There will be more capacity. It all boils down to a slowdown in the first half of 2007."

The good news, according to Feldhan, is that alternative energy is a booming market, there are more consumer end products, adoption rates for products are becoming faster, more geographical regions are developing, and "innovative" portable consumer products are emerging. China, in particular, is becoming an IC powerhouse, Feldhan said, accounting for some 23 percent of the 2006 semiconductor market, which is expected to total \$254 billion.

Still, the global economic picture is not encouraging. Feldhan said Semico sees rising oil prices, declining housing prices, increasing global competition, a ballooning U.S. deficit, and geopolitical uncertainties as impediments to end market demand. Market share wars will drive average selling prices (ASPs) down in 2007, he said.

IC equipment sales are booming, and capital expenditures may be up 20 percent this year, Feldhan said. This will add to capacity as fabs ramp up for production. Feldhan said, however, that foundry capacity utilization, which is over 100 percent today for leading-edge processes, will decline to around 80 percent in early 2007. But it will reach the 90 percent range by the end of 2007, he said, setting the stage for a good 2008 and 2009.

Key driving markets include desktops and servers, a mature market with slow growth; notebooks, which are expected to rival the desktop market by 2010; and cell phones, which may be bigger than the desktop market by that date. Digital cameras, video game consoles, and handheld

entertainment will contribute to the mix.

But the real excitement, Feldhan said, will come from new "disruptive technologies" that will drive the semiconductor market. Among these is the virtual keyboard, which will require a visor display or a projection display. Micro fuel cells will become widely available by 2008, he said. And "brain fingers" that let quadriplegics run computers could also give pilots faster reaction times.

In the automotive industry, Feldhan said, there's excitement about hybrids and about other approaches to saving gas, including "displacement on demand," flex fuel vehicles, tire pressure monitors, and electronic valves. He said that automotive entertainment and navigation will also be hot markets.

Another key area, Feldhan said, is home healthcare, which will become important as populations age in the U.S., Japan and Europe. Smart phones, he noted, are incorporating graphics, photos, videos, and possibly TV. Feldhan also predicted strong growth for embedded control, consumer electronics, and DSPs.

Feldhan said ASIC design starts will grow from 2006 to 2008. These figures, it should be noted, include PLDs and FPGAs. Among the new device categories is the "performance system-on-chip" (SoC), which will average 30 to 40 million gates over the next few years and will fuel growth in the consumer and computer sectors.

The [EDA Tech Forum](#) is a one-day event that occurs at various locations around the world.