



EE Times: Semi News New cycle seen in changing foundry sector

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(05/16/2006 6:06 PM EDT)
URL: <http://www.eetimes.com/showArticle.jhtml?articleID=187203747>

SAN JOSE, Calif. — Amid a new and strong growth cycle, the silicon foundry industry is rapidly changing and seeing a widening gap between the “haves” and “have nots” in the marketplace. First, on the business front, the worldwide foundry industry is expected to bounce back and grow in 2006 and 2007 after a poor campaign in 2005.

The overall foundry industry declined by 2.2 percent in 2005, but the business is expected to grow by 19.8 percent in 2006, according to a new forecast from Gartner Inc. In 2007, the foundry market is expected to slip somewhat, but the industry is still projected to grow by 18.2 percent, according to the research firm.

Semico Research Corp. has a slightly different view. In 2006, the foundry industry is expected to grow by 23.5 percent in terms of revenue, said Joanne Itow, an analyst with Semico. Overall foundry wafer demand is projected to increase by 23 percent, Itow said.

“We also think ‘07 will be a good year,” she said. The foundry industry is expected to grow by 32 percent and 21 percent in terms of revenues and wafer demand, respectively, she added.

On the other hand, the foundry market is changing, causing some uncertainty in the sector. For example, the foundry landscape now consists of the “Big Four” providers — Chartered, SMIC, TSMC and UMC — as well as a plethora of other pure-play and IDM competitors.

Several major companies are now expanding their efforts in the foundry arena, namely Germany’s Infineon Technologies AG and Korea’s Samsung Electronics Co. Ltd.

It’s still unclear what impact Infineon and Samsung will have in the foundry market. Many believe Infineon will not be a big factor in the future, according to analysts.

Samsung presents the biggest threat to displace Chartered, SMIC and perhaps even UMC, according to analysts. The memory giant has deep pockets — and an empty logic fab — while Chartered, SMIC and even UMC struggle to make money in the sector.

And still to be seen, however, is if or when the foundry industry will see the long-awaited shakeout, in which fewer players will participate in the market.

The smaller and weaker players are especially in limbo. “A lot of foundries are saying: ‘What’s the next phase? Some of the foundries are looking at their options,” Itow said.

What’s more, the gap between the “haves” and “have nots” is growing in terms of money, resources and technology. Only a small and select group of pure-play and IDM foundries are able to afford and build 300-mm fabs. The same elite group can also afford to develop 90- and 65-nm processes.

The remaining competitors must position themselves as trailing-edge or specialty-process foundries. That’s not a bad position to be in for some — if one can execute and deliver products to customers. Easier said than done, however.

But going forward, there are some serious questions about the entire foundry industry, including the big players. Is there room enough for everyone? It’s doubtful.

And given the technical hurdles, it’s unclear how many foundry players can actually afford to develop 45-nm processes and below, said Robert Lineback, an analyst with IC Insights Inc.

All chip makers must contend with newfangled immersion lithography and a wave of new materials, such as high-k, metal gates, ultra low-k, among others.

“The question is: Can the foundries do it? And do their customers even want that technology,” Lineback added.