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Execs: IC makers need to get smart

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SAN JOSE, Calif. -- What are the new growth drivers--or next big things--in semiconductors?

At the Semico Outlook Conference here this week, industry executives listed several emerging drivers or "technology for the masses." This includes data analytics, e-book readers, energy, LEDs, medical, mobility, among others.

Among the drivers, which also has a moral imperative attached to the equation, includes energy and power management, said Jack Harding, chairman and chief executive of eSilicon Corp. "I believe we're in the age of power consumption," Harding said at the Semico Outlook Conference.

Energy and power management are broad fields that go in several different directions. Perhaps the next big thing is the smart grid, which promises to harness the growing energy problem. And more breakthroughs are needed to enable smart grid technology.

"We are at a point of transition," said Bart Ladd, general manager of account development and applications at NEC Electronics America Inc., at the event. "We need to come up with better, faster, cheaper, and lower power products. Not only is this good for all of us, it's good for business too."

At the event, Jay Cormier, vice president and general manager of the Energy Measurement & Communications group at Teridian Semiconductor Inc., said the next big wave is metering and sub-metering in the home and enterprise.

It's no wonder. "Total electricity consumption in the U.S. is expected to grow 30 percent to over 5,000 billion KWh in 2030," Cormier warned. "Conversely, new planned generation, including from renewables, is expected to only grow 22 percent during this same period."

According the U.S. Department of Energy, 70 percent of transmission lines and transformers in the U.S. are now more than 25 years old and are becoming increasingly unreliable.

"Multiple studies show a potential 10-15 percent reduction in electricity consumption from implementation of the smart grid, which would lead to an estimated \$40 billion of opex savings per year in the U.S. and \$200 billion worldwide over the long term," he said.

The smart grid is said to save energy, reduce costs and increase reliability. The other key is the smart meter. Today, Ferris wheel style meters, which have been used for more than 50 years, are being replaced by smart meters. Smart meters can do much more, from communication links between the home and utility, to time of use measurements, remote connectivity and even failure analysis.

Teridian (Irvine, Calif.) recently announced that it has begun sampling its fourth generation residential smart metering integrated circuits. The new product family includes the 71M6541x and 71M6xx1 and features digitally isolated current sensors based on the company's proprietary MicroDAA isolation technology.

The new 71M6541x, as a stand-alone meter system-on-chip (SoC) for single element meters, offers significantly reduced

power consumption and enhanced accuracy. The 71M6xx1 isolated sensor IC eliminates current transformer and associated copper wiring in 2-element residential meters, with up to class 0.2 accuracy (ANSI 200A). The result is up to 25 percent reduction in bill of materials (BOM) costs for residential applications.

To date, Teridian's metering devices are in use by more than 50 metering manufacturers and on more than 100 metering platforms.

In 2005, private equity firm Golden Gate Capital, in partnership with the semiconductor management team of TDK, acquired the Irvine, Calif.-based company from TDK-USA, a subsidiary of the Japan-based TDK Corp., for an undisclosed amount.

The mixed-signal semiconductor supplier, TDK Semiconductor Corp., changed its name to Teridian Semiconductor at the time.

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