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CE product demand driving tighter collaboration between CE, IC players, KPMG reports

By Ann Steffora Mutschler, Senior Editor -- 8/19/2008

Electronic Business

The past few years has seen the demand for consumer electronics (CE) products surpass the demand for PCs as global consumers benefit from technological advances in products including TVs, wireless handsets, and automotive applications. This has resulted in a boom for CE manufacturers and new growth opportunities for semiconductor manufacturers that traditionally focused on PC or communications markets.

This increasing demand is putting pressure on semiconductor suppliers to work more closely with CE producers to improve design processes and bring products to market more quickly. At the same time, CE producers are designing and developing their products faster than IC suppliers can design the necessary chips, indicating that the ongoing success of the CE industry is highly dependent on the continued coordination and improved speed to market of the relationship between CE and semiconductor players.

Advisory firm **KPMG LLP**, with the **Global Semiconductor Alliance (GSA)** and the **Consumer Electronics Association (CEA)** examined these and other related issues in a survey conducted early this year of more than 350 senior engineering executives at CE and IC manufacturers, and in its subsequent report, “The consumer electronics boom: How semiconductor and consumer electronics companies can improve cost, time-to-market and product quality.”

Ron Steger (pictured left), partner in charge of KPMG’s global semiconductor practice commented about the need for this analysis, “Over the past several years, our client base has been reacting to a change in their demand signals with many of them driven by either computing apps, automotive apps or industrial apps and traditional wireline communications. There has been a fundamental shift in their customer base to consumer electronics. Part of that is gaming, part of

that are televisions, part of that is wireless communications devices, iPods and the like, and they are struggling with the difference in the customer base. First the designs, if you are the chipmaker for the antilock braking system for the Ford Mustang, that product probably has a 7-year run and the design cycle is pretty long. The same thing happens if you are in the airbag in a Cadillac Escalade or if you are designed into a series of Cisco servers – those products have pretty long lifecycles and long design cycles, versus dealing with someone like Apple on the iPhone where the design cycle is much shorter, the amount of semiconductor content from a dollar standpoint is much lower and the product has generally a much shorter lifespan."

Among the key findings: approximately two-thirds of IC respondents currently derive 60% of their revenue from supplies for consumer products. In 5 years, this group expects to derive 80% of its revenue from these consumer products – a 33% jump, KPMG noted.

Another big finding from the survey, Steger said, is that "there is almost a six month difference between the design cycle time that a semiconductor company says it needs – which is somewhere between 18 and 21 months – and the time that a CE company would like – 15 to 18 months, so there is a fundamental difference in the time a semi company thinks it needs to produce a chip from cradle to grave and what the CE manufacturer requires. That has created some delays in products launches as semiconductor companies have just been struggling to be as fleet of foot as the CE companies would like."

Further, he said, "generally semiconductor companies don't want to get involved until the initial design phase has been completed. CE companies want them much earlier in the process. They want them at ground one when they are doing their initial design specs. All of that is creating some angst for the semiconductor industry and some angst for the CE industry as well."

"When you talk to the CE companies in terms of their biggest priority out of their semiconductor suppliers, cost was number two. Their biggest issue is time-to-market. If they think they have the new hot product and they've got a three month advantage on their major competitor, it's much more important to get to market first because of how quickly the ASPs declines in a CE company. So for them, it's all time," Steger observed.

Steger admits that researchers were "surprised that cost was not number one because obviously this has not been a terrific year for the semiconductor industry. In terms of the growth rate in the

industry, it started out being forecast at something in the high single digits and is now down to maybe 2-1/2 or 3%. And as the growth pattern slows in CE components, the semiconductor content is, from a dollar standpoint, $3 to $20 on a $200 device. If you look at what's in a car, semiconductor content could easily be $1,000 if not more between GPS, antilock brakes, tire pressure gauges that are embedded in tires, so they are getting lower margins, they are getting lower dollar per unit and they need to be quicker in terms of their design cycles."

Challenges facing semiconductor suppliers in CE

The growing reliance on CE sales is increasing the challenge for semiconductor companies to design, manufacture and deliver products to market faster with the typical product development cycle for CE devices running about 6 months shorter than the IC suppliers' cycle to deliver the underlying circuitry. The gap is likely to widen as CE manufacturers step up competition on price and strive to be first to market to ensure profitability, the company believes.

In addition, KPMG found that CE manufacturers and IC companies must also contend with a lack of consistent methodology; accounting for Moore's Law versus the long tail; as well as profits and the value chain.

Steger pointed out that this is a very different scenario from the days of the PC, when the leading IC suppliers drove the development of faster and more reliable computing.

In the consumer market, the time-to-market gap puts the slower-paced IC suppliers at a disadvantage to the CE manufacturers that are driving for speed, which means the value or profits will flow to the CE manufacturers and away from the IC suppliers unless the IC suppliers eliminate the time-to-market gap and drive the development cycle to be as short as that of the CE manufacturers.

"As we discovered in our annual global survey of semiconductor manufacturers, there are already significant pressures on the semiconductor industry. Despite increased chip production, the price of chips has been falling precipitously, eating into the profit margins of IC manufacturers and forcing them to seek ways to cut costs as they maintain production," Steger observed.

However, speeding the process gives rise to challenges since greater feature integration typically results in longer design cycles and more expensive production processes, he pointed out.

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Time and money are top issues

As noted above, when respondents were asked about the top issues they faced in generating continued revenue and profit, timeliness and cost were the number one and number two issues facing both CE and IC respondents. Faced with the pressure to fulfill consumer demand, especially during the holiday buying season, both IC and CE producers cite getting the product to market on time as their number one issue – with IC suppliers (at 41%) ranking it slightly higher than CE producers (at 35%).

KPMG believes that in order for CE and IC manufacturers to manage the rising demand for CE products, they must find common ground on their issues and determine the best ways to coordinate and collaborate on production.

A barrier to this however, is that CE and IC companies approach the development aspect differently: CE manufacturers, which are closer to the consumer and distribution channels, want flexibility and approach product development opportunistically, looking for earlier involvement and faster development from IC suppliers to speed products to market.

On the other hand, KPMG observed that IC suppliers work with elaborate design and expensive production processes and therefore look to lock in the design as quickly as possible for best manufacturability, aiming to reduce costs through the volume of the learning curve, not necessarily by being first to market.

With that said, CE manufacturers must involve IC makers much earlier in the design process and educate them as to which system elements are fixed and which are flexible, as well as think two to three generations out and work with IC suppliers to develop the appropriate semiconductor platforms.

For IC suppliers, KPMG advises that they must work more closely with their customers' customer (the consumer) to identify crucial system needs sooner.

This type of collaboration should result in CE manufacturers experiencing faster time-to-market and greater profitability, and IC suppliers will not be relegated to supplying commodity products and can regain profits further up the value chain, KPMG concluded.

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