



PRINT Back Back twice

## Unrealistic consumer expectations a reality for IC designers, explains ARC

Esther Lam, DIGITIMES, Hsinchu [Thursday 5 June 2008]

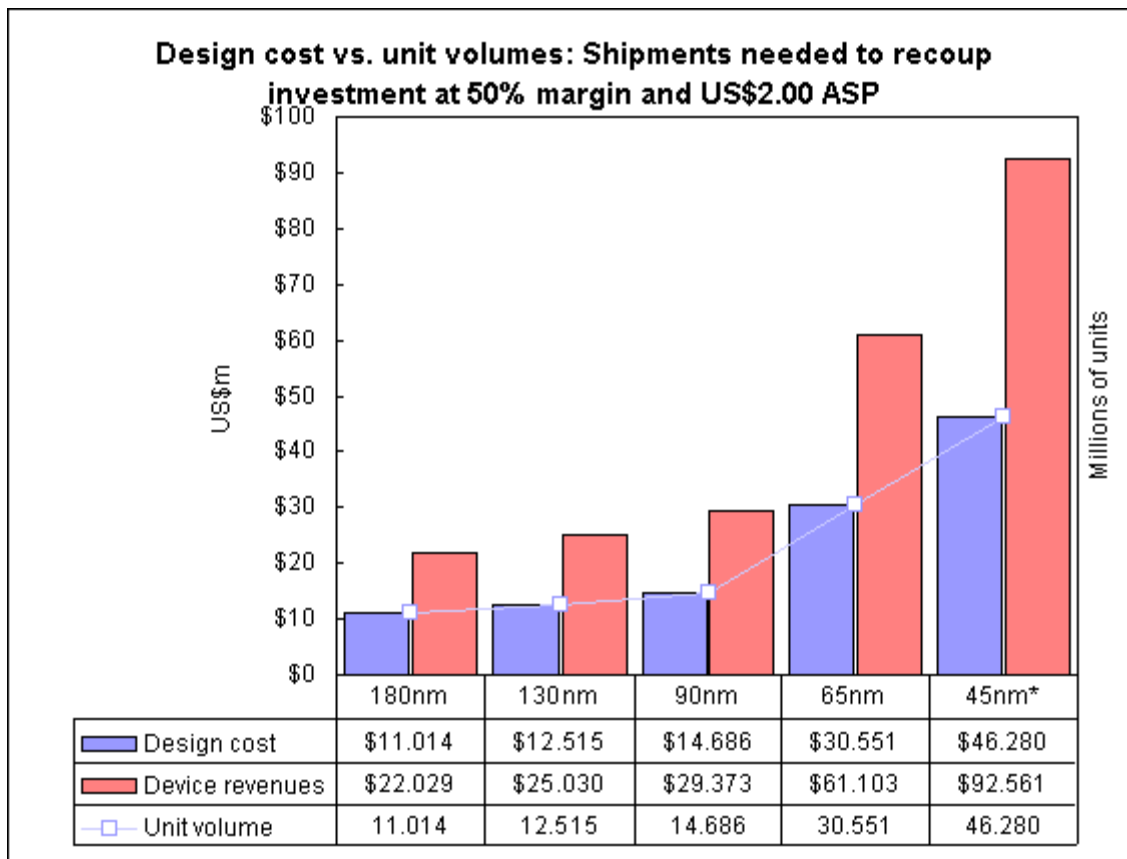
While semiconductor companies are being availed to substantial new business opportunities in the consumer electronics (CE) industry, they are also faced with the growing challenge of coping with the demands of an increasingly demanding marketplace, according to Carl Schlachte, CEO and president of intellectual property (IP) and multimedia system supplier ARC International, at a recent ConfigCon technology forum in Hsinchu, Taiwan.

Focus of semiconductor design has shifted from PCs to consumer electronics (CE), and that implies that chip designers are having to add new "elements" to meet the changing landscape, said ARC sales director of Greater China Serene Shaw. The landscape has changed because of the arrival of more sources of content, new content distribution methods (e.g. YouTube, Google) and more form-factors used in receiving such content (e.g. TVs, cars, MP3 players), she explained. As consumers have taken a more active role in creating and distributing multimedia content - as opposed to only receiving it - system makers are facing new challenges in terms of expectations of mobility and portability, she commented.

This shift presents chipmakers with even more challenges when designing devices, and expectations from consumers have increased as well. Consumers want more features in their products, which has led to the trend of system-on-chip (SoC) designs in the consumer IC design segment. However, consumers also have no interest in a system with a complicated design; In other words, while consumers want devices to incorporate more features, they also want the system makers to "keep it simple."

Difficulties can arise for IC designers when they look to address this trend due to the wide array of content formats that need to be supported in a various form factors, especially when consumers always want a device that should naturally fit all formats and form factors. And of course, the user experience will be heavily influenced by the quality of the chip in the systems that are executing their specific functions, whether it is content playback or wireless LAN (WLAN) connectivity. These are all issues that are sources of challenges for chip designers.

Moreover, production of semiconductors is never easy to begin with. In general, an IC that is designed under 45nm geometry costs US\$50 million, meaning about 45 million chips have to be shipped for a company to break even on the project, Schlachte cited a Semico Research estimate as saying. The cost challenge has also highlighted the importance of designing an IC that can fit multiple markets, he said.



Source: Semico Research

Another issue facing chip designers is the fact that consumers are not patient. Schlachte estimates that it usually takes 18 months from a system-on-chip (SoC) design to move to tape-out stage, but customers always want that time to be faster. What an IC designer has to consider under this scenario are ways to enhance user experience and profitability and accelerate its time-to-market schedule, Schlachte concluded.

Although pursuit for a speedy time-to-market schedule has long been a fundamental design principle for semiconductor companies, this trend is growing more obvious as the market cycles for CE devices shorten.

For ARC itself, its approach to solve, or meet, these challenges has been to solicit partnership with leading players in the market. ARC and Intel forged a licensing agreement for wireless broadband in September 2007. And later in February 2008, the company announced the acquisition of audio enhancement technology supplier, Sonic Focus. Carl reiterated that these companies are extremely important for ARC in regards to providing an enhanced user experience for consumers.

To conclude, Carl pointed out that semiconductor companies have to adopt to new "reality" when designing chips from scratch. Even when they understand the new realities of designing chips for the CE market, there is not guarantee of success, he noted.

But when success does happen, it can be extremely profitable, with Schlachte referring to the success of the Apple iPhone, while noting that the bill-of-materials (BOM) cost for the iPhone processor (the 8GB iPhone version) is about US\$25.



*ARC CEO and president Carl Schlachte explains the magic equation behind Apple iPhone  
Photo: CJ Liu, DIGITIMES, May 2008*

**Related stories:**

iSuppli: Wireless semiconductors outgrow overall chip market in 2007 (May 19)

Global chip and equipment markets slow down in 2008 (Apr 10)

Excess semiconductor inventories decline revealing market weakness, says iSuppli (Apr 2)

iSuppli: Can the semiconductor market regain its momentum in 2008? (Mar 6)

iPod touch is more than an iPhone without a phone, says iSuppli (Dec 19)

© DIGITIMES Inc. All rights reserved.

Please do not republish, publicly broadcast or publicly transmit content from this website without written permission from DIGITIMES Inc. Please [contact us](#) if you have any questions.