



BY RON WILSON, EXECUTIVE EDITOR

Where is EDA going now?

Is this the case of the vanishing electronic-design-automation industry? Early last month, the annual Design Automation Conference opened its doors to what was, by all accounts, a smaller-than-hoped-for crowd. Some vendors—notably Cadence Design Systems—were absent from the show floor, and many others were in downsized booths. There was talk that DAC had to change. At press time, Cadence had just announced an unsolicited bid for Mentor Graphics,

which Mentor then promptly dismissed as too small and inadvisable for regulatory reasons. There is talk of consolidation among the three pillars of the EDA industry—Cadence, Mentor, and Synopsys—indicating the final maturing of the market.

But what is really going on? Is EDA going away? Will all chip-design tools become legacy tools? Will designers turn to open-source software? Will foundries have to create tool chains on their own to sell wafers? I think not. Rather, some important changes have been altering the EDA landscape for years, and these changes—in the geographic composition of the chip-design community and in the nature of the chip-design process—are now impossible to conceal. They will also profoundly alter the nature of the EDA industry without in any way compromising its fundamental role in the electronics industry.

First, there is the geographic element. Ever since Texas Instruments and a few other pioneers began a decade ago creating design centers in India and Taiwan, the geographic center of chip-design activity has been shifting west, across the Pacific. Industry opinion has lagged in its aware-

ness of this shift: Many people think of advanced ICs as primarily designed in Austin, TX; Silicon Valley; or upstate New York. But many chip-design teams depend heavily on design centers in India, in Taiwan, or in mainland China. And that is where the new seats for EDA tools are.

This migration has not reached its endpoint. These Asian countries are no longer merely job shops for US or European design teams. Increasingly, whole, leading-edge fabless-chip-design teams work in Taiwan in the shadow of the giant foundries. You can find them in both India and mainland China. Estimates suggest that hundreds of fabless-chip houses in China today are doing active design work. EDA is alive and well, and it has a growing customer base. But that growth is not in North America, and it does not depend on a legacy-EDA-business model.

This fact brings up the other change: the nature of the chip-design process. In the supposed glory days of the EDA industry, EDA software had the same kind of leverage as, say, corporate-infrastructure software or PC software: You write it once, a million people buy it, and you have wonder-

ful margins. But increasingly, EDA is not a merchant business; it is, to the horror of investors, a service business. EDA vendors don't sell stuff to their leading customers; they form multi-way partnerships with their customers, with leading IP (intellectual-property) vendors, and with foundries. Vendors are still struggling to adjust their business models to this different reality on the ground, and that struggle by itself is responsible for much of the turmoil in the industry.

Without the leverage of an off-the-shelf software model, EDA vendors can't show huge returns on investment from license sales. It looks as if the roof is falling in. But other industries have gone through this transition. Look at IBM, which used to generate huge returns from manufacturing mainframe hardware. It now does very well, thank you, deriving much of its earnings from services contracts. And as I write this editorial, legendarily hardware-oriented computer maker Hewlett-Packard is trying to acquire IT-services-vendor EDS (Electronic Data Systems). It is possible to have strong earnings growth based on services. EDA will learn how to do it, as, by the way, will the silicon-IP business.

Is EDA maturing? No. It is entering a new growth phase, marked by a rapidly expanding customer base and even greater demands for innovation. What has ceased to grow is the legacy-business model that worked only in another time, with customers in another place. Change hurts, but change, if you understand it, can be excellent. **EDN**

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