IC Vendors’ Test-Cost Goals: the Impossible Takes a Little Longer

Dan Strassberg
EDN Magazine
275 Washington St,
Newton, MA 02458-1630
ednstrassberg@cahners.com

The architecture of semiconductor ATE systems has rarely undergone radical, “overnight” changes. No doubt, many in the semiconductor industry see this situation as an indication that ATE manufacturers are interested in preserving the status quo, wherein, ATE sales represent a continually increasing percentage of IC revenues. Given the dizzying rate of increases in IC speed and complexity, however, you can make a good case that test-equipment cost is coming down, provided that you judge that cost by a metric that recognizes the increases in clock speeds and the number of gates per chip.

In addition, the nature of ATE engineering, which deals heavily with problems in the analog domain, invites a high degree of skepticism toward supposed radical new approaches. Moreover, over the years, few revolutionary approaches have lived up to the rhetoric of their advocates.

Semiconductor-industry moguls suggest that if the current crop of ATE vendors can’t come up with radical approaches to reducing ATE costs, IC companies will find another group of vendors that can develop the needed new approaches. I do not believe that the ATE vendors are incompetent, complacent, or ultra-conservative, or that they are operating--to their customers’ detriment--out of unjustifiable self interest. Ever since I first became part of the IC ATE industry almost a quarter century ago, I have known the relationship between ATE companies and IC companies to be adversarial. Perhaps such an adversarial relationship is necessary to keep the ATE vendors on their toes.

I believe, however, that the IC manufacturers will eventually realize that their push for revolutionary advances is not going to produce anything like the desired rate of cost reduction in ATE. Therefore, the IC manufacturers and their customers will sooner-or-later realize that the rate of decrease in cost per MFLOPS (or whatever IC-performance metric you choose) must slow down. This decline in the rate of cost reduction may limit semiconductor-industry growth. But the cost reductions will come to those who can wait. As goes a saying I first heard during World War II, “the difficult we do immediately; the impossible takes a little longer.”