Living in Interesting Times

Over the past quarter century, the field of design technology for electronic systems has bumped its way along through a number of major transitions—from mostly bipolar to mostly CMOS design, from SSI to ULSI, from “mils” to “sub-micron”, from “Please don’t try to automate that!”, to “Please! Automate that”, from mainframe, batch-oriented, stand-alone environments to interactive “personal minicomputers” and the personal computers of today.

Each of these transitions has brought with it both opportunity and danger—even extinction—for those of us in both industry and academia trying to predict or follow the many twists and turns. Somehow, the field of design automation seems to shudder along, taking two steps forward for every one step backward. Groups which have successfully predicted the change and have led the transition have prospered, groups which have organized themselves to adapt have survived and have occasionally even made it back to a leadership role, and the rest have simply disappeared.

As a discipline and as an industry, we are poised on the brink of another major transition, a transition triggered by the communications revolution occurring about us, but a transition driven by many other factors as well. Five years from now our industry will do its business in a radically different way as the relationships which exist today among users of design technology, design technology developers, component suppliers, and manufacturers of integrated electronic circuits and systems will have broken and been re-forged into a very different shape. The overall architectures of our design systems will have changed as radically as the transition from batch to interactive systems and we will be beginning to apply a new class of user input-output devices to our design problems.

No matter how these events unfold, in a world of ever-increasing complexity, a world where every human being is becoming increasingly dependent on electronic systems, and a world where the increasing rate of change in the marketplace continues to drive the electronics industry, it is clear that the role of design, and so the role of design technology, will become increasingly important, broadening our markets and our opportunities. No matter what, the times are bound to remain interesting!