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Embrace the Changes Occurring in Society and Technology

Gary Breed
Editorial Director



The title above may sound like the deep thoughts of a philosopher, but it's really a simple message based on history—change is inevitable, and we must deal with it. In my January column, I noted some of the changes we are now experiencing, and how they affect the high frequency engineering community—social networking, near-ubiquitous computer simulation, educational challenges, and environmental concerns.

On this last topic, the printed version of *High Frequency Electronics* is now printed on paper that is certified by an industry association that promotes sustainable forestry practices such as managed tree farms and maximum use of recycled material, along with “chain of custody” monitoring of the entire process through supply, manufacturing and distribution. The small extra cost of certified paper is a worthy investment in environmentally responsible publishing.

Of course, using no paper at all is a possibility in the future. This magazine has been available electronically since it began publication in 2002, and our Online Edition has steadily grown over the years. But the present reality is that only about 8 percent of our subscribers choose the digital format. Many in that group also want the printed copy; they just use the digital version to get an immediate preview of each issue. So far, we have chosen to make our Online Edition available without restriction, and our Web site statistics confirm that there are many non-subscriber downloads, since the total is more than twice the number of digital subscribers.

We are also looking at other “new media” devices like e-readers, pad computers and smartphones. We have received only a few inquiries about our plans, but we are trying to understand how engineers are using these electronic devices for both personal and professional communications. Similarly, we are monitoring the use of social media among engineers. There are no clear patterns right now, but we want to be ready to provide useful information using whatever devices and delivery routes our readers prefer. As always, we value your opinions and appreciate any comments or suggestions on how we can help you get the information you need.

The Engineer's Changing Work Environment

In my 40+ year career as an engineer and editor, it has been fascinating to watch the way engineers go about their work. When I began, there were two main styles: working on one small piece of a big project at a large company, or working on a wide range of tasks on a smaller project at a small company. Often, it was difficult for a new graduate to decide between a large company's potential for training, advancement and career development; and the flexibility, but less-certain advancement potential, of a job at a small company.

Today, the choices are very different. Engineers at large companies might work in a small design center, or even at home, instead of being lost in a field of cubicles. Small companies are leveraging contract manufacturing and fables-

IC design to create products rivaling those of a big company. In either case, the engineers may be collaborating with many colleagues around the world.

The engineer's job has paralleled changes in our personal lives. We are surrounded with technology that is far more complex than the things we had just 15 or 20 years ago. But before we can take advantage of their capabilities, we must invest in some up-front time and study to learn how to use them.

For engineers, the advancement of design and manufacturing technology has dramatically increased the need for specialization, to provide the detailed understanding required for new processes and methods. In the past, a design team was a couple engineers, a technician and a draftsman (CAD/CAM operator). Now, a design team may have specialists in the RF front

end, the power amplifier, DSP back-end, controller and display, packaging, power management, etc. And that's without the supporting personnel in documentation and design-for-manufacturing.

These big changes in engineering design—large-group collaboration, greater specialization, and the astonishing ability to work with a worldwide geographical distribution of people and manufacturing—are the changes we see now. We need to embrace these changes, and understand that something else will come along in the future to change things again.

Send me your observations and comments about changes in the way engineers work. Have they affected you in a negative way, or are they making your work more interesting and exciting?