New Fellow loves solving customer problems

The Chief Engineer position, previously the top spot in Tektronix' engineering career path, has been restructured in an effort to link technology development directly with customer needs (Tekweek, June 26). In addition, the title was changed from "Chief" to "Fellow," a designation more commonly used in the industry for such positions. Existing Chiefs have been given a one-year assignment as Fellows. Bruce Penney is the first addition to the ranks of Tektronix Fellows under the new program.

Bruce says:

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"Before I became a Tektronix employee, I was a Tektronix customer."

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"When we see an opportunity, we start designing solutions almost immediately."

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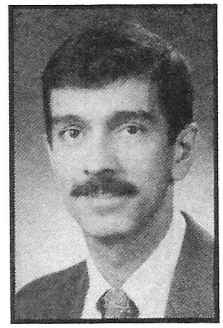
"By sharing our ideas, we're not crippled by our individual limitations; instead, we are the sum of all our skills."

Bruce Penney, Principal Engineer in the Television Systems Group, has been named a Tektronix Fellow, a position replacing Chief Engineer as the company's premier engineering designation. In 1990 he was selected as a Fellow of the Society of Motion Picture and Television Engineers (SMPTE).

Bruce holds 23 TV measurement and signal processing patents, with eight more pending. He's been involved in the design and development of more than 30 Television Division products, including the pivotal 110-S Video Synchronizer, Tektronix' first entry in the emerging digital TV market. His work on the industry's first 10-bit ADC (analog/digital converter) and 12-bit DAC (digital/analog converter) contributed to the development of other Tektronix products — oscilloscopes and digitizers.

TV Division GM Dan Castles believes Bruce has played a significant role in shaping and implementing the division's strategic direction. "Television Division has sold millions of dollars in high margin products," Dan says, "and Bruce's knowledge and motivation were forces behind their creation. He serves as a catalyst in solving perplexing new problems, and that has enhanced TV's ability to rapidly bring out new products." Dan notes that Bruce is especially valued for bringing the customer's perspective into product planning and for sharing his knowledge with other engineers.



In this interview, Bruce talks about his responsibilities as a Tektronix Fellow and offers his views on what it will take for Tektronix to increase its share of marketplace victories.

What do you see as your responsibilities as a Tektronix Fellow?

The task I've set for myself is to help provide product direction, and to guide engineers in becoming more aggressive in tackling new ideas. My selection as a Tektronix Fellow isn't because of my technical accomplishment. There are many company engineers better than me. Perhaps it's because I love solving problems for customers. I have a few hobbies, and working here is one of them.

How does the customer fit into your responsibilities?

The customer is number one. If there's one advantage I bring to my job, it's that

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Bruce —

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before I became a Tektronix employee I was a Tektronix customer, working at a small television studio in Michigan. When I come to work in the morning, I'm looking to solve the same problems that customers are having.

How do you know what the customer wants?

I talk with many people at the networks on a regular basis, and I get out to the smaller stations as well. I hope that through my work I can help more engineers become involved with customers, not just in terms of answering single project problems, but of seeing the whole picture and contributing solutions to customers' needs.

In your mind, what are the customers' problems?

Customers face the same problems we do. Their industry is changing with the introduction of HDTV and digital television, and customers are both excited and concerned about these possibilities. They wonder if they're going to be able to make money in an environment marked by change.

We're the same way. Demand for many of our traditional products has declined, yet we naturally want to keep doing familiar things. New technologies are facing the customer and new opportunities are facing us. Television customers are going to have to make the transition from current signal formats to those providing wide-screen, high definition digital television. Wherever a problem exists, a solution is needed — and an opportunity is presented to us. These are exciting times, and our biggest challenge is deciding how to make the most of these opportunities for customers and for us.

How can Tektronix go about making the most of these opportunities?

In the Television Division, when we see an opportunity, we start designing solutions almost immediately. Last night in Los Angeles, for example, a few of us were chatting about what solutions we could offer to customers with whom we'd just met. This morning, we blocked out diagrams about what we learned. Today, we're meeting with other engineers to talk further. I wouldn't be surprised if within a month we had some product plans in place.

We've been blessed in the division with management that gives us the freedom to chase new ideas. When our ideas have formed, we test them with customers, and then hurry to get a solution in place.

Is it difficult to implement new ideas this quickly?

Tektronix is at a crossroads. The kinds of measurements we've done and the kinds of equipment we've built are going to be changing radically. We need to be ready for some quick turns, and I believe we haven't always been ready to make them. We're not sufficiently aggressive about pursuing new product areas. We should also guard against passing up opportunities that fall between our defined businesses, instead of directly within them.

One way to increase our development flexibility is to change our view on the value of software in solving customer problems.

Why software?

For a couple of reasons. The first is related to product. By applying software, we can target customers' specific needs. We have a tremendous opportunity to make products that precisely meet those needs instead of delivering an approximate solution.

The other reason relates to research. In the past, we developed products around hardware prototypes. This strategy worked when the product in mind was similar to the ones preceding it. Today, we're tackling new ideas that are further removed from what we've done before. Scott Silver, Warren Kafer and I recently built a system we call a video image processor, where we can acquire video in any format and try out solutions before we have to commit to constructing circuit boards. Before, when we were confronted with half a dozen ways to solve a problem we tended to get lost in the problem-solving — and lose the opportunity. Now engineers in TV will be able to test all the solutions and move ahead with the best one. We'll be able to turn out better products faster, and enter new markets we might otherwise have avoided.

How will a flexible development strategy mix with business realities? Can the company make money acting the way you've suggested?

We've had our biggest wins when customers couldn't see how to solve their problems but we could. Customers often can't articulate what they need. Sometimes we can't understand a problem unless customers explain it to us, and by that time it's too late. If they can define it for us, chances are they've explained it to our competitors as well. We need to better understand the intangible aspects of what our customers are communicating to us. The VM 700 is an example of a product that solved unarticulated problems and changed the way customers perform measurements. We have many such examples, but we need more.

Is mentoring important to you?

I spend the biggest part of my time working with other engineers. Believe me, I learn from them. Often, they've come up with stuff I would never have thought of. I can visualize what a system might look like, but frequently I can't figure out the details to make it work. Here, others help me. By sharing our ideas, we're not crippled by our individual limitations; instead, we are the sum of all our skills.

What's an excellent engineer?

One who applies technology in the best way possible to solve the problem. Excellent engineering isn't necessarily what impresses the guy at the next bench. It's what delivers solutions — solutions for which the customer is willing to pay.

–By Charles Martin

In the news . . .

TV Division's **Bruce Penney** has been named a Fellow of the Society of Motion Picture and Television Engineers for attaining an outstanding rank among engineers in the televison industry. Bruce holds 20 Tek patents, is responsible for image-processing research, and is also active in video processing, TV measurement and signal processing research. He's been involved in the design and development of more than 30 Tek TV test and measurement products during his 14 years at Tek. Bruce serves on the IEEE Measurements Committee in addition to being a member of the SMPTE Standards steering committee and working groups on Studio Video Systems and Advanced TV Production.