Riding the Technology Time Machine
IEEE conference chair discusses how to convene a look into the future

Doug Zuckerman chaired the IEEE Future Directions Technology Time Machine conference, held in San Diego, 20-21 October 2016, hosted by IEEE Region 6. In this Q&A, he assesses the effectiveness of the program, recounts a few surprises and takeaways, and contemplates how best to see into the future – and why that is a powerful value proposition.

Question: First, congratulations on a successful conference. What was your personal perception of the program and its highlights?

Zuckerman: Thank you. Personally, I was thrilled at how the program worked out. We covered a broad swath of timely and future-oriented technology areas, including Big Data, Brain, Cybersecurity, Digital Senses, Internet of Things and Rebooting Computing, among others. And we covered professional, career-oriented aspects, including a well-received Women Making the Future panel and a Tech Superstars panel. One standout event that received really positive feedback was after-dinner remarks by young entrepreneurs who discussed "Making the Future Enlightening," which included how to take a great idea, attract support and funding and approach commercialization – a success story in five minutes. The engineers, researchers and practitioners in the audience were riveted – and so was my wife! Even non-technical people found the career-oriented insights valuable. Our keynote speakers provided food for thought, especially on the social implications of technology. That's a compelling issue right now and is likely to gain interest. And we had a speaker from West Point who spoke to end user needs for the future – a critical area for innovators whose work will take a few years to reach the market.

Question: Did any specific speaker's perspective surprise you or stand out among your expectations?

Zuckerman: Sherry Turkle's keynote address on technology's potential to take over our lives really struck a nerve. She gave a number of thought-provoking examples that made everyone sit up and pay attention. We're all susceptible. Her point was that communication and messaging technologies, while popular, tend to take the humanity out of communicating with other people. Turkle, as readers may know, is director of the MIT Initiative on Technology and Self. She wrote the bestseller, *Reclaiming Conversation: The Power of Talk in a Digital Age*, and spends time as a licensed, clinical psychologist. Frankly, from the audience questions, I suspect that some attendees have been seriously affected by technology replacing humanity in interpersonal communications. Haven't we all been so affected, in some way? The session was over before she could address everyone's comments and questions and the buzz spilled out into the hallway afterwards. This wasn't about the business of technology. It made me realize that innovators and entrepreneurs are themselves deeply affected by technology, though they are not always aware of it. Turkle's keynote opened some eyes.

Question: We all take in our share of conferences. How did TTM standout for you in terms of how you and your colleagues designed the experience?

Zuckerman: We received a lot of positive feedback from attendees who appreciated having a single track, so they could participate fully in all of the presentations and discussions. That precluded tough decisions on what to catch and what to miss. And that sense of participation in the topics at hand was reflected in the enthusiasm I noted, as people always had more questions than time allowed and left each session chatting with each other on the topic. The speakers, panels and technology areas were eclectic and multidisciplinary by design and that appeared well matched by a diverse set of attendees.

Question: The "future" tends to be an imprecise term, with prognostication getting fuzzier the further out one goes. How did TTM and your presenters handle this concept?

Zuckerman: That's a good point. We really wanted to take a practical approach, as opposed to, say, the purview of science fiction that, while sometimes prophetic, often conjures developments decades ahead of the present. If you divide the so-called "future" into near-term, say one to two years, mid-term, say 3-4 years, and long-term, five years and more, we tried to strike a balance. Though we wanted a tangible look at what's in the pipeline for commercialization – let's call that near-term – we also covered proofs-of-concept and trends that will play out over three, four, five years and possibly longer. I think many people agree that, beyond about five years, how technology will be manifested is difficult to visualize with any accuracy and the exercise becomes less valuable.

This is an important aspect of TTM's motivation and intent. We have sought to not merely predict the future – anyone can play that game, with greatly varying degrees of accuracy – but also to demonstrate to our attendees, especially young innovators, how their actions today actually help create or shape the future. The future, at least in technology, does not sit "out there," waiting for us and then shaping us. It's the other way around. Predicting the long-term future is fun and often involves nothing more than flights of fancy. It gets much more difficult and correspondingly more valuable as one brings the timeline in closer to today. Discerning the shape of things to come, when one is actually involved in taking an idea to fruition over the course of years, is closer to the TTM goal. The synergy between a do-able idea and an elastic notion of how it will turn out and its impacts upon reaching the market is the sweet spot for TTM. That was our goal, and I think we did achieve that.

The flip side of that coin, of course, is anticipating our needs – such as the West Pointer did on end user needs – and creating a plan, a roadmap, on how to get there. So it's not technology in search of a future market so much as imagining, based on our current needs, use cases and technology limitations – how technology could better serve us – and then building those sensibilities into an innovation. Some wildly successful, famous brands have gotten that way by following that exact line of thinking. And the TTM conference in October really served a need

for opening our eyes to how technology can serve humanity, which of course is the over-arching mission of the IEEE and one that is at the core of the IEEE Future Directions efforts. So IEEE Future Directions is currently planning the next TTM conference for next year, in 2018.