

Seeing a fabulous vision of the future

September 16 2009, By Mike Cassidy

It was a harmonic convergence of scheduling that found me spending six solid hours with some of Silicon Valley's brightest minds. Without giving it much thought, I committed recently to a morning of meetings at Hewlett-Packard's sprawling lab on a Palo Alto, Calif., hillside on the same day I had agreed to an afternoon tour of the more modest InCube Labs in a San Jose industrial district.

Let's just say it was a day when I never had to worry about being the smartest person in the room. It was a day when brilliant scientists laid out a fabulous vision of the future that I only half understood. A day that did little for my self-esteem, but one that in the end was a blessing.

Sometimes being in a place can paradoxically make it hard to see. Being in [Silicon Valley](#) subjects all of us to the risk that we'll meet the possibility of the next big thing with a shrug. Every day seems to bring, if not new wonders, then talk of new wonders and the way they could change the world.

In the course of a few hours and 19 miles, I spoke with people about various inventions aimed at tracking the slightest changes in a host of environmental conditions, or moving digital information in new ways, or easing pain by disrupting its signal in the body, or cleansing a dialysis patient's blood continuously with an implantable device.

True, some of the technologies are far from sure things. Some have years of work to go. Some will never happen. But the point is there are people all around the valley who believe the seemingly impossible is

possible. And listening to them talk reminds me that despite the outside factors -- chiefly the down economy -- the drive to innovate remains a powerful force.

It takes a certain type. At [HP Labs](#), Partha Ranganathan is working on the future of data centers, a future that sees [computing systems](#) that run 1,000 times faster at a lower cost than those currently deployed. It's a big job, but he couldn't be more delighted to be tackling it.

And you know what he really likes? Talking with others around a white board at the lab about the monumental task he and his team are undertaking.

"I find the physicists fascinating," he says. "And the things you think are impossible? They say, 'Why?'"

Slaying the impossible. It's what these big-brained innovators live for.

Which is not to say that money isn't important. This is Silicon Valley, not Utopia. HP Labs director Prith Banerjee made that clear, as he welcomed a small group to the lab before sending us off to meet with those contemplating a radically different future.

Yes, Banerjee wants his folks to think big thoughts and do cool things. In fact, he's told them their projects must have the potential to significantly change the state of the art in their fields. But they need to have the potential for something else, too: making at least \$1 billion for HP.

No pressure there.

Still, walking through the Palo Alto lab, one of seven HP labs worldwide housing 500 researchers, it's hard to imagine that the big thinkers are fixated on the payoff for HP or themselves. Down in a windowless room

with work benches, wires and servers in various states of assembly, Mike Tan talks about his part in building an affordable system that will transport digital information along beams of light instead of wires of copper.

Sure, he's enthusiastic as he explains the ins and outs of moving ones and zeros. But he really lights up when he talks about the act of invention.

"There's the actual hardship of designing something," he says, "and then the satisfaction of creating something that actually helps people, the joy of building something and seeing that it works."

It's a thrill, whether you're in a lab of 500 or running a lab with 18 employees, as Mir Imran does at InCube. Imran, who worked on the first implantable defibrillator, opened InCube in 1994. He's spun off more than 20 companies, most of them in the medical device field.

Why does he do it? Well, there is the challenge of solving the unsolvable. But his inspiration goes back to when he was an electrical engineering student at Rutgers University, who took a summer job at a school for children with cerebral palsy. His assignment: Build a machine that would help one little girl with severe palsy communicate. His solution translated her facial movements into common prerecorded phrases.

"She just loved it," he tells me on my afternoon visit to InCube. "She gave me a hug and cried. That was such a moving experience."

And one that placed him irrevocably on the road to becoming an inventor in one of the most inventive places on Earth.

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