

The Voice of Indian Innovation

Ajit Narayanan discusses Avaz—India's first augmentative and alternative communication device — and his quest to use technology for helping children with disabilities.

Avaz is a result of my personal experience with the idea that technology can change people's minds. When I was working in the US, I got a chance to see how technology can have an impact on people's lives. The excitement about starting an engineering business around a technology was basically driven by the need to make an impact. When I came back to India, I worked with a few institutions that had the capabilities to do so and when I saw the right opportunity, I grabbed it.

I started working with Vidyasagar, a school for children with special needs, in Chennai. There, I started work on a technology that can be used for those who cannot communicate. We studied various technologies in the market, in the US and the other countries, as well as a few prototypes that were developed by professors at IIT Madras. Soon after, we built a prototype of our own. That turned out to be quite interesting. When we tried it out on one of the children, it was difficult to assess whether it was working well or not because the child was unable to communicate its effectiveness.

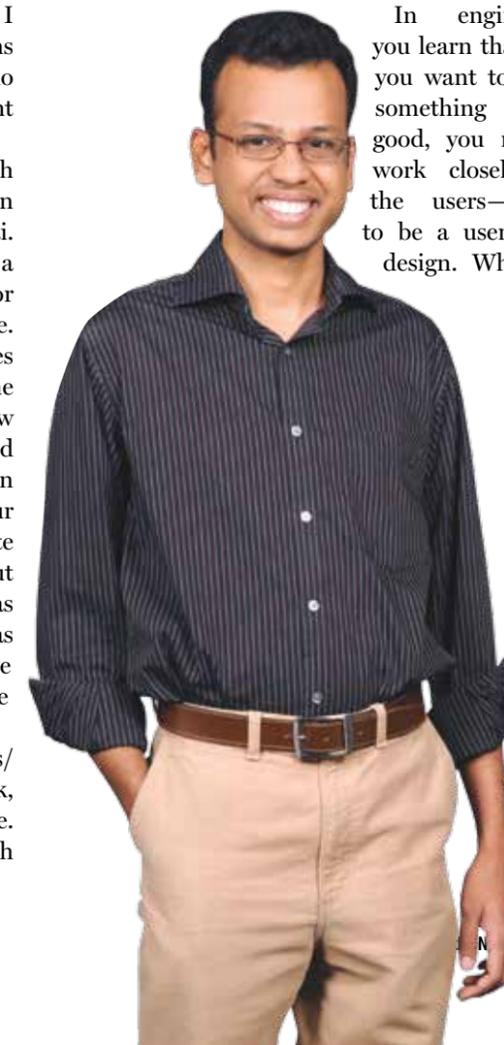
Soon, we figured out that if s/he is not able to give us feedback, about the device, it was a failure. We had to go back and forth

several times with the children in Vidyasagar. Eventually, after the third or fourth prototype, it was at a point where at least a bit of the device was good enough for the children to give us useful feedback. They were able to say things like "I like this" or "I don't like this". That is when development really started picking up pace and within a few months, the first version of Avaz was ready.

In engineering, you learn that when you want to design something really good, you need to work closely with the users—it has to be a user-centric design. When you

are working with children who cannot communicate, it becomes much more difficult to figure out whether they like the device or not. As a result, we had to use a proxy; a teacher, a parent, or a therapist. Communicating through parents was a big challenge—parents are certainly well-meaning, but they have difficulties giving us their child's feedback. Avaz is a powerful tool and children have to be taught how to use it. They cannot pick it up on their own, and it does require training and serious intervention.

When we launched Avaz in the Indian market, the pickup was slow. By contrast, it was instantaneous in the US because children there were already trained with similar devices. They were immediately able to understand what Avaz does and how it helps. When I started the company and began building this product, I thought that creating a technology is the most important problem to solve. Now I realise that the



The Changemaker

Ajit Narayanan holds a Bachelor's and Master's degree in electrical engineering from IIT Madras, and is the inventor of Avaz.

He is the recipient of the National Award for Empowerment of Persons with Disabilities (2010) and was felicitated by the President of India.



more crucial issue is to see how these technologies are effectively used in the market. Most of our current research is going into developing 'Avaz Together'—it not only incorporates all the technology a child needs, but also includes features to train a parent or a teacher, as well as provide them with lots of feedback, including analytics.

The important thing Avaz does is it helps us buy into the idea that no matter what a child's disability is; s/he deserves the same opportunities as any other child. That is a new way of thinking in India; a systemic change in a fundamental area. The focus is on changing people's attitudes towards disability and not on selling our app. The big leap towards adopting Avaz in India will happen not because of the technology or the innovation, but when parents, schools, the government, and citizens realise that disabled people should be integrated into the fold of everyday life.

In 2010, Avaz was a device

that was built on our own hardware. Immediately after tablets became widely available, we started focusing solely on the software side. Instead of developing Avaz as a device, we converted it into a software app that could be used in consumer devices. That brought the price down substantially as it was no longer dependent on specialised hardware. The biggest breakthrough is that consumer devices such as tablets have replaced specialised devices.

The fact that Avaz was created in India meant that we got plenty of support from the Indian government. We got grants to develop the product and the Ministry of Information Technology helped us secure funding. We also got a lot of

NOW I REALISE THAT THE more crucial issue is to see how these technologies are effectively used in the market.

With the proliferation of tablets, Avaz went from being a hardware device to a software app.

support from IIT Madras.

The market for Avaz in India comprises special schools in the country, which are well-equipped because all of them fall under a national trust set up by the central government. We were able to tap that network and push Avaz into schools. We did not create Avaz for the Indian market alone; it can work in any country which has tablets for sale—90% of our revenue comes from outside India. As a country, India has certain needs which are not critical in the rest of the world. For example, brilliant products at a low cost are a high priority for Indians, but somewhat of a lower priority elsewhere. Other countries have the systems and technology needed, but certain problems could not have been identified and solved if they had not been looked at by an Indian company. Being in India has been critical for us in developing a product the whole world can benefit from. ✦

(As told to Ranjan Mukerjee.)