The Indian EXPRESS
JOURNALISM OF COURAGE

Tech is not the only driver for impact; co-creation of solutions comes first: Desh Deshpande, co-founder, Deshpande Foundation

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Updated: August 30, 2025 10:52 AM IST

15 min read

An engineering graduate from IIT Madras, Deshpande has a Master's degree from the University of New Brunswick, Canada, and a PhD in Data Communications from Queen's University, Ontario, Canada. (Photo credit: Desh Deshpande)

Gururaj Deshpande ("Desh" Deshpande) is the co-founder of the Deshpande Foundation, working on sustainable social and economic impact through innovation and entrepreneurship in India, the United States, and Canada.

An internet and tech pioneer known for co-founding companies like Cascade Communications and launching Sycamore Networks, Deshpande kickstarted his impact journey along with his wife Jaishree with a $20 million grant to launch the Deshpande Center for Technological Innovation at MIT. It was followed by the launch of the Merrimack Valley Sandbox, the Pond-Deshpande Centre for Innovation and Entrepreneurship, in New Brunswick, Canada, and the Dunin-Deshpande Innovation Centre at Queen's University, Canada.

In India, the Deshpande Foundation, in Hubballi, Karnataka, works with startups on skilling and agricultural innovations and interventions.

Deshpande and Jaishree are also on the steering committee of the Gopalakrishnan-Deshpande Center for Innovation and Entrepreneurship at IIT Madras, which works with colleges and research institutions across India to implement a 'Lab to Market' concept, helping faculty, researchers, students, and entrepreneurs commercialise their research ideas.

An engineering graduate from IIT Madras, Deshpande has a Master's degree from the University of New Brunswick, Canada, and a PhD in Data Communications from Queen's University, Ontario, Canada.

Deshpande spoke to indianexpress.com on his impact journey, his framework for the Deshpande Foundation, the role of innovation, and the areas that he is most hopeful about. Edited excerpts.

Venkatesh Kannaiah: What was the inspiration for starting the Deshpande Foundation?

Desh Deshpande: I left India in 1973, did my Master's, taught for a year, got a PhD, and then worked for Motorola. I somehow got hooked on entrepreneurship. So we moved to the US from Canada in 1984. My second company, Cascade Communications, did very well, and we went public in 1994. At that point, coming from a middle-class family, it is a lot of money when you go public, and you are worth more than what you can use. So, we set up the Deshpande Foundation in 1995.

Initially, our focus was on creating more opportunities for other entrepreneurs in the United States. Then we recognised that our work benefits the people who are bright and can do well on their own. But what about the people who are being left behind? So, we started focusing on them too.

Venkatesh Kannaiah: Tell us about the Deshpande Foundation and its idea of impact.

Desh Deshpande: Let me explain the framework on which we operate. There are 8 billion people in the world, out of which about 3 billion have disposable income, and about 5 billion don't. Both groups have problems, and solving their problems is what everything is about — entrepreneurship, government, policies, and a free market economy. But the way you solve their problems is a little different.

For people with disposable income, if they have a problem and you want to solve it, you have to bring something new because it's a very competitive environment. So, innovation plus relevance equals impact. That's what startups are all about.

But when you go to the other 5 billion people who don't have disposable incomes, particularly those at the bottom, innovation doesn't mean anything. That equation gets turned around: relevance plus innovation equals impact.

What is important is understanding their real issues and solving relevant problems. Because they are struggling to get through the day, you have to co-create the solution and build capacity within those communities. Now, where does technology play into this? If you are lucky enough to find an intervention that makes sense, then you have to scale it. When you start scaling it, you get an opportunity to slowly inject more and more innovation. Technology is the biggest lever for scaling these innovations. But do not start with technology.

Most tech entrepreneurs in the impact arena mistakenly focus on their strength — innovation. They propose fancy ideas, but the people they aim to help often lack the capacity to adopt them.

In the US, for example, the country spends about $400 billion a year on philanthropy. But quite a bit of that money is spent on researchers and people coming up with policies, new ideas, white papers, and books. They are very compassionate and genuine in their efforts, but they are far removed from the people they are trying to help. It becomes more of a peer-to-peer competition among those coming up with solutions. Everybody wants to come up with a solution that's a little more profound or complicated than the previous person. It becomes a big idea factory where you keep coming up with ideas, but the people you are trying to help don't have the capacity to absorb even the simplest of those ideas.

Venkatesh Kannaiah: What kind of work happens at the innovation centres at universities that you have funded?

Desh Deshpande: Most of the work we do with universities is at the high end, bringing up solutions for people who have disposable income, but there is always a trickle-down effect. The idea is simple: the old way of innovation in universities was that a professor and graduate students would innovate the whole solution on their own, and then technology licensing offices would go looking for opportunities. Very few of them ever saw the light of day.

The simple change we wanted to make was to connect the innovator to the marketplace, as they are innovating, as opposed to waiting until they innovate the whole thing.

This is a problem with very smart people in any innovative environment. When you have innovation, you cannot mandate it. You have to give people enough freedom to come up with new ideas. But every time you put a lot of smart people together, like in a think tank in Washington or Delhi, or university professors, even though they have a genuine desire to have an impact, over time, they move further away from the real world. They get more into impressing each other rather than having an impact. If you want an innovative environment to have an impact on the world, you have to consciously keep connecting them back to the people and problems they're trying to impact.

The Deshpande Center gave small grants to researchers at MIT and connected them to the marketplace as they were innovating, not waiting until the end. That intervention turned out to be very effective.

Venkatesh Kannaiah: How did your work at universities impact the innovation ecosystem?

Desh Deshpande: When we started the foundation, we had only MIT. Then I co-chaired a council for President Obama on innovation and entrepreneurship, and I had the opportunity to work with the National Science Foundation in the US. Even though what we were doing at MIT was important, universities in Kansas, Florida, and Ohio needed the intervention much more. So, I worked with the National Science Foundation and funded them to do a programme called I-Corps, Innovation Corps, which rolled out a nationwide programme where any innovator in the United States could follow a similar methodology like we did at MIT. Fortunately, that became successful. Last year, 2,500 companies came out of this initiative.

About seven years ago, I felt that India needed to adopt a similar methodology. So, we started the Gopalakrishnan-Deshpande Center at IIT Madras. Even though it's based at IIT Madras, it's a nationwide programme, a replication of the I-Corps programme in the United States. I am hoping that if we fund it for another four or five years, it will become very much a part of a government programme.

Venkatesh Kannaiah: Can you tell us about some big social impact innovations that have come out of your university interventions?

Desh Deshpande: Our university interventions are not focused exclusively on social innovation; they are high-tech startups. Such innovations, however, can have a big impact on the economy.

For example, at our MIT Center, there is Brontes Technologies, which has built a high-precision imaging technology. They were not sure where to apply it commercially, and finally, it landed on a device like a toothbrush used for dental imaging. If you go to any dentist in the US, you will see this imaging device. It was not designed for that purpose, but when you have powerful technology and start looking for where it's relevant, you'll find it.

Another company, LiquiGlide, was inspired by nature. Butterfly wings are very hydrophobic — water doesn't stick to them when it rains, so they can still fly. The company came up with a simple way to make any surface glide. Their first application was ketchup bottles. You know how the last bit of ketchup never comes out, no matter how much you shake it? They found a way to coat the inside of the bottle, and the ketchup just rolls out, leaving nothing behind. It's not a very high-value application, but now they're using it for expensive ointments, where it makes sense to spend a little more to get the last drop out.

Another company, Leuko Labs, looks at white blood cell counts by imaging the finger. For people going through chemotherapy, you need to monitor white blood cell counts to adjust treatment. Traditionally, this meant drawing blood repeatedly. This company developed a way to image the finger's capillaries and count white blood cells in the blood flow. These are all ideas with a wide social impact, even if they are not specifically targeted at the bottom of the pyramid.

Venkatesh Kannaiah: Tell us about Deshpande Foundation's work in India.

Desh Deshpande: After 2005, my wife Jaishree, and I wanted to focus on India for people at the bottom of the pyramid. The insight was that we had to co-create solutions with the people who needed them.

That was the genesis of the social innovation sandbox in Hubballi. We picked Hubballi because that is where I'm from, and that's where Jaishree is from. We picked about five districts, about 10 million people — large enough to have all kinds of problems but small enough to make an impact with the resources we are putting in. Initially, we approached it like venture capitalists, funding nonprofits to scale their solutions. We funded about 183 different nonprofits in the Hubballi area, but unfortunately, most did not scale. Only two did — Akshaya Patra and Agastya.

About 10 years ago, we decided that instead of funding others, we should change the practice of social intervention and become implementers ourselves. We focus on three areas: skilling, entrepreneurship and startups, and agriculture.

For skilling, we built a 300,000-square-foot campus in Hubballi, and we bring graduates, train them for four months, and they get jobs paying anywhere from 2.5 to 4 lakhs a year, which is enough to make a big difference in their lives. The placement rates are 95% plus, which is amazing. But five years ago, we realised this was not very scalable, so now, we take the programme to colleges where students are in their final year of BA, BSc, or BCom. We train them and they get jobs with placement rates of 70 to 80%. We are working with colleges in Telangana, Karnataka, Goa, and Maharashtra to slowly integrate it into the curriculum.

Venkatesh Kannaiah: How do your startup and agriculture programmes work?

Desh Deshpande: We have built one of the largest incubators in India, a 100,000-square-foot building in Hubballi. We incubate startups that develop products and services for these markets — tier-two cities and rural India. We have incubated more than 500 companies at this Centre.

In agriculture, the idea is to increase farmers' income. Our first intervention was water. There are many dams and public water facilities, but governance falls apart, and they become dysfunctional within three years. We started doing private farm ponds, enough to irrigate five acres. We have done about 15,000 of them now. The first 150, we did for free. The next 5,000, farmers paid 75%, and we paid 25%. For the following 10,000, we arranged financing from banks like SBI and HDFC. Now farmers understand the value and can get it done independently. The farm ponds are mostly in Karnataka and Telangana.

Now we are working on natural farming — vermicompost, new types of grass, plants, and agroforestry. The idea is to keep experimenting with new interventions. If something is good, we use strategic planning, financial engineering, and technology to spread it.

Venkatesh Kannaiah: What are some social impact startups that have come out of your efforts?

Deshpande: For example, in agriculture, sorting cashew nuts is a high-value-added activity for cashew growers, but labour is getting expensive in India. One entrepreneur developed a solution using cameras and image processing for sorting. It has about 40% of the market share in India, with close to Rs 100 crore a year in revenue. Now he's trying to crack markets in Vietnam, Malaysia, and Africa, other cashew-growing countries.

There is a business of gherkins, small cucumbers used to make pickles, which are sold to France. France has a standard that cucumbers can't have more than 20 parts per million of worms, which aren't easily visible. Workers used to inspect each cucumber manually for holes. Another company developed X-ray technology to detect worms and process the cucumbers. Now they're repurposing that machine for sorting mangoes, potatoes, and other produce.

Venkatesh Kannaiah: Tell us about your understanding of the challenges faced by nonprofits and social enterprises in India.

Desh Deshpande: There are three million nonprofits in India. But only maybe 15 or 20 have a budget of more than Rs 50 crore. It is a very dysfunctional sector, mostly because there's not a lot of accountability. In the startup world, you can come up with a crazy idea, but within two or three years, it'll play out. Either you find a solution relevant to someone willing to pay, or nobody pays, and you go bankrupt or get acquired. Only performing assets survive in the for-profit world, and execution excellence is critical. The for-profit world has execution excellence but sometimes lacks compassion.

The nonprofit world has a lot of compassion, but there is very little execution excellence. The people who pay the money are not the ones who benefit from the intervention.

In Hubballi, for all our interventions, the people pay for it, at least part of it, and only then can they hold the organisation accountable for good execution. We need to bring execution excellence to the nonprofit world.

But for most nonprofits, their revenue base is unpredictable. In India, you cannot build a balance sheet because you have to spend 85% of what you get that year. Very few nonprofits have the ability to have a long-term strategy, plan, or investment. If that practice changes, with the CSR money and high-net-worth money available, we can show the impact and make it a standard practice in the nonprofit world.

Venkatesh Kannaiah: If you were to restart the Deshpande Foundation, what would be different?

Desh Deshpande: We started with a certain belief, and we would emphasise that even more. Social impact at the bottom, co-creating solutions, and building capacity within those communities are very important. But also, only do interventions where the more you do, the less dependent people become on you. That has been a very important lesson. Sometimes you come up with interventions where people do very well, and you get excited and do more to help them scale. But when they become more dependent on you, you mess up the system because you can't exit. It becomes like a handout. It is something we need to avoid. That has been one of the big learnings.