The Financial Express

January 16, 2016
Page No. 6

Turbocharging start-ups

Turn job-seekers into job-creators

The govt needs to implement a Make-in-Universities policy that encourages start-ups by students

SANJAY VIJAYAKUMAR

OUR nation is faced with an exciting challenge—it needs to create over 1 million new jobs every month for the next 20 years to give employment to the 200 million youth who will join the work force.

These jobs will have to come from new companies, and therein lies the paramount significance of creating a fundamental shift in our higher education system where the most brilliant minds are trained to be job-creators (of new knowledge, employment and wealth) than be job-seekers.

A strong case study—Kerala has been a front-runner in social indices and literacy; but the lack of timely changes in higher education and its inability to be in tune with the industry job requirements has created a situation where the state has around 25 lakh unemployed but highly educated youth. The contrast is stark as the state has around 25 lakh migrant labourers for blue-collar jobs.

As every challenge presents in itself an opportunity, Kerala which had almost no start-ups and little to show for entrepreneurship culture, took the first step into student entrepreneurship by announcing the Student Entrepreneurship Policy in 2012.

This landmark policy gave engineering students 20% attendance and 4% grace marks every semester. Today, there are more than 200 student start-ups in Kerala and there are promising early signs of a growing start-up ecosystem.

The visionary vice-chancellors of Gujarat Technical University and Kerala Technical University have now come together and are at the forefront of creating the University Student Start-up Policies to support these changes across affiliated colleges. With over 1 million students joining the engineering stream every year across India, the education system needs a serious overhaul.

The engineering syllabus needs to undergo major changes, in order to be in tune with the objectives of the Make-in-India programme. Every first-year student has to compulsorily take the practical workshop classes as a part of the degree certificate. Thus, students, in 2016, still learn carpentry, smithy, fitting, plumbing, sheet metal and lathe. We have to move from this system designed for the 1980s to the digital manufacturing era of 3-D printing, milling machines, laser cutters, 3-D modeling and CNC machines. This change is needed to create world-class hardware and software product designers who can then build and create the next Apple and Google from India.

Professor Neil Gershenfield, head, Center of Bits and Atoms, Massachusetts Institute of Technology, teaches a course called "How to make almost anything". This course is also available online and by upgrading our workshops to digital fabrication labs (Fablabs), we can encourage our engineering students to "make things" rather than just learn theory. Around 400 such Fablabs are present around the world, while India today has nine.

All engineering students have to also submit a final-year project as part of the degree certificate. Currently, this is non-imaginative and a near repetition of what was done by the senior batches.

Instead of a theoretical final-year project, creating a start-up project allows students to create real products that can be used by customers. Leading universities such as Stanford allow such programmes where undergraduate students can do projects on Facebook or Google, getting a taste of the best-in-class technologies that are being used by industry.

Creating a start-up while in college also means that students work together in groups. In the real world, everyone works in teams but we have an education system that is tuned for individual excellence. Student teams can now build prototypes of products every six months and, by the time they graduate, they would have worked on 3-4 product ideas.

Along with the software-product industry think-tank iSPIRT, a programme is being planned where young students across universities in India can be allowed to work with cutting edge start-ups.

The lack of adequate faculty has been a key problem in introducing Make-in-Universities till now. With massively open and online courses (MOOCs), students can now learn cutting edge courses in machine learning and big data from many leading universities around the world.

Almost 95% of start-ups fail commercially. However, with over $9 billion in investments in 2015 alone, the students who are building technically successful products gain real world skills in using next generation technologies and become highly in-demand graduates for start-up jobs.

The stage is set for the prime minister to convert these early experiments into an overarching national framework. By scaling up the Gujarat and Kerala university start-up policies as a national Make-in-Universities programme, the government would contribute significantly in creating a great pipeline of skilled talent and innovative ideas, which would help transform India from a developing economy to a developed economy in the knowledge era.

The author is founder, Startup Village. He is a part of iSPIRT's Product Circle. He is also a member, Board of Governors, APJ Abdul Kalam Kerala Technological University