Source: *Tabla!*, p8
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Sustainability can fuel entrepreneurship

IN THE past, university graduates became entrepreneurs out of necessity and lack of employment opportunities. In recent years they are treading the entrepreneurial path out of choice. Students are motivated by the successes of their seniors as well as inspiring role models from the Silicon Valley and other parts of the world. Moreover, nations such as Australia, China, India, Singapore and the US are putting in place innovation and start-up friendly policies and incentives to help their economies.

Compass ranked Singapore among the top 10 global start-up ecosystems in the world. While there is growing interest among students to set up their own start-ups, not everyone is keen or able to do so. About 1 per cent of them are more inclined to embark in start-up companies with innovative ideas either immediately upon graduation or after some relevant work experience. The remainder are inclined to take up jobs in conventional professions. Proponents of inculcating innovative and entrepreneurial spirit among students assume such skills are helpful and needed, irrespective of the students' career choice. Their main assumption is that in a post-globalised competitive world, for the economies, companies and organisations to sustain they need enterprising, innovative and passionately-engaged employees.



innovation

SEERAM RAMAKRISHNA

Clearly there is a need to provide the younger generation with information on emerging opportunities.

An area that is worth paying attention to is the sustainability innovation. At the recent World Economic Forum in Davos, Switzerland, Toronto-based Corporate Knights announced that Singapore companies StarHub, City Developments Limited, Keppel Corporation, and CapitaLand made it to the list of Global 100, a list of the world's most sustainable corporations. Said StarHub CEO Tan Tong Hai: "At the end of the day, we are all obliged to safeguard our environment and fellow man. After all, we did not inherit the earth from our forefathers; we are preserving it for our children."

Singapore Institute of Manufacturing Technology (SIMTech), a national research institute under A*STAR, has a dedicated team of researchers and engineers who devise ways to enhance industries' sustainability and competence. With the support from SIMTech, this writer teaches a course titled Materials for Engineers to undergraduate students at the National University of Singapore. The course imparts knowledge on environmental properties of materials and manufacturing processes, selection of materials for sustainable product design and advanced manufacturing. Student-led team projects are designed to encourage students to analyse real world products from the consideration of sustainability. They make use of online databases in estimating carbon footprints of engineering materials and products. These databases came into being in recent years and cover sectors such as metals and alloys, polymers, ceramics, chemicals, semiconductor, paper and pulp, wood products, service sector, food packaging, agriculture, cement and concrete and refrigeration, to name a few. The sustainability approach seeks to optimise performance across economic, environmental and social dimensions. Sustainable design of products is emerging as a strong theme among thousands of companies around the world. They are seeking better ways and means to demonstrate compatibility of company growth, community well-being and sustainability of nature.

There is room for further innovation and entrepreneurship in novel materials, materials design, nanotechnology, big data analytics in materials selection, use of 3D printing, digital manufacturing, internet of things, advanced manufacturing, optimisation of supply chain, integration of components, new recycling strategies, resource recovery from waste, and product substitution.

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