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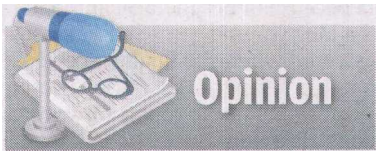
A culture of academic enterprise

To stay ahead, research varsities need to groom young talent to become scientists and technopreneurs.



By PROF TAN SRI DR SHARIFAH HAPSAH SYED HASAN SHAHABUDIN

RESEARCH universities are expected to help fuel the nation's innovation-led economy through knowledge and technology transfer that can transform existing products and services.

Such varsitites can also spin off new technology-based enterprises which promote business growth and in the process create high-paying jobs and a better quality of life.

In realising these goals, research universities must get their act together in four areas.

First, the varsities must provide quality education to produce innovative and entrepreneurial human resource, particularly for those at Masters and PhD levels who are well-versed in research and development (R&D), innovation, technology management and experience in entrepreneurship.

We must create successful pathways from R&D to innovation and commercialisation, which is the second aspect that we have to look into.

Launching start-ups have been shown to bring in more revenue to the university compared to the traditional method of licensing. Under such a situation, there will be room for the growth and development of technostarters from among the academic staff members and researchers.

Thirdly, we must engage with government, corporations, academic institutions as well as communities because innovations do not happen in isolation.

The financial values and social benefits are harvested by many stakeholders linked in an effective innovation system. Through effective engagement and collaboration, we learn how to identify the strengths of others and leverage on those resources that enhance innovation-based economic opportunities.

As for the fourth aspect, the supporting ingredients include good governance, an effective leadership and adequate infrastructure. These together with managing our talents in a fair and transparent manner, are factors that play a key role.

All these expectations of launching start-ups and producing a new breed of graduates require a mindset change towards acceptance of innovation and entrepreneurship (I&E) as core academic values, or as a culture in the university.

It means integrating I&E in university R&D, and the curriculum at both undergraduate and postgraduate levels.

In an I&E culture, academic staff members already think of possible market applications of the ensuing technology at the start of research.

Researchers and students are assisted with prototype development as well as business models which can attract investors. The curriculum produces not only innovative graduates, particularly engineers, scientists and product development experts, but also entrepreneurial managers or a CEO (chief executive officer) talent pool to harvest the value of start-ups.

Start-up companies owned by the university and investors are launched by CEOs, with benefits to participating institutes, faculty and students.

However, academia and the marketplace have very different environments, values and cultures. For instance, there are issues concerning the use of faculty time to pursue commercial goals out of university research.

There is also a stark conflict between the academic need for unrestricted publishing and the business need for commercial confidentiality.

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To build a culture of I&E we have to bridge the gap between academe and the marketplace, while building on the strengths of both.

The common ground that we create is fertile for launching start-ups, for growing business and industry – whether small and medium enterprises (SMEs) or large corporations. We can create more jobs, new talent pool and attract investors.

Each university must have its own capacity-building initiatives for technological innovation and entrepreneurship.

Universiti Kebangsaan Malaysia (UKM) for example collaborates with partners who have considerable experience in I&E. One such partner is the Stevens Institute of Technology of New Jersey, ranked third among universities in the United States for turning research into revenue.

Hands-on workshops are held to teach UKM researchers how to evaluate their technology and get business support. Participants develop viable business propositions alongside technology development to form start-ups. More importantly, they learn how to make effective decisions in facing challenges of the entrepreneur.

Leveraging on Steven's strength, UKM is developing curricular strands which provide students with an enriched learning experience that integrate business and technology management

From the first year right through the final year start-up project, students will have experience in bringing research concept to product, leading to revenue generation.

They will also have the opportunity to work with SMEs and to solve real-life problems by addressing market needs. At the postgraduate level, MBA students work with researchers and their technologies to develop business ideas. The outcome is that students graduate with the ability to grow and launch companies. If employed, they are competent to innovate and to improve their firm's productivity.

Capacity-building initiatives must also target university leaders, such as deans and directors who are vital ingredients in the transformation to an innovation-led research university.

They need to understand the whys and hows of building I&E such as being clear about the strength and focus of the research

Providing adequate facilities

base, providing strong leadership and building appropriate incentives and rewards.

Universities should also establish the necessary infrastructure and ensure that legally sound intellectual property policies and proprietary incentives to support university technology transfer efforts are in place.

In UKM for example, the Centre for Collaborative Innovation with its Office of Technology Transfer and a technology holding company provide the much needed support to bridge what that lies between university research discoveries and the marketplace. The Centre for Entrepreneurship and SME Development as well as the Graduate School of Business are places that support student entrepreneurship.

University technology transfer is a complex process but we have begun the journey to groom young talent to become scientists and technopreneurs. We will also spin off new technology-based enterprises that can contribute to national economic growth and Malaysia's positioning in the innovation-led economy. There will be failures, but we will tolerate and learn from them as a fundamental principle to move innovation and academic entrepreneurship forward.

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