

Creating an innovative future

There is a need to infuse entrepreneurial objectives as a mission for Indian universities

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NOSTALGIA must have a shelf life and any discussion on the state of Indian higher education systems cannot be relegated to the memory of the sub-continent's ancient world-class universities of Nalanda and Taxila. The annual world university rankings routinely display the dismal state of Indian higher education system.

As the President of India has recently remarked—India cannot aspire to become a sustainable superpower without becoming a knowledge superpower. India cannot fuel its imagination of becoming an industrial power-house, if it is dependent on borrowed ideas of innovation and entrepreneurship. Within the next decade it needs to produce educated/skilled people and new ideas.

Universities through their teaching efforts improve the quality of human stock; their research efforts expand the known boundaries of human knowledge and, if

commercially harnessed, could lay the seeds for new companies. Scientific ideas that led to the invention of the simple electronic calculator, optic fiber, or supercomputing, in turn led to the development of entire industries of electronics, telecom or computers respectively; all of these innovations were incubated in universities (University of Pennsylvania, MIT and Illinois, respectively). Companies, like Google, Yahoo and Cisco, literally began from the university campus of Stanford. Indian universities have to lead the economy's progress by fuelling it with innovative ideas that can become commercial assets for the benefit of future generations.

However, statistics do not look promising. For instance, as per the 2016 Global Competitiveness Index, although India has improved its overall ranking, being ranked at 55 among 140 nations, in the sub-criteria of quality of higher education and training, India ranks 90 among 140 nations. In technological readiness it ranks 120 among 140 nations and, as per the index, remains one of the least digitally connected countries in the world. Official records of the Indian Patent Office regularly display that only a minority of patents filed are by Indian applicants.

Therefore, there is a need to infuse entrepreneurial objectives as a mission for

universities besides their traditional roles of teaching and research. Universities need to adopt policies that integrate economic development of research as an academic function itself. Federal and state education departments and regulatory bodies involved with university governance need to recognise the potential of making universities as agents for “capitalisation of knowledge”, making them an economic actor in their own right. This will enhance the ability of universities to collaborate with industry—through technology transfer, patent licensing and faculty spin-offs of university developed and patented technology. A stable and predictable IP environment will be critical for this.

When it comes to research funding, China spends almost five times more than India. While China spends 2.1% of its GDP in R&D, India spends 0.85%, which is even lower than Brazil and Russia. This becomes more significant because close to 75% of India's R&D costs are govern-

ment sponsored. Further, where China attracts 17.5% of the global R&D spend, India receives a mere 2.7% of such funds.

Not only does the government need to beef up its public sector R&D budget, it also needs to incentivise collaboration of

business and public sector research. Given that studies have shown the complementary relationship between business and public sector R&D, policies like tax incentives and direct subsidies can be useful tools to sync the research objectives of public and private sector R&D, including better collaboration of public and private research infrastructure.

Government should also incentivise collabora-

tion of public and private R&D by targeting regional economic clusters. These consist of geographically localised firms across contiguous states/areas, which benefit from efficiencies of agglomeration (like cotton and sugar production in Gujarat and Maharashtra, tea production in Assam and West Bengal, technology markets in Karnataka and Andhra

Pradesh). The government should coordinate cluster-specific strategies—directing public investments to develop R&D centres and technology incubators in universities located in the proximity of such clusters, focusing on the specific research requirements of the technology cluster. For example, in the EU the ‘European Institute of Technology’, uses subsidised funds to set-up ‘Knowledge Innovation Communities’ (KIC) integrating partners from business, higher education and research in a structured entity with a results-oriented agenda. KIC's often housed in universities combine research, teaching and technology transfer to yield spillovers on local or cluster-level economic development. India's NRDC can be funded by the government to develop KIC for Indian economic clusters.

Most of India's science and technology universities do not have a former IPR policy to sync R&D efforts. Lack of IPR awareness, formal technology transfer, and licensing policies ensures that results of new R&D efforts are quickly disseminated; this results in loss of patentability and commercial use.

The National IPR Policy asks the government to take steps to improve IP output of national research institutes and universities and the ‘National Research

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Development Corporation' has taken recent steps to champion the cause of opening IPR cells in several science and technology universities, besides conducting seminars and workshops to increase IPR awareness among university management. IPR cells would be tasked to manage the universities' IPR portfolio, frame licensing policies, monitor ongoing research, network for industry collaborations, and facilitate technology transfer.

India's innovation agenda is a work in progress and universities need to cooperate in promoting such innovation goals of the economy. But for this there is a dire need for more thought and policy leadership. Recently, Haryana collaborated with the 'International Institute of Higher Education Research and Capacity Building' (IIHED) at the OP Jindal Global University to frame Haryana's 'State Higher Education Plan 2016', which provides for a policy roadmap to transform higher education. More governments should be encouraged to develop such roadmaps.

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Views are personal