

A Passage To New India

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INNOVATION is a key to economic leadership and prosperity. Scientific and technological innovation in Germany, Japan and U.S. has been widely cited as a source of their sustained economic prowess. Innovation of thought and creativity in social sciences, arts and humanities has characterised the vitality of civilizations throughout history.

AS India pushes itself to rejoin the ranks of prosperous societies, it will have to become an innovator in order to succeed. It must grapple with some difficult policy issues in the near future. What is the current state of innovation engine in India? What are the relevant policy issues? What will it take to stoke this engine?

INNOVATION is, for most part, a bottoms-up, decentralised activity of individuals and organisations. New ideas originate everywhere at unpredictable times and places. An innovation policy could try to minimize any obstacles to the process of innovation and their diffusion in the economy. Further, since a great deal of innovation is a form of public good to society, the policy could also try to make innovation worth the effort.

BRIEFLY, the engine of innovation is working well in business, and it could be made to work better. In education it has a mixed record. In research and scholarship, the pulse is weak. India is trying to remove the infrastructural and regulatory barriers to innovation, and improve controls on anti-competitive business practices. Education is expanding fast, but it needs a major overhaul, especially at elementary and PhD levels. University education system is focused largely on instruction and rigid controls and

could do more to encourage students and faculty to innovate. Finally, to stoke the engine of innovation in India, major segments of the research sector of the economy need to be linked or integrated with the industry and education system. In addition, the vast diversity of educational institutions catering to specialised needs could be consolidated into larger broad-based universities in order to provide more disciplinary interfaces which serve as breeding grounds for innovation.

SINCE the beginning its policy of economic liberalisation 1991, India has dismantled many of the pre-existing barriers to innovation. The scope of business decisions that can be undertaken without official sanction has expanded although the number of permits needed to start a new business in India still remains high compared to other countries in the world. The manufacturing sector had been tightly controlled by the government, availability of Internet made it possible for the entrepreneurs to innovate by flying

under the regulatory radar, so to speak, by creating a software and business process engineering industry in the service sector.

RAPID economic growth powered by the service sector has raised new barriers to innovation in the form of infrastructural constraints. While introduction of mobile telephony and private enterprises has been a great success story, electrical power, transportation, education, health services, clean drinking water, cooking fuel, slow-moving courts, and corrupt police and administration have become major bottlenecks. Construction of a network of high speed highways

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is underway, and air travel is expanding fast with the introduction of private airlines as well as airport management.

WHILE relaxation of an over-regulated economy is important, monopolies suppress innovation. It is also important that the federal and state governments develop effective antitrust laws and enforcement mechanisms so entrenched monopolies can be challenged by innovators.

WITH the creation of a substantial educated middle class, the realisation has grown that with proper education, India's people become the source of its strength. Translating this new attitude into reality requires better attention to education of the rural poor so the vast potential of India's human capital can be tapped. It will also need to attract enough high quality talent into graduate education so they can instruct and inspire its young, and conduct leading edge research and generate new ideas.

FROM all indications, the quality as well as quantity of high-talent young people being attracted to scholarly careers is too small today to support India's dreams for the future. Even in US universities which used to attract a large number of PhD candidates from India, the number has dropped as the economic reforms made better employment opportunities available in the industry. In any case, countries like India and China are too big to depend on foreign universities to meet their demand for Ph.Ds.

THE Government of India could consider setting up a task force or commission to examine

(1) the quality and quantity of Ph.Ds being trained in various disciplines in India;

(2) estimate the number of Ph.Ds needed in each field during each of the next 25-30 years;

(3) and develop a master plan to close the gap between the demand and supply of Ph.Ds.

FIFTY years ago, India's visionary leadership set up the education and research institutes whose fruits the current generation enjoys in the form of the IT revolution in India. The current leadership has the opportunity to plan for the next one or two generations by ensuring that there are enough high calibre Ph.Ds in India to fulfil its dreams for the future.

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