

India's innovation compulsion

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INDIA'S ECONOMY IS growing steadily despite global headwinds and is set to recover from the current setbacks soon. But the country must not waste another crisis. India has an opportunity to innovate its way out of trouble and chart a faster course for growth. Innovation spawns strong cycles of investment and consumption, and gives new competitive advantages to an economy.

Next month's National Management Convention, the All India Management Association's annual event, aims to nudge India's business and policy leadership towards innovation-led policies. Many government and business leaders will present their ideas on a range of innovation issues concerning economic reforms, infrastructure, investment, trade, technology, job creation, entrepreneurship, etc.

If India is to nearly double its economy over the next five years, fundamental policy and business innovations are needed. The recent stimulus has offered temporary relief, but to achieve lasting robustness the economy needs a big dose of creativity.

Knowledge is replacing capital and labour as the key factor of production and competitiveness. The new economy is about value-creation and not value-extraction, and the future belongs to companies with intellectual assets. Today, the most powerful global companies are innovation warriors that have very low capital and labour intensity.

India has to accelerate its climb up the innovation ladder to ensure continuity of economic growth. The country ranks 57th

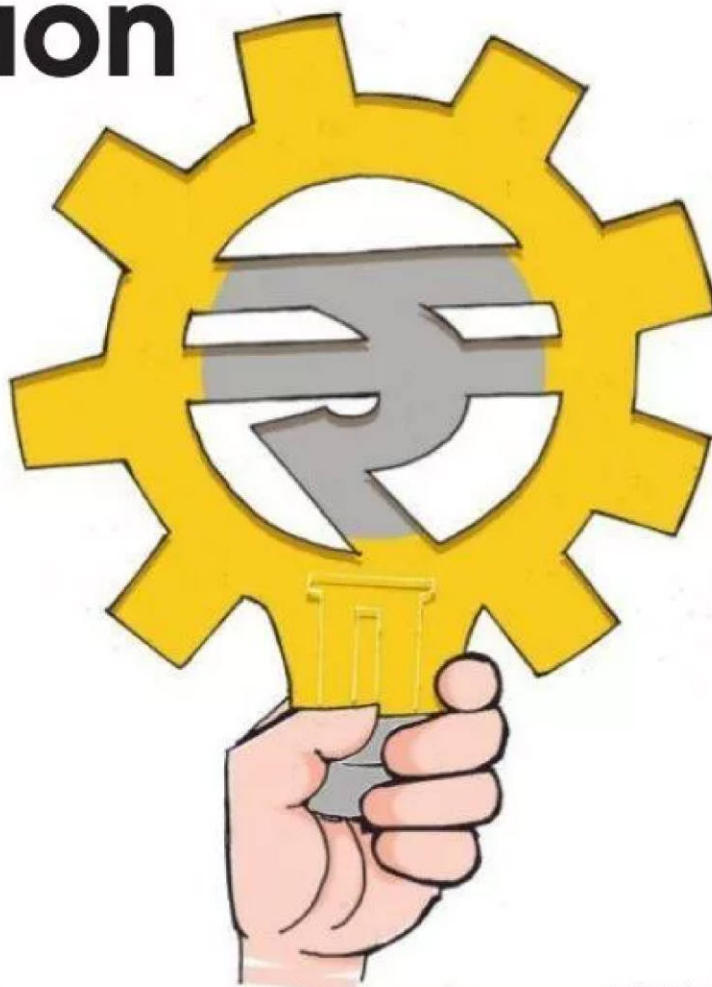


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among 126 nations surveyed for Global Innovation Index. That is both good and bad. Although India has done well for a low-middle income country, its ranking is not commensurate with the nation's aspirations and growth needs. While it ranks number one on ICT services exports, sixth on engineering and science graduates, and 18th on global R&D companies, it ranks 80th on political and business institutions, 56th on human capital and research, 64th on innovation linkages and knowledge absorption, and 43rd on knowledge creation and diffusion. Clearly, it's time for India to get its capabilities in line with its ambitions.

Intellectual property creation is basic to building an innovation economy. India is a laggard in patent applications—for every \$100 billion of GDP, India has less than 200 patent applications compared to 6,000 in China. In 2017, according to UN's WIPO report, India awarded 12,400 patents and 86% of those patent approvals were obtained by foreigners.

India could deepen its pool of foreign innovators by getting creative with its FDI practices. America's tariffs and tech-

nology bans on China are forcing global companies to look for alternative bases in Asia, but India is not attracting many of them. We could learn from Vietnam, which is offering ready-to-move-in industrial sheds with allied utilities and logistics for quick transfer of production out of China. FDI works better when it is built around market linkages and not just on cost arbitrage.

The key to becoming an innovative nation is to reward disruptors and not the establishment. The US, Europe, Japan, Israel and now China have become innovation powerhouses because they favour value-creators over rent-seekers. The Silicon Valley has been a model innovation ecosystem because the start-ups can focus on creating new ways of producing and consuming things and get rich doing it.

Government spending on basic research is critical for developing an innovation ecosystem. Internet, GPS, digital assistant, touchscreen were all developed with American government's funding. China has become a leader in 5G, electric vehicles and digital surveillance

technologies because of direct government involvement. The government is best-placed to invest in experimental science and technologies because of its reliable tax revenues, whereas the private sector is best placed to build commercial applications on top of basic R&D because of its efficiency.

But it's critical that a share of private profits from public investments are ploughed back into basic science and technology research. American tech giants are coming under pressure to pay more taxes and invest more in research institutions instead of using their huge surpluses for buying out other innovators and buying back shares. If the government has no incentive to fund or support invention and discovery, the private sector will be terribly short on innovation.

Regulations and incentives play a vital role in directing innovations. Each generation of automobiles are cleaner and safer because of regulatory pressure. Solar and wind energy industries owe their development to subsidies and tax breaks. India can transform its education, sanitation and healthcare sectors by loading incentives in favour of innovations and against inefficient technologies and operating models.

The size of R&D budgets matters, but innovation is usually not proportionate to the budget. Creativity does not come by kilos. Instead, it comes by flashes of brilliance triggered by right conditions. Among American tech giants, Apple spends a lot less of its revenues on R&D than Intel, Facebook or Alphabet. Of course, mass market players have to spread their bets wider than niche players. Typically, tech giants spend 15-20% of their revenues on R&D compared to typical industrial leaders' spending of 4-6% of revenues on R&D. It is no surprise that tech companies are disrupting every industry.

Among emerging economies, China is a great example of rise to prosperity and power through innovation. India can learn from China's deliberate increase in innovation-intensity of its economy. China is the only middle-income country among the 20 most innovative nations and its R&D spending and academic research are rising the fastest in the world. At the 2018 conference of the Association for the Advancement of Artificial Intelligence, 265 research papers of China were accepted compared to 16 from India.

India has a serious innovation deficit and it has to make up in a rush. Experimentation may involve risks, but there are enormous rewards for successful innovations. More than the fear of failure, the biggest obstacle to innovation is the idealisation of obedience and safety. Time has to come for India to think disruptively and take a moonshot approach to solving its big problems.