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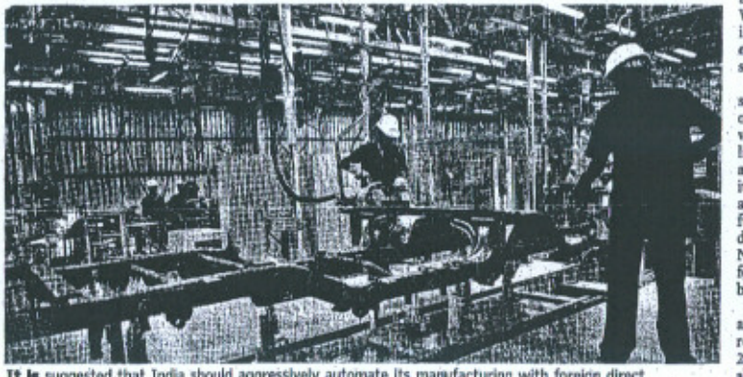
For an innovation-driven economy

By exploiting its significant strengths in knowledge-based resources India can leapfrog to the innovation-driven stage and reap a higher rate of growth, says **RAGHAVAN PARTHASARTHY.**



It is suggested that India should aggressively automate its manufacturing with foreign direct investment but the idea is less than sanguine.

Historically, economic development of nations has occurred in stages – from mechanising agriculture to industrialising factories and developing post-industrial enterprises. Experts describe development as evolutionary in which economies progress from simple to intricate activities. Factor-driven economy is at the low-end, processing natural resources; investment-driven in the middle, focussed on high-volume manufacturing, and innovation-driven at the high-end, offering value-added products. As nations upgrade from factor processing to innovation, their economy is deemed to emerge sophisticated and prosperous.

Can development be non-linear?

NON-LINEAR DEVELOPMENT

Post-war, Japan developed linearly. And so did South Korea and Taiwan. However, not all development has been linear. Australia and Canada have stayed largely factor-driven. Singapore too has not moved from the factor stage. But, Italy moved directly from factor to innovation stage. These exceptions suggest that linear progression is not a must in development; leapfrogging stages seems equally effective.

Economist Mr Michael Porter of Harvard University explains these anomalies by saying that development is unique to each nation, conditioned by resource endowments, societal norms, and skill level of people. In his view, development is better approached by organising resources around activities in which a nation has relative strengths. This promotes ancillary businesses, propelling new industries to form, and rapid development to occur.

INDIA VERSUS CHINA

India and China are newcomers to the development scene. China has moved to the investment-driven stage, but India is yet factor-driven. India's manufacturing base is relatively less capital-intensive, but its knowledge sector shows vibrancy. Calls are being made to accelerate India's development by pushing the economy into the investment-driven stage. Like China, India too it is suggested should aggressively automate its manufacturing with foreign direct investment, giving it a low-cost advantage in exports and setting the stage for higher-order development to occur.

The above suggestion is less than sanguine, at least for now, for two reasons: its benefits are likely to be stymied by India's inefficient port and road infrastructure. At present levels, they are inadequate to handle the high-volume traffic an investment-driven economy would generate; and secondly it could thrust India into a destructive battle with China for international markets in low cost goods. With China's lead advantage in this area, India could lose. Put mildly, India is still not ready for this battle.

INNOVATION-DRIVEN

A more salient approach is to leapfrog to the innovation-driven stage. This view is congruent with the Global Competitiveness Report which recognises India's innovation capabilities. India's world-class engineering and business schools offer opportunities to export higher knowledge in specialised fields. Large pool of skilled workforce in science and technology makes the country attractive to new ventures in product engineering, pharmaceutical research, and healthcare. In essence, India must exploit its investments in human capital by positioning itself as an innovation-driven economy focussed on knowledge-based industries. Following are examples of such industries.

Contract product development: Contract product developers are engineering consultants who develop products from clients' patents. Providing services only or jointly developing products are common. Nasscom estimates engineering services outsourcing alone to total $50 billion by 2020. If joint product development is added, the revenue potential could be immense.

Contract drug development: Escalating drug development costs are pressuring pharmaceutical firms to offshore R&D. Contract drug developers perform pre-clinical evaluation, data collection, and analysis. Business Insights predicts this industry to earn $35 billion by 2013. The country's share today in this industry is $100 million. Joint drug development opportunities, while driving revenues higher, would thrust India's pharmaceutical industry into the international scene.

Corporate joint venture hospitals: India has become known internationally for good quality, low-cost, surgical services. Hospitals with foreign participation are emerging in India but they are relatively small. Development of this industry could strengthen hospital supplies businesses and promote medical/surgical innovations besides export revenues. To get an idea about the size of this market, the US hospital industry earned $600 billion in 2008.

Health and Wellness: India's wealth of knowledge in traditional cure (ayurveda) and wellness (yoga) are gaining currency in the West. Wellness resorts can be developed in key locations and their services exported. This would significantly strengthen India's tourism industry.

Proprietary softwares: Indian software firms are largely service-oriented, not product-oriented. Service exports presently total $50 billion but product-related revenues are just $1 billion. India has the ability to develop proprietary software and it should rapidly do so since future service revenues could stall due to intensifying competition. Nasscom estimates world demand for proprietary software to be $537 billion by 2015.

Higher education: India's IIT and IIM are world-class and well-recognised by multinationals. In 2008, three million students studied abroad, spending $75 billion. Presently, India's share in educational export is meagre but the quality of its universities offers immense opportunities. Developing this sector would enhance revenues and strengthen research emerging from universities, a pre-requisite for an innovation-driven economy to take roots.

Virtual learning: E-learning businesses offer online education. Potential customers are students seeking tutoring, professionals seeking expert information, and businesses seeking training instructors. Global industry analysts estimate the e-learning market at $70 billion by 2013.

In 2008, India's e-learning exports totalled $350 million. India has significant strengths in knowledge-based resources. By exploiting them, India can move its economy to the innovation-driven stage and reap a higher rate of growth.

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