

ISAS Brief

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India and Singapore: Partners in Innovation and Skills Development

A comparative analysis of India's and Singapore's technology readiness and innovation trajectories shows that there is much that the Indian entrepreneurs can tap into the City-State's expertise in order to climb up the industry value-chains.

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Advances in technology have become the most important drivers of the global economy in the new millennium. With the turn of the twenty-first century, it has been increasingly realised how important a role that technology plays in shaping the profitability and driving the competitiveness of any firm to start with. The technological advances, when scaled up for a state, contribute to the overall competitiveness of its economy in the world market. However, the development of technology will fail to translate into economic benefits if the people's skills-development does not complement such advances. A country requires human capital with adequate skills to be able to deploy technology and develop it further to match the needs of the nation. When one looks at the history of most developed countries today, one quickly recognises the immense role played by technology and by the skills-development of

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the labour force. In addition, the leading countries of the world have placed significant emphasis on research and development, focused on innovation. In turn, innovation fuels technological advances.

While the world has seen path-breaking technological innovations in the recent past, Singapore serves as a shining example of a country that has transformed itself and has been climbing up the ladder of development, supported by technological innovations and skilled personnel. Functioning as an independent economy from 1965, Singapore today ranks amongst the high-income countries of the world, according to the World Bank. As a city-state, it has acquired the ability to boast of world-class infrastructure and innovative skills that have made it a modern city capable of managing most urban problems which the world at large, and India in particular, are facing today. According to the “Global Competitiveness Report 2014-15”, India ranks lower than Singapore in matters of technological readiness, innovation potential and human capital. The table below summarises the position of each country in this context.

Table 1: Comparison of India and Singapore on indices of technology readiness, innovation and higher education

	INDIA	SINGAPORE
Stage of Development	Factor Driven	Innovation driven
Technology Readiness	Rank (out of 144)	Rank (out of 144)
Availability of latest technologies	110	15
Firm-Level Technology adoption	102	16
FDI and technology transfer	95	2
Individuals using internet %	115	33
Fixed Broadband Internet Subscriptions	103	23
International internet bandwidth kbs/user	107	4
Mobile broadband subscriptions	114	1
Innovation	Rank (out of 144)	Rank (out of 144)
Capacity of Innovation	48	18
Quality of Scientific Research Institutions	52	11
Corporate Spending on R&D	30	10
University-Industry collaboration in R&D	50	5
Govt. Procurement of advanced Technological products	61	4
Availability of scientists and Engineers	45	16
Patent Cooperation Treaty(PCT) patents, applications/Million population	61	13
Higher Education and Training	Rank (out of 144)	Rank (out of 144)

Secondary education enrolment, gross %	106	16
Tertiary education enrolment, gross %	87	10
Quality of the education system	45	4
Quality of maths and science education	67	1
Quality of management schools	56	6
Internet access in schools	87	6
Availability of research and training services	64	12
Extent of staff training	77	7

Source: Reproduced by the author from "The Global Competitiveness Report 2014-2015", World Economic Forum. (Schwab, 2014)

It is clear from this that India, which at the moment wants to improve its image to attract foreign investments in various manufacturing activities, would need to improve its ranks in each of the attributes listed in the table above. Singapore, as a country which ranks among the top ten in terms of most indicators, will be a worthy ally that India could look forward to for assistance and collaboration in this regard.

Singapore and India have been enjoying good relations, starting from the British colonial era. Since independence the two countries have had growing trade relations, and Singapore has also emerged as a leading investor in India in terms of Foreign Direct Investment (FDI). The Singapore-India Comprehensive Economic Cooperation Agreement (CECA) signed in 2005 has been hailed as one of the most successful trade agreements signed by India. As the trade-and-investment relations have flourished, so have other linkages between the two countries. The Singapore-India Partnership Foundation (SIPF), the brainchild of Mr Goh Chok Tong, Singapore's former Prime Minister, has a mandate "to strengthen relations between Singapore and India through economic, government, academia and cultural linkages and to raise the positive profile of each country in the other". The Foundation also aspires to foster collaborative and complementary initiatives in research and development activities.²

Technology and skills-development are areas where the two countries have cooperated with each other, but the scope to grow the relationship further remains immense. The Government of the National Capital Territory of Delhi (i.e. the Delhi State Government), in partnership with the Government of Singapore, has already set up the World Class Skill Centre in Delhi,

² See "The Singapore-India Partnership Foundation" (<http://www.sipf.org.sg/message.htm>)

which has started offering full-time courses in Hospitality Operations and Retail Services very recently.³

The technological capabilities of Singapore are surely in high demand in India, especially to fulfil the goal of the Prime Minister of India in building 100 smart cities. India also requires up-gradation of its port facilities, where technology- and skills-development of personnel with the help of Singapore could be helpful. The Singapore Government has already assured India of assistance for creating two smart cities, provided the private sector in India would take the initial steps. The cities would be equipped with the state-of-the-art technology. In this regard Singapore would be able to share the knowledge it obtained in undertaking similar exercises in China.⁴ This would in turn help build Indian skills as well.

India has on its part complemented Singapore's skills-development exercise, especially in the defence sector. India had first allowed the training of Singapore Air Force personnel for five years on a lease basis. The pilots were trained at the Kalaikunda Air Base. Subsequently another defence agreement was signed in 2008, which allowed Singapore the usage of Babina and Deolali firing ranges for armour and artillery exercises. Singapore was allowed to train its personnel in India as a part of this agreement for the next five years.⁵ (Jha & Mishra, 2010).

Looking at the present business-and-trade architecture of the world, trade has been redefined to include trade in parts and components; we increasingly speak of global value-chains. Technology up-gradation holds greater importance in this scenario for any country to enter or even retain its position in the value-chain of a particular product.

India and Singapore can cooperate in a big way in developing each other's innovation potential. Preliminary statistical analysis reveals that Singapore, being an innovation-driven economy, participates in the value-chain towards the end of a product's preparation, while India participates at various stages but mostly at the beginning of the value-chain and the middle stages. India's exports to Singapore have grown, India thus has the potential to imbibe some of Singapore's technical knowledge and try to move up the value-chain. India's

³ See "Information Bulletin- Feb 2015", World Class Skill Centre (WCSC) http://www.delhi.gov.in/wps/wcm/connect/a8741c0046c55f4fbb5bff7d994b04ce/Prospectus+WCSC-+February+2015_opt.pdf?MOD=AJPERES&lmod=-317713832

⁴ See "S'pore offers to help Indian govt build 'smart cities'" http://www.mfa.gov.sg/content/mfa/media_centre/singapore_headlines/2014/201407/headlines_20140702.html

⁵ See "After Kalaikunda, Singapore to train at Indian Army firing ranges", The Indian Express, August 2008. <http://archive.indianexpress.com/news/after-kalaikunda-singapore-to-train-at-indian-army-firing-ranges/348181/>

involvement near the final stages of value-chains in textile products, gems and jewellery as business services are noted. Singapore thus may have the scope to upgrade skills in these sectors.

In sum, India and Singapore have a constructive and growing relationship when it comes to trade and business. However, the scope to improve collaborative relations cannot be overlooked in the fields of technical knowledge transfer, innovation and human skills up-gradation. While there have been collaborative initiatives to this end, a vast range of opportunities exist where Singapore can assist India through investment in skills up-gradation programmes in India or through assistance in building smart cities. Singapore has a distinct advantage in technology, innovation potential and skills-development, which India can suitably tap to ride the technology learning curve and harness its potential as a major participant in the global value-chains for securing a significant position in the international market for most products.

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