

TV RAMACHANDRAN

HARNESSING THE 'MADE IN INDIA' POTENTIAL

To become a global supplier of ICT products, the country must strengthen its R&D base and incentivise the manufacturing sector



The Indian ICT sector has achieved numerous milestones in recent times. From the world's most aggressive rollout of 5G in over 500 cities to the successful completion of R&D for India's stack of 4G and 5G, the sector has been making great strides. Additionally, the launch of a 6G testbed and vision document and the implementation of a unique Production Linked Incentive (PLI) initiative to facilitate the growth of a global manufacturing hub are noteworthy accomplishments. Furthermore, the setting up of an electronics manufacturing cluster in Karnataka and aggressive plans for semiconductor chip manufacturing highlights India's push to become a leader in telecom manufacturing and R&D.

The country has never seen such focused and cohesive policies and actions to meet a longstanding need.

Technology and R&D are driving the global market for telecom equipment which is expected to grow at a CAGR of 6.9%, up from USD 539 billion in 2021 to USD 919 billion in 2029. While the market is big and growing, India's share has not been comparable to countries like China, Japan, South Korea, and the United States. A report by Indian Cellular and Electronics Association (ICEA) and EY indicates that India's market share in telecom equipment manufacturing is expected to be around 3%-5% of the global market.



India needs to do away with the current system of uncertain and delayed approval processes for importing capital goods intended for R&D purposes.

India's gross expenditure on R&D is extremely low at just USD 43 per capita or 0.7% of GDP, according to NITI Ayog's India Innovation Index 2021.

With the government taking a slew of initiatives, tremendous opportunities for growth lie ahead for the telecom sector.

THE INDIA STORY

A strong and vibrant R&D is a critical prerequisite to achieving a respectable ranking in global manufacturing. The US and China are by far the two biggest spenders with R&D spending of around USD 680 billion and USD 550 billion respectively in 2022. However, according to data from Statista, when expenditure is considered as a share of the overall GDP, smaller countries with tech-heavy economies such as Israel and South Korea invest larger shares of their GDPs into R&D.

As against the above, India's gross expenditure on R&D is extremely low at just USD 43 per capita or 0.7% of GDP, according to NITI Ayog's India Innovation Index 2021.

In consonance with the goal of *Atmanirbharta* or self-reliance in the area of R&D and manufacturing in the ICT sector, the government has brought out some excellent production-linked incentive (PLI) schemes for giving a boost to manufacturing in the sector. Experts feel that PLI while restructuring India's domestic manufacturing significantly, could help push its share in GDP to 25% and foster seamless upgradation of domestic firms into the regional and global production networks. However, there are some challenges on the ground which, if overcome through finetuning of the policy, may yield the desired results.

One difficulty highlighted is the lack of a centralised database that captures all required information to make the incentives award scheme more robust. Secondly, this scheme needs to take into account the fact that the Indian industry is heavily composed of Micro, Small and Medium Enterprises (MSMEs) which are important not only for feeding the bigger firms but also for contributing to much of the employment potential. The scheme needs to suitably incentivise and reward them.

One of the key challenges for locally manufactured products to compete in the world market is an adverse

5%-6% cost differential for manufacturing in India as explained in the Table *Cost differential between Make in India and Make Elsewhere*. This cost disparity of goods manufactured in India for exports vis-à-vis existing global manufacturing hubs like Malaysia and China needs to be comprehensively addressed for the 'Make in India for Export strategy' to be successful.

There is a need to offset this cost disparity by providing export incentives of about 5% for electronics and telecom products through government schemes such as the PLI and MEIS schemes. Though this data is a couple of years old, the point was highlighted and validated even recently in a full-fledged manufacturers' forum by one of the beneficiaries of the government's PLI scheme in telecom.

INITIATIVES AND INCENTIVES

Although there are huge challenges to be overcome, it should be appreciated that the government is sparing no efforts to ensure it leverages the favourable geopolitical situation and also remove all possible barriers to facilitate world-class manufacturing for India and the world. Some of the measures that deserve to be lauded include the policies for making the latest state-of-the-art semiconductor fabs and chips in India.

The government has also approved setting up Electronics Manufacturing Cluster at Dharwad in Karnataka. This will provide a big boost to electronics manufacturing, besides creating new employment and investment opportunities.

The results of the initiatives are there to see in the development of an indigenous stack for 4G and 5G by C-DoT, the government's flagship R & D company. It is extremely encouraging that more than 20 countries have placed a demand for procuring it.

To become a global manufacturing hub, it is imperative to have a strong R&D base. While the government has put together a plan for incentivising design-led R&D and is also incentivising the manufacturing of chips and semiconductor fabs locally, there remains a challenge for R&D companies who are working on new and

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emerging technologies. Typically, the R&D and product development process takes at least 1-2 years and it is imperative to streamline the process of permissions and approvals that would permit R&D companies to use experimental licenses and experimental spectrum.

Since the government is committed to developing these new technologies under the Atmanirbhar programme, the country needs to do away with the current regime of uncertain and delayed approval processes in importing capital goods for R&D. With the deployment of 5G happening, a significant number of new devices and ecosystem would need to come up. Hence, the country cannot afford to miss out on global opportunities to develop new technologies and products under the flagship programs of Make in India and Design in India.

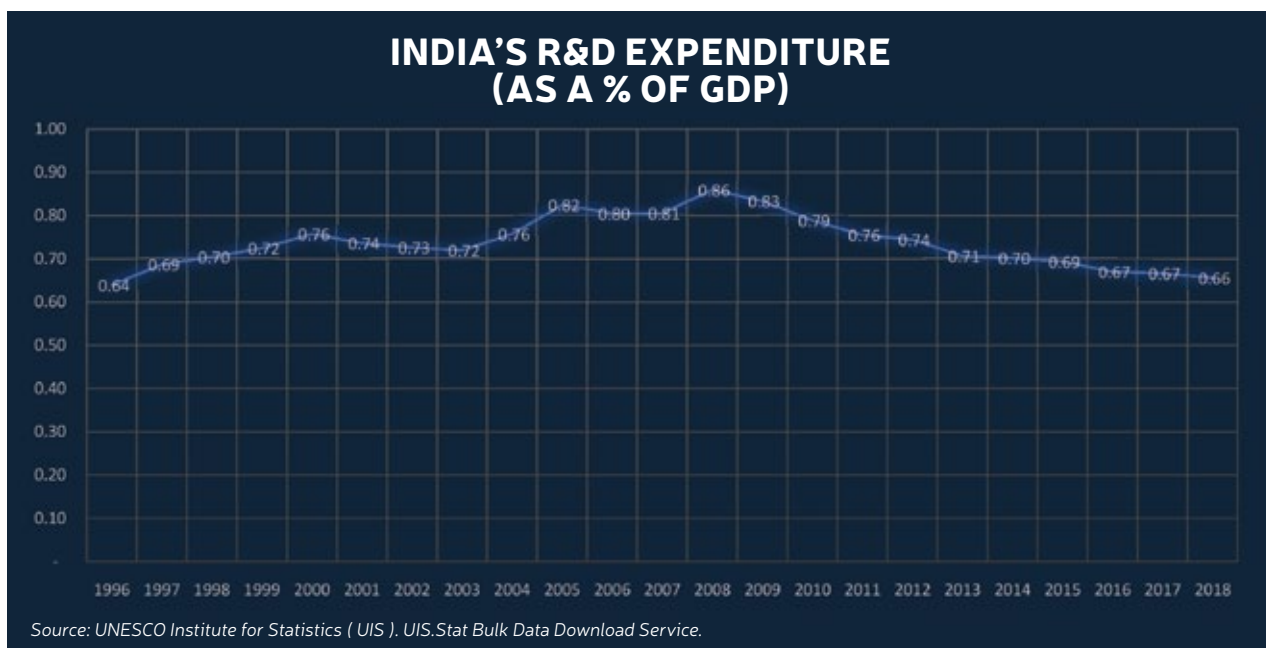
Another challenge for developing India as a hub for R&D in telecom is the difficulties in the import of used capital equipment required for setting up R&D labs. To prevent the dumping of old electronics equipment into India under the e-waste policy guidelines, the Ministry of Environment and Forest (MoEF) and Ministry of Electronics and Information Technology (MeitY) have

restricted the import of electronics equipment older than one year with a condition to re-export within three years.





Global companies establishing R&D labs in India and projects in the country typically use old capital equipment. R&D activities are carried out on a collaborative approach between different R&D labs of vendors at multiple locations, which requires shifting capital equipment between different locations globally during the testing and project phase.

Capital goods for R&D purposes with no further sale or commercial transaction value should be permitted under the 'free to import' category. Since R&D equipment has a longer life cycle, there should not be any need to re-import the same. Such conditions, if permitted, would enable ease of doing business and help incentivise global companies to continue their ongoing R&D operations in India. It will also encourage new companies to open and relocate their global R&D centres in India.

This would benefit the country immensely as it will generate more employment and development of a skilled workforce on the latest, cutting-edge technologies and help India become a training hub for LDCs and others.



COST DIFFERENTIAL BETWEEN MAKE IN INDIA AND MAKE ELSEWHERE

Landed cost element	India vs. China/Malaysia/Thailand*
Bill of Material (BoM)	 India comparable Global pricing list Global pricing for components
Inbound freight for shipping components into factories in India	 2.5% unfavourable (Sized as 2% of Bill of Material cost) Compared to global and regional benchmarks, India is farther away from component factories and the shipping rates are more expensive due to lower volume flowing into India, specific transportation lanes vs. the ones going to mega factories in Malaysia and Thailand.
Transformation cost and conversion of raw material into finished goods	 India comparable Factories in India lack scale compared to those in China. Advantageous labour rates in India are offset by the cost of facilities and electricity.
Outbound freight for shipping out finished goods	 2.5% unfavourable (Sized as 2% of Bill of Material cost) Due to low export volumes compared to global benchmarks, the logistics rates are slightly higher. Higher export volume is needed to offset.

* Based on a May 2016 study

Note: There is about a 5% cost differential in manufacturing in India for exports. Also, there is a cost disparity of exports of India vis-à-vis existing global nodes like Malaysia and China.

It will also help the country become a global R&D hub besides evolving as a global manufacturing centre.

The goal of 50 million public Wi-Fi Hotspots as captured as a National objective in the Bharat 6G Vision document released in March is another great opportunity for local manufacturers to become global suppliers of competitive public Wi-Fi components and devices. This meshed with the unbundled model of delivering public Wifi hotspots, especially in rural and economically backward areas through the historic PM-WANI scheme can help create huge employment opportunities for the youth in the rural areas of the country.

Another great opportunity lies in the manufacturing of the Internet of Things or IoT components in India. The country can serve as a large market and also as a supplier to the global market.

If India addresses these issues as well as improves the ease of doing business in this field expeditiously, it could powerfully leverage the geopolitical advantage and will become a powerhouse both in R&D and manufacturing for telecom and the ICT sector.

Backed by the suitable initiatives from the authorities and the government, India is well on its way to achieving the vision of increasing the manufacturing sector's contribution to GDP, from 14% to about 25%. It will also help increase India's share in global trade to over 10% making it one of the top three global exporters in the world. 🇮🇳

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(The views expressed are personal)

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