

Corporate innovation for Atmanirbhar Bharat: 4 game-changing ideas that may help achieve PM's vision

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The real vision of Atmanirbhar Bharat would be achieved when each stakeholder in the larger socio- economic ecosystem of the nation viz. corporations, academic and research institutions, civil society and the government can collectively contribute.



Prime Minister [Narendra Modi](#) has been pushing for Atmanirbhar Bharat amid rising anti-China sentiments.

- **By Shashank Shah**

The COVID-19 pandemic and the expansionist tendencies of China as witnessed on the borders have created a situation where it has become imperative for India to reduce dependencies on global supply chains, and focus on creating innovation and entrepreneurial ecosystems that would lead to economic and technological self-reliance and self-sufficiency through home-grown success

stories. While these are possible, they would take time, as a lot of ingredients that would contribute to them are in the making.

The National Education Policy 2020 has underscored the role of encouraging creative thinking among students instead of exam-oriented rote learning. These are steps in the right direction for the long-term.

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However, along with encouraging start-ups and innovators, there is a need to proactively engage with large corporations who own the best of talent and resources, especially those that are willing to work with governments to achieve this vision. Patriotism calls for sacrifice and corporate patriotism calls for prioritizing nation before profits, especially by creating niche products and services that have socio-economic benefits and making them available at affordable prices. For this, there is a need to create a collaborative innovation ecosystem between the government, corporations, academic and research institutions.

For long decades, each of these have been working in silos. Government institutions with huge budgets for social, defence and infrastructure sectors have depended on imported ideas, products and services thereby creating dependencies. Academic institutions produce fabulous research, which hasn't been translated into products and services of national interest, like how it has been done in many developed countries. Corporations that attempt to co-create products and services in collaboration with academia and research institutions, aren't sufficiently engaged with or their product/service used at scale to provide solutions to key challenges facing the nation. In this context, I'm highlighting the example of a corporate innovation ecosystem that I studied while writing my latest book.

While [Tata Consultancy Services](#) Ltd. (TCS) is acknowledged for pioneering India's IT revolution and also creating wealth for its stakeholders with the second largest market cap, it is lesser-known that it has contributed fine solutions for India's socio-economic wellbeing through research, development and innovation. Way back in October 1981, it created an ecosystem to foster disruptive innovations for social and commercial purposes through the establishment of its first offshore development center focused on research and design in Pune.

To achieve the vision given by then Group Chairman – JRD Tata, 'Focus on applying science and technology for the benefit of industry and people', TRDDC collaborated with international

institutions such as MIT, Stanford University and Georgia Tech from USA, and the King's College, London. It successfully delivered innovations at the intersection of business and society. Now, over 2,500 TCS employees worked in R&D, asset creation and innovation, with a consistent annual investment of 1.5% of the total turnover (\$22 billion in FY20) on research and innovation.

Few know that TCS had developed the now ubiquitous permanent account number (PAN) system for the Department of Income Tax, Government of India, way back in 1977. Impressed by the output, the company was given an assignment to computerize the total processing of income tax. However, Charan Singh, then Finance Minister and subsequently the Prime Minister, decreed that there would be no computerization in the Finance Ministry as it could create unemployment! If implemented over four decades ago, India would have been far ahead of most countries through a fully computerized tax administration system. Not only would it have led to greater efficiency, but also brought in much-needed transparency.

There are four such game-changing ideas developed over the two decades, the likes of which could help achieve success in several aspects of the vision of Atmanirbhar Bharat.

Adult Literacy Programme: Through teaching software, multimedia presentations, and printed material, the Computer-based Functional Literacy programme developed by TCS in 2000 taught a person 3Rs – Read, wRite and basic aRithmetic, in one among nine Indian and three foreign languages within 50-55 learning hours at a cost of just Rs 500 per person. This was enough for everyday requirements, such as reading destination signs on buses, legal/bank documents and even newspapers. It was recommended for deployment as a National Mission in India's XIth Five Year Plan (2007-2012), but not implemented at the desirable scale. In two decades, only a million people have benefited from this programme, when the number of adults who cannot read and write stands at nearly 266 million.

Tech-Enabled Quality Primary Education: Gram-Maitra, a multimedia-based asynchronous interactive remote teaching technology developed by TCS had the capacity to deliver high quality teaching to lakhs of primary schools. It focused on providing high quality education to students in rural and underprivileged areas using DTH (for multilingual video lessons) and internet technologies (for interactive Q&A sessions between students and teachers). With an estimated equipment cost of Rs 17,500 per classroom, a state enrolling 100,000 primary schools in the system could avail of this facility through an annual subscription of Rs 140 crore. By 2016, nearly 363,000 schools were covered under the Sarva Shiksha Abhiyan, the government's flagship

programme for elementary education, with an annual outlay of about Rs 20,000 crores. Yet, learning outcomes were falling with every passing year, averaging around 42%.

Bioinformatics for Drug Discovery: In 2007, President Abdul Kalam launched BioSuite, a bioinformatics product aiding drug discovery developed by TCS in collaboration with 18 leading Indian institutes. Given to R&D institutions in India at a nominal price of Rs 49,990, it became a success in the global market, particularly among the start-up biotech companies and drug discovery firms. By 2023, the global bioinformatics services market is expected to reach \$3.53 billion.

Agro Advisory System: mKrishi, an agro-advisory system for farmers, launched in 2009, provided services such as weather forecasts, pesticide, and fertiliser advisory. It allowed farmers to use ICT for solving farming challenges through personalized advice in their local language. For those using the service, field efficiencies resulted in over 40% increase in yield, and over 10% reduction in pesticides and fertilizer usage. A decade after its launch, the mKrishi app has benefitted only a million farmers when the total number of people in the agriculture sector is over 500 million.

The diversity of these research projects was impressive. They provided much-needed, affordable and implementable solutions to India's complex problems. Some of these seem so relevant during the current pandemic. To ensure sustainability of such initiatives, TCS did not work on them as CSR projects. Some of these innovations had the potential of providing commercial usage.

While working towards an Atmanirbhar Bharat, governments will have to leverage such disruptive socio-economic innovations and interventions in long-term national interests. This would not be possible in isolation but through collaborative execution with diverse stakeholders including corporations that have the best national talent and immense resources to experiment with ideas.

TCS is not the only large company with an innovation ecosystem. Most large corporations across sectors and industries have been investing substantial talent and resources in areas of strategic importance. For example, L&T has been championing self-reliance in the key sectors of defence, nuclear power, space research, power, and infrastructure.

The real vision of Atmanirbhar Bharat would be achieved when each stakeholder in the larger socio-economic ecosystem of the nation viz. corporations, academic and research institutions, civil society and the government can collectively contribute to creating implementable solutions using

their core competence to address key socio-economic challenges facing India. The national leadership can capitalize on the breadth of expertise available within the country by creating a strategic convergence of these innovations and leveraging synergies to work towards economic and technological self-reliance and self-sufficiency in the long-term.

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