

The Age of Technology— Challenges and Opportunities for Indian Industry

Homi P. Ranina



FORUM
OF FREE ENTERPRISE

“Free Enterprise was born with man and shall survive as long as man survives”.

- A. D. Shroff
(1899-1965)
Founder-President
Forum of Free Enterprise



SHAILESH KAPADIA
(24-12-1949 – 19-10-1988)



Late Mr. Shailesh Kapadia, FCA, was a Chartered Accountant by profession and was a partner of M/s G.M. Kapadia & Co. and M/s Kapadia Associates, Chartered Accountants, Mumbai.



Shailesh qualified as a Chartered Accountant in 1974 after completing his Articles with M/s Dalal & Shah and M/s G.M. Kapadia & Co., Chartered Accountants, Mumbai. Shailesh had done his schooling at Scindia School, Gwalior and he graduated in Commerce from the Sydenham College of Commerce & Economics, Mumbai, in 1970.

Shailesh enjoyed the confidence of clients, colleagues and friends. He had a charming personality and was able to achieve almost every task allotted to him. In his short but dynamic professional career, spanning over fourteen years, Shailesh held important positions in various professional and public institutions.

Shailesh's leadership qualities came to the fore when he was the President of the Bombay Chartered Accountants' Society in the year 1982-83. During his tenure he successfully organized the Third Regional Conference at Mumbai.

Shailesh was member, Institute of Fiscal Studies, U.K.; member of the Law Committee and Vice-Chairman of the Direct Taxation Committee, Indian Merchants' Chamber. He was also a Director of several public companies in India and Trustee of various public Charitable Trusts.

He regularly contributed papers on diverse subjects of professional interest at refresher courses, seminars and conferences organised by professional bodies.



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Homi P. Ranina*

Amidst a volatile world environment, India stands out as the emerging growth engine of the world. The sentiment of global investors is extremely bullish on India which is reflected in the strategic partnerships entered into with several developed countries. The Indian economy is growing at a pace which is higher than other countries in the world, many of which are experiencing recessionary trends pursuant to the global slowdown.

During the last ten years, the perception of India has changed dramatically in view of -

- massive capital expenditure having been incurred on infrastructure development during the past decade,
- economic stability, coupled with a robust monetary policy and,

* *The author, a noted tax expert, a qualified Chartered Accountant and a practicing lawyer, is President, Forum of Free Enterprise, Chairman, The A.D. Shroff Memorial Trust and Trustee, Nani A. Palkhivala Memorial Trust. The text is based on his talk delivered at Goa Chamber of Commerce on 27th February 2024.*

- fiscal prudence and discipline, while keeping inflation in check.

India at the moment, has four bright spots which are beckoning foreign corporations and financial investors--

- The first is rapid development of infrastructure--expressways, highways, a dedicated railway freight corridor, ports, container and cargo terminals, renewable energy projects, etc. It is expected that by the end of this year the network of highways will match that of the United States.
- The second is digitization based on a strong public digital platform which has resulted in the formalization of the economy. This decade has been described as India's Digital Decade.
- The third is deregulation which has brought about liberal and far-reaching reforms that has reduced bureaucratic hurdles.
- The fourth is demographics with the largest global pool of technically skilled manpower below the age of 35. India accounts for around 67% of the global working age population. This has triggered the growth of the Indian economy by giving a tremendous boost to consumer demand and housing, the latter alone contributing substantially to the spurt in production of cement, steel and other building materials.

Multinational companies are keen to invest in India on their own or through strategic Indian partners. It is, therefore, eminently desirable for Indian enterprises that are looking for growth with global partners to--

- Devise new business models taking advantage of the tools of technology.
- Assimilate the latest technologies as a core competence strategy.
- Create a skilled and talented work force.
- Start new ventures in sunrise sectors of industry with frontier technologies.
- Collaborate in respect of their existing businesses, with multinational firms which are looking for an additional manufacturing base to bolster their supply chain, instead of relying entirely on China.

These are elaborated below.

1. Devising new business models

In every type of business, the achievement of the ultimate objectives needs to be thoughtfully pursued to obtain the best outcomes.

- First, have a vision and be clear regarding the problems which need to be addressed.
- Second, have the right data because business solutions are dependent on the quality of the same.
- Third, identify the best technology model. It may become necessary to fine tune the model to suit the specific and peculiar needs of each business.
- Fourth, ensure a good governance framework. Setting up a self-regulating ecosystem is imperative to avoid governance lapses.
- Last, ethics in business is very important and companies need to lay down strict guidelines in order to adhere to statutory and regulatory compliances.

2. Assimilating the latest technologies

Technology infusion creates future ready organizations. Technology is constantly evolving and creating new applications that require diverse perspectives and skills. Innovative ideas in science and engineering are a key driving force in the current technological landscape.

The manufacturing sector benefits substantially by way of technology absorption if it uses tools of Artificial Intelligence which can increase productivity by 20 to 25%. AI enables a company to increase the volume of its business, while keeping costs in check.

Artificial Intelligence as a technology tool gives a boost to -

- *productivity,*
 - *performance,*
 - *prediction and*
 - *personalization.*
- ✓ Gen AI has clearly demonstrated significant improvements in productivity by speeding up processes and reducing wastages.
 - ✓ It improves business performance by enabling use of data to impact the turnover and enhance customer satisfaction.
 - ✓ It enables predictions through data which is crucial in today's world of uncertainty.
 - ✓ It makes it possible for companies to understand the needs of customers, allowing for personalization of products. Gen AI has enabled the transformation of Chatbots into conversational AI whereby the bot

will chat with a customer like a human, correlating data from many sources and previous chats. This helps in personalizing products to suit the specific needs of a customer. Automobile manufacturers are taking this seriously as a marketing strategy to boost sales.

In view of digital connectivity being extensively available in India, the MSME sector has gained considerably in its turnover and profitability. Over ten million merchants now digitally operate through QR codes and other digital modes, facilitating trade and business. This has empowered micro enterprises, especially those owned by women. Further, technology has become inevitable in logistics, given that around 5 million parcels need to be delivered in India every day. Annually, there is a 30% increase in daily volumes.

India today has the largest talent pool with half a million employees performing AI functions. It has the highest penetration with a threefold growth in skilled AI talent compared to other countries. The technology industry in India has seen over 15% rate of growth in AI/ML jobs and the number of AI engineers has grown in the past by around 65% every year.

Centres of global capabilities are being set up all over the country by multinationals. Tech companies are expanding their portfolios beyond traditional Information Technology enabled services and business process management activities, to include data analytics and intelligent automation.

It is estimated that India's AI market is poised to reach US\$ 17 billion by 2027 with a substantial growth in

AI investments. Companies are not just adopting AI; they are redefining their service offerings, creating more value for their clients and setting new industry standards. In short, technology is creating future ready organizations and setting up dynamic and evolving centres of excellence.

3. Creating a skilled and talented work force

There is growing concern about displacement of labour as a result of technological advancements. This may be true in the short term but if a front-line worker in manufacturing, having domain expertise in his specified field, acquires IT skills to build an application, he not only ensures for himself higher remuneration but also drives productivity for the benefit of his company. As a result, the demand for Gen AI courses has surged threefold with working professionals striving to make themselves adept in new technologies.

Artificial Intelligence as it evolves will remove the drudgery in manufacturing and motivate the worker to upskill himself which will keep him relevant in a changing world. Generative AI's knowledge management capabilities enable servicing of customers more effectively. Further, it helps the back-office staff to complete documentation in the shortest possible time using the AI tool.

For industry to survive and thrive, in this day and age, analytics has to become a part of the company's architecture. Every employee in the organization should have knowledge of analytics so that decisions are based on data.

Picking up new skills is the currency of today. The number of hardware-software engineers in India is increasing at a phenomenal rate. The gender gap is also decreasing as more and more women developers are playing a decisive role in shaping systems architecture. Foreign technical companies are investing heavily not only in capital but setting up data centres in India which are like modern factories.

4. Starting new ventures in sunrise sectors of industry

Some of the sunrise industrial sectors that entrepreneurs may focus on with the right technological infusion, are set out below.

- Robotics
- Drones
- Space Sector
- Renewal energy-
 - solar panels,
 - green hydrogen
- Health care and wellness facilities
- Medical devices
- Defence Equipment
- Components and spare parts for electric vehicles
- State-of-the-art Agricultural Equipment
- Ancillary units to support the semiconductor ecosystem.

The India Semiconductor Mission launched in 2021 with a projected US\$ 10 billion investment aims at positioning India as a global semiconductor

manufacturing hub. This Mission strives for technological sovereignty and securing the future of India's digital economy.

Well-known companies are setting up chip manufacturing units in Gujarat and Assam. Investment in the four projects where construction has started is to the order of Rs. 1.6 lakh crore. New ventures will embrace the entire semiconductor ecosystem of assembly, testing, marking and packaging (ATMP) units, chemicals, substrates, consumables and equipment. Foundation stones for three semiconductor projects worth Rs. 1.2 lakh crore have been laid and four or five more fabs are in the pipeline which should be commissioned by 2030.

Several Indian companies are venturing into uncharted territories.

Suzuki is planning to make electric air copters which are larger than drones but smaller than a conventional helicopter. This will provide a new mobility solution whereby air taxis in the next ten years will become as common as Uber and Ola cars on Indian roads. Suzuki plans to manufacture these air copters which will be around 1.4 tons in take-off weight so as to enable the use of building rooftops or terraces as landing locations. These copters having a range of about 40 kilometers are designed for the export market. Suzuki plans to export them to the U.S., Japan and other developed countries. Suzuki proposes to manufacture these copters in India in order to take advantage of the cost competitiveness.

5. Collaborating with multinational firms

Several incentives have been given for manufacturing products in the priority sectors. Multinational companies are keen to partner with Indian entrepreneurs by setting up joint venture companies in India to avail of these benefits. The Productivity Linked Incentive scheme is the most sought after considering the huge budgetary support provided by the Indian Government over the next five years.

Further, in order to encourage the manufacture of the final product in India, the Government has reduced tariffs on a range of imported components for the computer and electronics manufacturing industry. The idea is to make Indian industry regionally competitive and export driven. It has to be remembered that India's rival is not just China but smaller countries like Vietnam, Brazil, Thailand and Mexico.

Over the past 25 years, leading multinationals have collaborated with Indian companies to set up Business Process Management enterprises in the country. These are known as Global Capability Centres (GCCs). With AI and Gen AI, the GCCs are conducting complex operations for international customers.

Some examples of collaborative joint ventures are-

- Dynamatic Technologies manufactures Flap Track Beams for the Airbus 320 and 330 ranges of aircraft. It has now bagged a contract for manufacturing all the doors of the A220 family of aircraft.
- Foxconn Technology is setting up semiconductor facilities in India in collaboration with Indian

companies in order to avail of the vast pool of engineering and scientific talent which is necessary for developing the entire semiconductor ecosystem.

- Aeroarc has tied with a major US drone company Skydio to manufacture and export small uncrewed aircraft systems which will serve the needs of the Indian armed forces as well as defence customers in the Indo-Pacific region. State-of-the-art drones will be manufactured for several other sectors, including agriculture.
- JSW is going to manufacture green vehicles in collaboration with a leading Chinese company which owns the MG Motor brand. It is also setting up a 3 lakh unit per annum capacity factory and a 1 lakh annual capacity plant for electric commercial vehicles in Odisha.

Venturing into the global landscape

Exports of goods and services from India are increasing at a dramatic rate as India is fast becoming a manufacturing hub for high tech products. Export of processed food, seafood and agricultural products have huge potential worldwide.

The current account deficit has fallen on account of a phenomenal rise in export of agricultural products, electronic items like mobile phones, pharmaceutical products, etc. Export of IT and IT enabled services have sky rocketed. Foreign remittances to India from skilled professionals like software engineers which have crossed the 125 billion dollar mark in 2023, are highest in the world.

There are some down-sides which India is facing. Some of the obstacles are on account of geopolitical issues, like the war in Eastern Europe and logistical threats in the Red Sea, apart from enhanced volatility in international financial systems. The weakening of global demand as a result of recessionary trends in several developed countries will also impact flow of foreign direct investment to India.

To overcome these obstacles, India is entering into Free Trade Agreements, including the recently concluded EFTA, with several countries which will give a substantial boost to capital investment and flow of advanced technology.

The global financial leader, Goldman Sachs, has upgraded India keeping in mind its strong economic growth prospects driven primarily by domestic demand, constant flow of funds into the capital market and foreign direct investments in manufacturing to enable shift of supply chain from China. Global financial companies like Morgan Stanley and Nomura have also upgraded Indian stocks taking into account the fact that India's GDP in the current financial year is likely to grow at the rate of 7.2%.

Other factors which have enthused global companies are political stability which has contributed to policy reforms and a growing middle class which has propelled consumer demand. In addition, India has a very robust banking system and a Central bank that has ensured a stable currency, adequate liquidity for businesses to grow and prudent management of foreign exchange reserves of US\$ 635 billion. The internationalization of the Indian Rupee is gaining

ground as several countries are now trading with India accepting the rupee for settlement of trade dues. The country for the first time paid the UAE Government in rupees when crude oil was purchased. The RuPay credit card is being accepted in Singapore, France and some neighbouring countries.

Summing up

To sustain the growth momentum and move towards a 7 Trillion Dollar economy by 2030, it is imperative to remove all procedural bottlenecks and reduce the customs tariffs for import of components so that the 'Make in India' vision is realized to its full potential. Further, India has to strengthen intellectual property rights enforcement as foreign companies will give their technology only if their proprietary rights are protected. Labour law reforms will need to be expedited and land acquisition regulations and processes for implementing infrastructure projects need to be streamlined.

Rating agency S&P estimates that India's GDP will increase from US\$ 3.4 trillion in 2023 to US\$ 7.3 trillion by 2030. This will make the Indian economy larger than the economies of Japan and Germany.

Global leaders of multinational companies consider the 21st century to belong to India primarily because India has embraced digitization in a manner, in which, no other country has done. India is playing a leadership role in the digital field. If the country can achieve a rate of growth of 9% to 10% per annum consistently for the next five years, it will undoubtedly be among the top four economies in the world by 2035.

The ambitious goal is to make India a US \$ 15 trillion economy by 2040. The Niti Ayog is preparing a document 'Vision India @ 2047'. The document will set out the manner in which Government processes will be re-engineered and provide details about the country's global engagement in trade, technology, investments, research and development. Based on this vision, many global leaders are of the view that the economy will be one of the largest amongst the G20 nations.

Foreign direct investments in the last 9 years has been more than four times what India received in the first 67 years after its independence. State Governments are competing with one another to attract investments in sunrise projects and move towards the goal of Viksit Bharat @ 2047. States like Maharashtra, Gujarat, Karnataka and Uttar Pradesh will in the near future have a GDP of US \$ 1 trillion.

The first Prime Minister of Singapore had expressed the view that the Indian Economy was held in chains by restrictive policies of the past. When the chains are unshackled, India will emerge as an economic giant on the global landscape. The entrepreneurial spirit of India's people has now found a new lease of life after years of being stifled. For the manufacturing, digital and the ITes fields, a host of friendly policies have permitted these sectors to grow by leaps and bounds in the last decade and has made India a global hub for both front and back-end operations.

Will Indian Industry be able to rise to the challenges and take advantage of the unprecedented opportunities in India which are thrown up in this age of technology?

The answer to this question lies in Indian businesses adopting frontier technologies like Artificial Intelligence, Machine Learning, Big Data and Quantum Computing. Combined with the availability of a world class digital and physical infrastructure, a dynamic financial ecosystem and a skilled, talented workforce, a virtuous cycle of growth will be set in motion. This will propel the Indian economy to be the third largest in the world by 2047 when our citizens will celebrate 100 years of India's Independence.

* *The views expressed in this booklet are not necessarily those of the Forum of Free Enterprise.*

“People must come to accept private enterprise not as a necessary evil, but as an affirmative good”.

- Eugene Black
Former President,
World Bank
(1949-1962)

FORUM

OF FREE ENTERPRISE

The Forum of Free Enterprise is a non-political and non-partisan organisation started in 1956, to educate public opinion in India on free enterprise and its close relationship with the democratic way of life. The Forum seeks to stimulate public thinking on vital economic problems through booklets, meetings, and other means as befit a democratic society.

In recent years the Forum has also been focusing on the youth with a view to developing good and well-informed citizenship. A number of youth activities including elocution contests and leadership training camps are organised every year towards this goal.

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Forum of Free Enterprise, Peninsula House, 2nd Floor,
235, Dr. D. N. Road, Mumbai 400 001. Tel.: 022-46088687
E-mail: forumfe1956@gmail.com; Website: www.ffeindia.com;
Twitter: [@ffeconnect](https://twitter.com/ffeconnect); YouTube: Forum of Free Enterprise

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