



Kurukshetra

A JOURNAL ON RURAL DEVELOPMENT

Vol. 69

No. 01

Pages 76

November 2020

₹ 30

Entrepreneurship & Start ups



Innovation and Entrepreneurship for Sustainable Growth

R. Ramanan, Naman Agrawal and Himanshu Agrawal

Promoting Entrepreneurship and Startups will ensure an unprecedented wave of long-deserved growth, prosperity and well-being that can serve the interests of the rest of the world as well as the spirit of New India. Creating a nation of job-creators and not just job-seekers is important for a sustainable growth. And central to this, is the need for an extensive collaboration between corporate industry, academia, and governments at the village, district, state and central levels.

India, over the centuries, has never had a dearth of great thinkers, scientists, engineers, doctors, innovators, philosophers, artists. Indian intellectual, engineering, artistic capabilities are second to none with some of the greatest scientists, mathematicians and engineers in the world like former President Abdul Kalam, S. Ramanujan, Sir C.V. Raman and Dr. Vikram Sarabhai coming from various regions of India. Our philosophy, culture, fine arts, temples and sculptures also bear testimony of the same.

However, what has been lacking is a holistic innovation and entrepreneurial ecosystem that stimulates, enables and supports Inspiration, Imagination and Innovation in our schools, universities, industries across the length and breadth of the nation. Whenever Indians go abroad they excel and reach the highest levels of eminence and achievements, be it in technology, business, academia, and even governments. Many Indians

are leading innovations in some of the largest and most innovative tech, medical, financial companies of the world including Google, Microsoft, IBM, Adobe. Access to an innovative ecosystem in these developed countries has allowed many Indians to realise their aspirations, convert their dreams into realities, and helped them blossom to their full creative potential.

With over 1.4 million schools, approximately 10500 engineering and related institutions, approximately 39000 colleges, a demographic dividend that is the envy of many a country and a fast growing economy; the imperative in India is therefore to ensure that an estimated 150 million youth of India entering the workforce over the next few years can realise their true potential through access to a world class innovation and entrepreneurial ecosystem, leveraging rapidly advancing, accessible, affordable technologies transforming the world we live in and enabling an incredible set of opportunities for innovation and new job creation.



Revolutionary technological advancements are indeed transforming the world giving rise to new technology and business innovations at a dizzying pace. Electronics miniaturisation has enabled a computer the size of a room to fit our pockets aided by the convergence of computing, storage and communications at incredibly lower costs. Robotics and Artificial intelligence are driving next generation productivity and automation. 3D printers are making real time conceptualisation, design, prototyping and manufacturing at an SME level a reality. IOT or the Internet of things are connecting sensor technologies to mobile and satellite Technologies in every Industry- from enabling precision agriculture, healthcare, water cleansing and conservation, climate change controls, disaster prediction and management, driverless cars and space shuttles. Big Data and analytics and Artificial Intelligence are enabling complex decision making through advanced easy to use tools. India is a country of a billion people with thousands of challenges, which are also thousands of opportunities for innovative entrepreneurial startups to succeed with possible global impact.

Indian Entrepreneurs and Startups at forefront during COVID-19 crisis

The global COVID-19 crisis has descended with a speed and intensity that has stirred and shaken nations worldwide. Its infectious spread is afflicting people in all walks of life in over 140 countries, accelerated by an intricately interconnected world we all live in, where people mobility is key to almost every country's economy. The COVID-19 crisis has left countries gasping for immediate solutions even as the world's finest scientists, healthcare and biotech researchers fervently race towards finding a curative solution or vaccine to bring this crisis to an end.

A crisis of this magnitude and speed of spread needs urgent preventive, assistive, treatment-related solutions in various categories. These range from high quality and reliable masks, personal preventive equipment, ventilators, sanitisers, and contact-tracing, among others. This demands not only great innovative ability, but also incredible agility and nimbleness by companies and government institutions to effectively arrest and end the COVID-19 menace.

With the challenging task of keeping over 1.3 billion people safe from the clutches of the coronavirus, the Government of India is exercising

many initiatives in parallel to ensure that this global pandemic does not wreak havoc in a country with as diverse a set of challenges as one could imagine having. Among them is to leverage its innovation and startup ecosystem with over 250 incubators and 30,000 active startups.

The challenges in India are many. These include controlling the spread of COVID-19 in its cities with their share of very dense areas of population, its vast network of villages with lack of adequate hospitals, healthcare equipment or doctors, and a highly migrant workforce who are daily-wage earners. The solutions needed therefore are myriad in nature that also need to be customised to the local needs. Affordability combined with high quality and accessibility to the same are the major challenges and requirements in a country like India.

Challenging times and a crisis of this nature need great government support. It also demands great synergies between academia, government and industry. While no one could have visualised a crisis of such epic proportions to arise so unexpectedly, the government of India's unstinting backing of its Startup and Incubator ecosystem over the past several years is one of the brightest shining lights on the horizon to dispel the darkness of despair that seems to be enveloping in many parts of the world.

Atal Innovation Mission: Powering AatmaNirbhar Bharat through Innovation and Entrepreneurship

An ongoing pandemic of unprecedented proportions, COVID-19 has impacted lives and livelihoods across the globe. Even as the best minds in the world race towards finding preventive and curative solutions to combat and curb the spread of the novel coronavirus, the current crisis has been an eye-opener to several opportunities that have presented themselves during this time.

Creating a nation of job-creators and not just job-seekers is the key. And central to this, is the need for an extensive collaboration between corporate industry, academia, and governments at the village, district, state and central levels. Such synergies have indeed gained momentum with the COVID-19 crisis and need to be further capitalized on.

Let's examine the five pillars through the lens of innovation and entrepreneurship.

We begin with the pillar of demographic dividend. With over 65 percent of our country under 35 years of age, more than 1.4 million schools and 10,500 engineering and related institutions, a whopping 39,000 colleges and universities, India enjoys a demographic dividend like no other in the world. It is imperative that we enable the channelisation of this youthful energy towards nation-building activities by focusing on developing vocational, technical and managerial skills, while fostering a culture of innovation and entrepreneurship at the school, university and industry levels.

Innovative ways of leveraging emerging digital technologies can create and promote such ecosystems. This presents a huge opportunity for hundreds of edtech startups to build and leverage wireless, 5G communication, mobile AR/VR, and AI technologies to power the same. Existing government initiatives—such as Atal Tinkering Labs and AI curricula at school levels, incubators and innovation cells at university levels, and fostering startups and vocational training in emerging new areas—must also be accelerated to strengthen this pillar.

Second is the pillar of infrastructure. India has over 715 districts, more than 4000 cities and 6,00,000 villages. Undisputedly, innovation and entrepreneurship will be key to ensuring the development of both physical as well as digital infrastructure across all these regions in the

country. The nation needs smart villages and several hundred smart cities to become active hubs of livelihood enablement, innovation, and job creation. Smart water management, transportation, energy management, and housing present tremendous opportunities for innovations and startups.

This is vital to prevent a lopsided development of our economy and an unsustainable urban migration to a handful of tier-1 cities. The pillar of infrastructure would also require construction of digital highways, which would ensure that innovations reach every common citizen be it in education, healthcare, housing, or job enablement. This presents a glorious opportunity for young creative entrepreneurs to tap into and create growing organisations with global impact.

For the third pillar, Demand, India has the perfect environment. It has over 1.3 billion people, a youthful population, a growing middle class, one of the fastest-growing economies of the world, and affordable, available advanced technology to reimagine new solutions to existing and emerging consumer needs. An ideal situation for thousands of startups and companies to capitalise on and fulfil pent-up demand for new solutions and consumer- or citizen-centric services in every vertical—agriculture, healthcare, education, water management, clean and renewable energy, affordable housing, defence, space, transportation, or retail.

The pillar of demand presents an unprecedented opportunity for Make in India in every industry. There has been an increasing



number of challenges launched by various ministries—MeitY, AIM (Atal New India Challenges), DST (Kavach), DBT BIRAC (biotech challenges)—as well as COVID-19 challenges for preventive assistive solutions, spurring a remarkable slew of innovative solutions.

The recent announcements of private sector participation for innovations in the space and defence sectors opened up a flood of new opportunities for the MSME industry. Any solution developed for 1.3 billion people can also be a possible solution for the approximately 7 billion people on the planet. The recently launched Bharat App Innovation Challenge by MeitY, MyGov, and Atal Innovation Mission is a welcome step to identify and create world-class apps that can be used by the rest of the world too.

Next, we come to the pillar of technology. The remarkable growth of the fast-growing 180 billion USD IT/ITES and biotech industry in India over the past decade has showed the world India's scientific, engineering and technological prowess and capabilities. The best multinationals of the world are leveraging Indian talent and rushing to set up large R&D hubs in India. AatmaNirbhar Bharat has now turned the gaze of this world-class innovative talent inwards, to create products and services for the Indian market at par with other countries. Catalysing this stupendous potential are affordable, accessible, advanced IR

4.0 technologies, including 3D printing, IOT, AR/VR, biotech, cognitive computing, AI/Blockchain, to name a few. With one of the fastest-growing startup ecosystems—over 30,000 startups and 250 incubators—India can surely position itself as one of the leading innovative nations of the world.

Final, is the pillar of socio-economic growth. With 22 percent of its population still below the poverty line, 44 percent of its economy still agri-based, many districts still combating unacceptable percentages of infant mortality and maternal mortality, and only a mere 13 percent of women entrepreneurs, India needs to ensure that rapid economic progress encompasses societal progress.

Atal Innovation Mission (AIM)

To address the above challenges, Government of India's flagship initiative Atal Innovation Mission (AIM), NITI Aayog is leading from the front to promote a culture of innovation and entrepreneurship in the country. Towards this end, AIM has taken a holistic approach to ensure creation of a problem-solving innovative mindset in schools and creating an ecosystem of entrepreneurship in universities, research institutions, private and MSME sector.

1) Atal Tinkering Labs - At School Level

Over the last 3 years, AIM has launched the establishment of thousands of Atal Tinkering



Labs enabling students from grade 6 to grade 12 to have access to and tinker with innovative tools and technologies like 3D printers, robotics, miniaturised electronics do it yourself kits thus stimulating a problem solving innovative mindset to solve problems in around the community they are in. Atal Tinkering Labs are being established in schools nationwide with 5000+ operational in 650+ districts and over 2 million students having access to ATLS.

2) Atal Incubators – At Universities, Institutions, Industry Level

To promote creation of a supporting ecosystem for start-ups and entrepreneurs, AIM has been establishing world class incubators called Atal Incubation Centres (AICs) in universities, Institutions, corporate, etc that would foster world class innovative start-ups and become scalable and sustainable enterprises.

To date AIM has selected 102 universities / institutions / private players to establish world class Incubators, each of which will foster creation and nurturing of 40-50 world class Startups every four years. 68 of them are already operational with more than 1250 operational Startups and the remaining will be operationalised during this year.

3) Atal Community Innovation Centers - serving Unserved and Under-Served regions of India

To promote the benefits of technology led innovation to the unserved/underserved regions of India including Tier 2, Tier 3 cities, aspirational districts, tribal, hilly and coastal areas, AIM is setting up Atal Community Innovation Centres with a unique partnership driven model wherein AIM would grant upto Rs 2.5 crores to an ACIC subject to a partner providing equal or greater matching funding.

Over 300 applications have been received across the country and around 50 ACICs will be established during the next two years.

4) Atal New India Challenges - Product and Service Innovations with National Impact

To create product and service innovations having national socio-economic impact, AIM has launched over 24 Atal New India Challenges in partnership with five different ministries and departments of central government.

52 winners have been selected for grant aid and hand holding by Incubators / mentors of AIM, out of 950 applications received for the same.

5) Applied Research and Innovation for Small Enterprises (ARISE)-to stimulate MSME industry innovation

To promote innovation in a phased manner in the MSME/Startup sector, AIM will be launching ARISE (Applied Research and Innovation for Small Enterprises) along with partner Ministries so that great research ideas are converted to viable innovative prototypes followed by product development and commercial deployment.

6) Mentor of Change (Mentorship and Partnerships-with Public, Private sector, NGOs, Academia, Institutions)

To enable all the initiatives to succeed, AIM has launched one of the largest mentor engagement and management program “Mentor India – The mentors of Change”. To date AIM has over 10000+ registrations nationwide on the AIM iNNONET portal with 4000+ of them allocated to ATLS and AICs

The time is ripe for micro-finance and rural-financing schemes to spur great innovations and entrepreneurial initiatives on the socio-economic front. It is crucial to ensure gender equality, address economic disparity and equal opportunities for differently abled communities. Fast-growing economies such as ours also need to be extremely wary of climate change-related issues. Therefore, it is important that the Sustainable Development Goals remain the overarching objective of every organisation.

Promoting Entrepreneurship and Startups for Sustainable Growth truly will help India to ignite the innovative entrepreneurial spirit of New India by focusing on strengthening the above pillars, which will ensure an unprecedented wave of long-deserved growth, prosperity and well-being that can serve the interests of the rest of the world as well.

(The authors are Sh. R. Ramanan, Additional Secretary and Mission Director (AIM), NITI Aayog, Sh. Naman Agrawal, Senior Associate, NITI Aayog and Sh. Himanshu Agrawal, Young Professional, NITI Aayog. Email: naman.agrawal@nic.in. Views expressed are personal)