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EXPLAINER

How India Is 'Tinkering' Its Way into the Future

Disruptive innovation is associated with startups that combine enterprise, innovation, and technology to address an unmet need (usually at the bottom of a market) and takes it to the mainstream. Photo credit: ADB.

Building a culture of innovation and entrepreneurship starts in school.

Introduction

India today is on a cusp of "disruptive innovation," said Atal Innovation Mission's Ramanathan Ramanan, with the government acting as a great enabler as it puts a sharp spotlight on Fourth Industrial Revolution (4IR) innovations.

Ramanan accepted a secondment from a senior position at Tata Consultancy Services to head a flagship initiative of the Government of India to promote innovation and entrepreneurship across the length and breadth of the country. At Atal Innovation Mission, he leads a revolution that dives deeper into India-centric problems to discover India-specific answers for the masses.

Now the fastest growing start-up hub in the world, India's start-up ecosystem is the third largest in the world. It is projected that there will be over 20,000 functioning start-ups by 2020. According to IT industry body Nasscom, until 2017, India added more than 5,200 new start-ups and grew at an impressive rate of 7% over the previous year.

This explainer was adapted from the Knowledge Series on ICT for Development, Issue No. 3, December 2017

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Facing Future Challenges Now

The virus of innovation and entrepreneurship has infected the entire country and across sectors like agriculture, irrigation, sanitation, healthcare, education, manufacturing, etc. These involve the use of artificial intelligence, automation and machine learning to solve inefficiencies in areas like healthcare, logistics, education and financial services.

"India has been leveraging on IR 4.0 to solve some grand challenges facing the country," said Ramanan at the Digital Strategies for Development Forum 2017, hosted by the Asian Development Bank in Manila in September.

From making the country sewage-free, giving universal access to drinking water and ensuring zero blackout to financial inclusion, India is using digital technology to meet the United Nations Sustainable Development Goals that create positive impact in society and the world.

Firing Up Innovation and Imagination in Schools

Ramanan is stepping up to the challenge by scaling up problem-solving skills and cultivating innovative, curious, creative and imaginative young minds at Atal Tinkering Laboratories that Atal Innovation Mission established. The overall vision is for every school in India to gain access to at least one or more laboratory in each district and expand it with the help of state education ministries across the country.

This means more than 700 districts across the country will have innovation workspaces of 1,000 to 1,500 square feet where the latest technologies such as 3D printers, robotics, Internet of Things, miniaturized electronics and do-it-yourself kits are installed. Students from grades 6 to 12 can tinker with these technologies and learn to create innovative solutions with them.

Atal Innovation Tinkering challenges are also regularly held in schools as well as by Atal Innovation Mission every month to ensure students remain actively involved in solving problems in their community and in the country.

Among these events was the Atal Tinkering Fest held for two days in July 2017 in which thousands of students participated and came up with innovative solutions such as a home anti-theft system, a water-pumping car, and light-sensor devices, said Ramanan.

In addition, the government is also building a supporting ecosystem of innovation with the establishment of Mentor India, a network of professionals and industry experts who can help mentor students at Atal Tinkering Laboratories and incubators or startups.

Ramanan said India has the demographic advantage but needs to nurture its young minds to become a superpower of innovation, value creation, and wealth. And only when it has succeeded as a copious habitat for entrepreneurship and problem solver of future challenges will it fulfill its mission, not only for

India, but also for the planet.

Resources

Asian Development Bank. 2017. Knowledge Summary from Digital Strategies for Development Forum 2017. *Knowledge Series on ICT for Development*. No. 3. December.

Atal Innovation Mission website

Related Links

Summary: *How Ready Are We for Industry 4.0*

Case Study: *Pulling Together Resources to Power Classrooms with Technology*

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Last updated: May 2018