Deep Tech Start-ups

Why in news?

The office of the Principal Scientific Adviser to the Government has put out a draft National Deep Tech Start-up Policy.

What is deep tech start-up?

> *Deep-tech start-ups in India raised 2.7 billion dollars in venture funding in 2021, and accounts for over 12% of the country's overall startup ecosystem, as per NASSCOM study.*

- It refers to a class of startup businesses that develop new offerings based on tangible engineering innovation or scientific discoveries and advances.
- Deep Technology refers to innovations founded on advanced scientific and technological breakthroughs like *Artificial Intelligence, Quantum computing, drones* etc.,
- The *Great Indian Start-up Boom* of the last decade, led by young entrepreneurs and catalysed by the government's Start-up India movement, created an environment of entrepreneurship in India.

What are the advantages of deep tech start-ups?

- **Address real world problems-** It can create more effective, efficient, and sustainable solutions.
    - Example- AI and machine learning can diagnose diseases, optimize supply chains and improve energy efficiency.
- **Create new industries-** The rise of quantum computing is expected to revolutionize fields such as finance, cryptography, and logistics.
- **Foster innovation-** It helps innovation in variety of fields.
    - IIT Madras's Research Park, which has incubated over 200 deep tech companies cumulatively valued at over ₹50,000 crore including those in space and aviation.
- **Increase the patents-** National Chemical Laboratory's Venture Centre supported to file and commercialise high-quality patents.
- **Encourage investments-** Discovery through start-ups founded by themselves foster independent decisions which leverages deep historical investments in S&T in its public labs and institutions.
- **Technology risks-** Deep tech startups are the main route through which India is taking technology risks, a crucial element to build new capabilities.

What are the key provisions under draft policy?

- **Aim-** To support and nurture the unique requirements of deep tech start-ups in India.
- It serves as a comprehensive framework to address the challenges faced by deep tech startups and provide definitive policy interventions to enhance the ecosystem.



- **Enhance technology commercialisation**
  - Creating seamless partnerships between academic institutions, research labs and industry.
  - Technology commercialisation offices within academic institutes and research labs.
  - Providing a set of guidelines for commercialisation of publicly funded research.
- **Open Science Data Sharing Platform**- It is set up to encourage collaboration and knowledge sharing among the stakeholders to promote deep tech innovations.
- **Increase R&D expenditure**- It is the critical base for scientific human resource.
- **Simplify intellectual property**- It aims to establish a single window platform that enables a Unified IP Framework, customised for deep tech start-ups.
- **Ease regulatory requirements**- It suggests the creation of Export Promotion Board to ease barriers of entry for Indian deep tech start-ups into foreign markets.
- **Resource intensive policy approach**- To attract global talent, such as offering networking opportunities to international deep tech startups and experts interested in relocating and contributing to the local ecosystem.
- **Inter-Ministerial Deep Tech Committee**- It is constituted to regularly review the requirements of enabling the deep tech ecosystem to function better.

Initiatives taken to promote deep start-ups

• **Tamil Nadu Technology Hub (iTNT Hub)-** It is a public private partnership located in Chennai to serve as a central hub connecting start-ups in emerging and deeptech areas.
• **TIDE 2.0 Scheme-** It promotes tech entrepreneurship in India by providing financial and technical support to incubators that support ICT startups using emerging technologies.
• **Next Generation Incubation Scheme** -It is an initiative of Ministry of Electronics and Information Technology that supports innovative startups in India.
• **National Supercomputing Mission** -It is a government-funded initiative launched in 2015 to make India a global leader in supercomputing.
• **National Quantum Mission**- It was launched in 2023 to provide state-of-the-art quantum research facilities to scientists and researchers across the country.
• **National Education Policy -** It was launched in 2020 to emphasise multidisciplinary education.
• It calls for the creation of a new curriculum that will allow students to study a variety of subjects, such as science, technology, engineering, mathematics, humanities, and arts.
• **NECTAR-** It is an autonomous society under Department of Science and Technology.
• It aims to harness and leverage niche frontier technologies available with central scientific departments and institutions to address the socio-economic challenges of the Northeast region.
• **Funds of Funds Scheme-** The Government has established it with corpus of Rs. 10,000 crore, to meet the funding needs of start-ups.

What lies ahead?

- **Finance-** The government must lay emphasis on the deep tech sectors in existing SIDBI Fund of Funds.
- Industry must increase and channel their research funds.
- **Enable mass procurement-** There is a need to mass procure indigenously developed technologies across the ministries.
- **Focus on Start-up India 2.0-** The energies of India's entrepreneurs should be directed towards building Indian industrial and public capabilities.

References

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3. PIB- Deep tech start-up policy for public consultation

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