India's Startup Ecosystem

For Prelims: Semiconductor, Machine learning, Department for Promotion of Industry and Internal Trade, Startup India, Atal Tinkering Labs, Venture capitalist

For Mains: Role of Startups in Economic Development, Government Policies Supporting Innovation and Entrepreneurship in India, Challenges in the Indian Startup Ecosystem

Source:TH

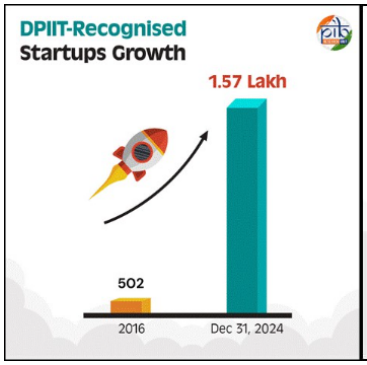
Why in News?

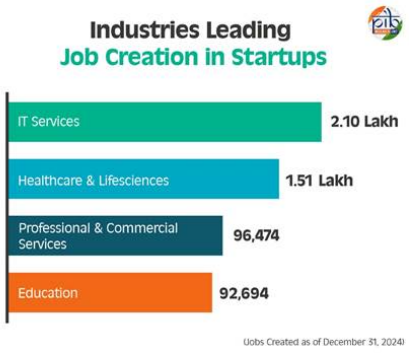
The Union Minister of Commerce and Industry expressed concerns over the **limited innovation in Indian startups,** urging them to shift focus from **low-tech sectors** like grocery delivery to **high-tech industries** such as **semiconductor** production, and **machine learning.**

What is the Current State of the Startup Ecosystem in India?

- **Scale:** India's startup ecosystem is now the world's 3rd largest, with over **1.57 lakh Department for Promotion of Industry and Internal Trade (DPIIT)** recognised startups as of December 2024, up from just 502 in 2016.
    - Backed by over 100 **unicorns** and major hubs like Bengaluru, Hyderabad, Mumbai, and Delhi-NCR, the landscape is expanding rapidly.
    - Over 51% of startups now come from Tier II and III cities, reflecting nationwide entrepreneurial growth.
- **Key Schemes and Initiatives:**
    - **Startup India**: Aims to foster innovation, create employment, and boost economic growth.
        - Under **Startup India** over 17.28 lakh jobs were created, with key contributions from IT services, healthcare, and professional services.
        - Rise in **women-led startups,** with 75,935 startups reporting at least one woman director.
    - **Startup India Seed Fund Scheme (SISFS)**: Launched with a Rs 945 crore corpus to support early-stage startups. By 2024 under **SISFS,** 213 incubators have been approved, benefiting 2,622 startups.
    - **Fund of Funds for Startups (FFS)**: It is managed by **Small Industries Development Bank of India (SIDBI)** and channels funds to **Securities and Exchange Board of India** registered **Alternative Investment Funds (AIFs),** which in turn invest in startups via equity and equity-linked instruments. By 2024, 1,173 startups have been funded.
    - **Atal Innovation Mission (AIM)**: Launched in 2016 to promote innovation, focusing on creativity and ecosystem-building.
        - 10,000 **Atal Tinkering Labs** have been set up, and 3,556 startups have been incubated in 72 Atal Incubation Centres, creating 41,965 jobs.
    - **Credit Guarantee Scheme for Startups (CGSS)**: Provides **credit guarantees** for loans

to DPIIT-recognized startups.
        - As of January 2025, Rs 604.16 crore in loans have been guaranteed, including Rs 27.04 crore for women-led startups.
    - **MeitY Startup Hub (MSH):** A central platform under Ministry of Electronics and InformationTechnology (MeitY) supporting over 5,310 tech startups, fostering innovation and collaboration across India's tech startup ecosystem.





What Challenges Hinder the Success of Startups in India?

- **Infrastructure Challenges:** High operational costs and infrastructure deficiencies in India, especially in smaller cities and rural areas, pose significant challenges for startups. Issues with **reliable internet, transportation, and energy supply** increase overhead costs for new businesses.
- **Consumer-Focused Over Deep-Tech Innovation:** Most Indian startups focus on **consumer services** (e.g., food delivery, fintech), unlike China's **deep-tech ventures** in **AI chips**, or **(EVs)** reflecting structural economic trends, not just the choices of entrepreneurs.
- **Structural Economic Constraints:** The startup ecosystem mirrors India's segmented demand structure, which can be categorized into **Rich** (150 million affluent consumers), **Middle-income** (300 million aspirational but price-sensitive users), and **Poor** (1 billion largely unmonetizable users).
    - Startups primarily **target the middle-income group,** using the poor's labor and the rich's capital, leading to **scalable but not deeply innovative** models.
    - **Lack of Domestic Venture Capital:** Indian startups face a policy environment that discourages **high-capital, high-risk ventures into industries like EVs, robotics, and semiconductors.**
    - India's startup ecosystem is facing a slowdown, with over 5,000 closures mostly in Maharashtra due to funding challenges and rising competition.
    - Despite the SISF offering early-stage support, it fails to meet long-term capital needs, especially in high-capital sectors like EVs, and robotics.
    - Seed funding dipped by 25% and Direct-to-Consumer (D2C) startup funding fell by 18% in 2024, reflecting cautious investor sentiment.
        - This highlights a clear need for more domestic investors who are willing to invest in high-risk, long-term ventures.
    - **Venture capitalists,** crucial for early-stage growth, remain limited as **investors prefer safer, fast-return** sectors like e-commerce amid macroeconomic and political uncertainties.
- **Limited R&D Spending:** India's R&D investment is just **0.64% of GDP,** limiting innovation in high-tech sectors. The focus has been more on **basic research than applied, commercially viable research.**
- **Exit Challenges**: Indian **startup Initial Public Offering (IPOs)** have underperformed, with many trading below issue prices due to high valuations, and profitability concerns. Limited exit options and poor performance have increased investor caution.

What Measures can be Adopted to Boost Startup Ecosystem in India?

- **Fostering Industry-Institution- Academia Linkage:** Indian startups in deep-tech and space can scale globally by partnering with institutions like the **Defence Research and Development Organisation (DRDO)**, the **Indian Space Research Organisation (ISRO),** and top academic institutes such as the Indian Institutes of Technology (IITs) and the Indian Institute of Science (IISc).
    - These collaborations offer government support, **credibility, and access to global contracts,** enhancing their innovation and competitive edge, similar to the alliances seen between **NASA and SpaceX.**
    - Provide startups with essential funds based on outcome-based grants under the **India Semiconductor Mission**, **IndiaAI Mission**, and **National Quantum Mission (NQM).**
- **Scaling Innovation for Global Reach:** To secure funding for deep innovation, Indian startups must focus on creating high-quality, scalable products like **Agnikul's 3D-Printed Rocket Engine** , and **Zoho's cloud software.**
    - This will enable them to compete globally and attract global partnerships. Government programs like the **India Innovation Growth Programme** can help facilitate market linkages and support global expansion.
- **Positioning India as a Leader in Green Innovation:** Indian startups like **Ather Energy** highlight the potential for innovation in sustainability.
    - By focusing on eco-friendly solutions such as **electric mobility and clean energy**, startups can align with the **Mission LiFE and the "Made in India for the World"** vision, positioning India as a global leader in green technologies for a sustainable future.
- **Developing and Retaining a Future-Ready Talent Pool:** Programs like **Skill India and Atal Tinkering Labs** should focus on advancing skills in AI, machine learning, and data analytics.
    - Additionally, retaining STEM talent within India is essential to prevent brain drain and ensure sustained innovation and growth in the startup ecosystem.
- **Unified Digital Compliance Platform:** Establishing a Unified Digital Compliance Platform can simplify India's complex regulations by integrating compliance requirements into a single interface, automating tasks, offering real-time updates, and guiding startups on legal obligations.

Conclusion

India's startup ecosystem is thriving, fueled by government schemes, and a growing entrepreneurial mindset. However, to fully realize its potential, India must reform its manufacturing sector to enable startups to drive industrial transformation and global competitiveness. With a clear roadmap, the ecosystem is poised for continued success.

Drishti Mains Question:

How can Indian startups scale up and compete globally in sectors like deep-tech? Discuss the challenges they face and suggest solutions**.**

UPSC Previous Year Question (PYQ)

Q. What does venture capital mean? (2014)

(a) A short-term capital provided to industries

(b) A long-term start-up capital provided to new entrepreneurs

(c) Funds provided to industries at times of incurring losses

(d) Funds provided for replacement and renovation of industries

Ans: (b)