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ANALYSIS**

TOPIC

**VENTURE CAPITAL BOOST FOR INDIA'S
SPACE SECTOR**

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VENTURE CAPITAL BOOST FOR INDIA'S SPACE SECTOR

Context

- Recently, the Union Cabinet has approved the establishment of a Rs. 1,000 crore Venture Capital (VC) Fund dedicated to supporting India's space sector.

A Strategic Move for Growth

- The Rs 1000 crore fund, managed by the **Indian National Space Promotion and Authorisation Centre (IN-SPACe)**, is designed to support startups and businesses within the space sector. It is expected to catalyse the growth of India's space economy, which is projected to expand five-fold over the next decade.
- By providing financial backing to around 40 startups, the government intends to drive advancements in space technology, stimulate job creation, and ensure the long-term sustainability of the sector.
- It aims to propel India's space economy to new heights, fostering innovation, job creation, and technological advancements.

Investment Strategy: Two Tiers Deployment

- Growth Stage:** Investments will range from Rs. **10 crore to Rs. 30 crore**, depending on the startup's development trajectory and long-term potential.
- Later Growth Stage:** Investments will range from Rs. **30 crore to Rs. 60 crore**, supporting more established companies that have shown significant progress and have a strong growth trajectory.
- It ensures that startups at various stages of their journey receive the necessary support, encouraging innovation at every level.

Role of IN-SPACe

- IN-SPACe was **established in 2020** as part of the government's comprehensive space sector reforms. Its purpose is to promote and oversee private sector involvement in space activities, serving as a key facilitator for space startups and businesses.
- IN-SPACe has been instrumental in initiating reforms that align with the government's goals of enhancing space technology, increasing private participation, and expanding India's share in the global space economy.

India's Space Economy

- India's space endeavours have come a long way since the launch of Aryabhata, its first satellite, back in 1975.
- Over the years, the ISRO has achieved remarkable milestones, from Chandrayaan to Mangalyaan, and has significantly contributed to both scientific research and practical applications.

Current Valuation and Global Share

- As of now, India's space economy is valued at approximately 6,700 crore (around \$8.4 billion), accounting for a modest 2% share in the global space economy.
- However, the **Indian National Space Promotion and Authorization Centre (IN-SPACe)** projects that by 2033, India's space economy could reach 35,200 crore (approximately \$44 billion), capturing about **8% of the global market share** and aiming for a **15% share by 2047**.

Budgetary Allocation

- In the recently announced Union Budget for 2024-25, India's space sector received a significant boost. The Central government allocated 13,042.75 crore to support space-related initiatives.
- Now, with a **fresh infusion of ₹1,000 crore (approximately \$134 million)**, as a **Venture Capital Fund (VCF)**, India's space aspirations are set to soar even higher.
- It aims to achieve a fivefold increase in India's space economy over the next decade, along with the **Fostering Innovation, Private Sector Participation, and Global Competitiveness**.
 - India has been actively **liberalising and privatising** its space sector.

Decadal Vision and Strategy

- IN-SPACe, the single-window, autonomous agency under the Department of Space, recently unveiled its decadal vision and strategy. It focuses on several key areas:
- **Demand Generation:** Creating a robust demand for space-related services and applications.
- **Local Manufacturing Capabilities:** Encouraging indigenous production of satellites, launch vehicles, and other space hardware.
 - ◆ ISRO is actively opening its doors to private sector participation, fostering a resurgent **Aatmnirbhar Bharat (self-reliant India)**.
- **Infrastructure Development:** Building necessary infrastructure for space activities.
- **Regulatory Framework:** Providing clear guidelines to facilitate participation by non-governmental entities (NGEs) in the space sector.

Key Segments of the Space Ecosystem

- **Space-for-Earth:** Applications like weather forecasting, communication, and remote sensing fall under this category.
- **Access-to-Space:** Enabling satellite launches and transportation.
- **Space-for-Space:** Focusing on scientific research, exploration, and interplanetary missions.
- **Strategic and Enabling Capabilities:** IN-SPACe aims to achieve its vision through **ten strategic capabilities** like *Earth Observation (EO) platforms, Communication platforms, Navigation platforms, Research & Development ecosystem, Talent pool creation, Access to finance, International collaboration, and Policy and regulation*.

Potential of Space Sector

- **Export Potential and Investment:** Currently, India's export market share in space-related services stands at 2,400 crore (about \$0.3 billion). The goal is to boost this to 88,000 crore (\$11 billion).
 - ◆ An ambitious investment of 17,600 crore (\$22 billion) is envisioned over the next decade.
- **Rise of Space Tourism:** According to media reports, in 2023, the space tourism market was valued at \$848.28 million.
 - ◆ It is expected to grow to \$27,861.99 million by 2032.
 - ◆ **Major Players in Space Tourism:** There are now **six major space companies** that are arranging or planning to arrange touristic flights to space: *Virgin Galactic, Blue Origin, SpaceX, Boeing, Axiom Space, and Space Perspective*.

Objectives and Strategic Vision of the Fund

- **Capital Infusion:** The capital fund is expected to encourage additional funding for later-stage development, instilling market confidence and providing early-stage financial support critical for growth.
- **Talent Retention and Domestic Development:** Many Indian startups relocate abroad due to better financial opportunities. The fund will work to retain talent within India, preventing brain drain and fostering the growth of homegrown space companies.
- **Five-Fold Expansion of Space Economy:** The government aims to grow India's space economy by five times over the next decade, supporting the establishment of India as a major global player in space technology.
- **Technological Advancements:** Investment in innovation will help advance space technology, supporting the development of sophisticated solutions for both domestic and international markets.
- **Boosting Global Competitiveness:** Enabling Indian companies to develop unique space-based solutions will reduce dependency on foreign technology and allow for stronger competition on a global scale.
- **Supporting Atmanirbhar Bharat:** By investing in indigenous startups, the fund underscores India's commitment to self-reliance, fostering a robust domestic space economy with fewer dependencies on external technology.
- **Creating a Vibrant Innovation Ecosystem:** The fund seeks to foster a dynamic space innovation ecosystem by nurturing startups and fostering collaborations between various sectors.

- ♦ It encourages the development of new ideas, products, and technologies, stimulating a continuous cycle of innovation in the Indian space industry.
- **Driving Economic Growth and Job Creation:** By supporting startups and entrepreneurs in the space sector, the fund is expected to boost economic activity, leading to the creation of thousands of direct and indirect jobs.
 - ♦ It aims to enable companies across the supply chain to scale operations, thus enhancing India's competitive position in the global space economy.

Challenges in India's Space Sector

- **Competition and Global Market Share:** To achieve this ambitious goal of **8% of the global market share**, Indian space companies must compete effectively on the international stage. They need to offer competitive services, cutting-edge technology, and reliable launch capabilities.
- **Private Sector Participation:** While the private sector has shown interest, there's a need for more substantial investment and commitment.
 - ♦ Companies are waiting to see sustained government support and clear policies that foster long-term collaboration.
- **Technology Development and Innovation:** Developing cutting-edge technologies, such as reusable launch vehicles, miniaturised satellites, and advanced propulsion systems, requires substantial investment and research. Balancing innovation with cost-effectiveness is crucial.
- **Regulatory Framework and Licensing:** Navigating licensing processes, export controls, and compliance can be complex. Clarity and transparency in regulations are critical for private players.
- **Infrastructure and Facilities:** Developing and maintaining such infrastructure requires significant capital. Collaborations between ISRO and private entities can help bridge this gap.
- **Talent and Skill Development:** Attracting and retaining talent is crucial. Efforts to enhance educational programs, skill development, and industry-academia partnerships are necessary.
- **Risk Management and Insurance:** The private sector needs robust risk assessment mechanisms and insurance options to mitigate financial losses in case of mission failures.
- **Collaboration with ISRO:** Finding the right balance—where private companies contribute while benefiting from ISRO's knowledge—is key. Ensuring fair competition and avoiding dependency is a delicate task.

Expected Impact of Venture Capital (VC) Fund on Employment and Economic Growth

- **Generate Direct Employment:** Jobs in engineering, data analysis, software development, manufacturing, and other technical fields are expected to increase. Each investment could potentially generate hundreds of direct job opportunities within these high-skill areas.
- **Indirect Employment Opportunities:** Additional employment will also be generated in fields associated with logistics, professional services, and supply chain management. These jobs will arise from the increased demand created by scaling businesses and manufacturing units.
- **Strengthening India's Space Workforce:** By fostering a skilled workforce in the space sector, the fund aims to build a sustainable talent pool, enhancing India's global standing and driving innovation through skilled professionals.

Positioning India as a Global Space Economy Leader

- At present, the Indian space economy is valued at approximately USD 8.4 billion, constituting a 2% share of the global space market.
- The government envisions scaling the space economy to USD 44 billion by 2033, including US \$11 billion in exports amounting to 7-8% of the global share.
- This growth is anticipated to be driven by private sector participation, including a promising pipeline of around 250 startups currently operating across various segments of the space economy in India.

Examples From Other Countries

- Many countries have recognised the strategic importance of the space sector and established space-focused VC funds to drive innovation, foster private-sector participation, and strengthen national capabilities. Examples include 30 million GBP Seraphim Space Fund of the UK, 86 million Euro Primo Space Fund of

Italy, US \$6.7 billion Space Strategic Fund of Japan and Neo Space Group (NSG) by Public Investment Fund (PIF), Saudi Arabia.

- Through its VC Fund, India aims to adopt a similar approach, supporting its startups and fostering a strong space innovation ecosystem while driving the local development of space technology and related services.

Conclusion

- The Rs. 1,000 crore VC Fund under IN-SPACe signifies a milestone in India's space sector evolution, demonstrating the government's commitment to achieving self-reliance and establishing India as a global leader in space.
- By providing risk capital, creating jobs, fostering innovation, and encouraging private sector participation, the fund aligns with national priorities to strengthen India's capabilities in the high-tech domain.
- It is not only a financial commitment but also a long-term strategic investment in building a vibrant, innovative, and sustainable space economy that aligns with the goals of Atmanirbhar Bharat.

Source: FE

Mains Practice Question

[Q] How will the recent influx of Rs 1000 crore in venture capital reshape India's space sector, and what potential challenges and opportunities does this investment present for the country's future in space exploration and technology?

