Space for Startups

What is this article about?

The successful launch of Vikram-S, India's first privately built rocket from start-up Skyroot, has focused welcome attention on the opening up of space to private enterprise. This article talks about PPP policy for space sector.

> *A public-private partnership (PPP, 3P, or P3) is a long-term arrangement between a government and private sector institutions.*
>
> *A PPP model is a funding model for public infrastructure projects and initiatives such as space sector projects, public transportation system, airport or power plant.*

What is the size of the commercial space market?

- **Global level** - The global commercial space market is worth $360 billion and expected to grow to at least $500 billion by 2030.
- Both government agencies and private-sector firms are intent on launching satellites to service demands across areas like internet broadband, climate monitoring, multiple geo-location-based services, etc
- **National level** - India's market share is just about $7 billion, which is tiny, given the impressive capacity developed by the Indian Space Research Organisation (ISRO).

What is expected now?

- If the eagerly awaited Space Policy will be released soon, multiple aerospace start-ups as well as large companies will enter a sector with explosive growth potential.
- Along with a larger share of global space market, Indian entrepreneurs could also develop many downstream applications and spin-offs.
- Cooperation with the private sector could help translate ISRO's demonstrated capabilities into exploiting business opportunities.
- Private participation could boost India's market share to $50 billion, or roughly 10%, by 2030.
- Previously ISRO used to do the R&D and farm out to the private sector the job of manufacturing components in accordance with specifications.

What could a change in policy mean?

- The change in policy envisages technology transfers from the ISRO to private players and also allows private players to use ISRO facilities for launches and tests as Skyroot

did.
- This should enable private enterprise to move up the value chain from being component suppliers to players in the aerospace sector.
- In turn, it would improve ISRO's own capacities since the agency could concentrate on more demanding tasks such as building bigger rockets and satellites with more capacity and more sophisticated capabilities.
- Given the connections among space science, weather management, defence, geo-location, communications, etc, the anticipated infusion of capital would enable a host of downstream sectors.

Which start-ups are there in the Indian space sector?

- Skyroot, a start-up with many ties with the ISRO, intends to launch two rockets a month once the technology stabilises.
- It is also looking to develop reusable rocket technology.
- Other Indian firms are attempting to build rockets, launch-vehicles, and satellites with different capabilities.
- In addition, there are opportunities in satellite internet services and in downstream applications.
- As ISRO goes ahead with planned manned missions, further areas of research will emerge.

Who are the big players in space sector?

- Apart from dozens of start-ups, big players are interested.
- ISRO will induct a batch of five Polar Satellite Launch Vehicles (PSLVs) which are being built by a consortium of Hindustan Aeronautics and Larsen & Toubro.
- This marks the first instance where an entire rocket has been built outside the agency (albeit using ISRO technology).
- Airtel and OneWeb are looking to enter the satellite broadband market as are several overseas players, including SpaceX and Amazon.

Will the PPP model work?

- This model of private-public cooperation has worked well for the US space agency NASA, which tenders out all its manufacture.
- It does some of its own designs and releases many patents.
- It also tenders out for innovative designs according to its specifications.

NASA's Artemis Mission will send a manned mission to the moon, and establish a space station in orbit around the moon and a base on the surface.

- For example, all the designs for NASA's Artemis Mission are being developed through private R&D working to NASA specifications.
- The adoption of a similar policy could turn India into an aerospace powerhouse.

Reference

1. Business-Standard | Space for start-ups
2. Techtarget | public-private partnership (PPP)

