Expanding India's share in global space economy.

What is the issue?

The Indian space industry is in need of some serious revolutions as it is lagging behind in the global space industry with its share in it being very minimal.

What is India's share in the global space economy?

- Today, the value of the global space industry is estimated to be $350 billion and is likely to exceed $550 billion by 2025.
- **India's share** is estimated as just **2%** of the global market.
- Globally, 17,000 small satellites are expected to be launched between now and 2030.

What is the current stance?

- Today, Indian Space Research Organisation's (ISRO) annual budget has crossed ₹10,000 crore, growing steadily from ₹6,000 crore five years ago.
- However, **demand** for space-based services in India **is far greater** than what ISRO can supply.
- So, **private sector investment** is critical.
- There is a **need for national legislation** to ensure overall growth of the space sector.

What are ISRO's thrust areas?

- **Satellite communication** – With INSAT and GSAT as backbone, it addresses the national needs for telecommunication, broadcasting and broadband infrastructure, disaster management services, etc.,
- **Earth observation –** By the usage of space-based imagery for a slew of national demands, like weather forecasting, disaster management and national resource mapping and planning. It is done using,
    1. Geographical Information Systems' (GIS) applications
    2. Indian Remote Sensing (IRS), RISAT, Cartosat and Resourcesat series.
- **Satellite-aided navigation –** The GPS-aided GEO augmented navigation (GAGAN) has civil aviation applications and is used for air traffic management over Indian airspace.
- Indian Regional Navigation Satellite System (IRNSS) or Navigation with Indian Constellation (NavIC) provides accurate positioning service for

civilian and military use.

What are some missions of ISRO?

- The **Chandrayaan** and the **Mangalyaan** missions, with a manned space mission, **Gaganyaan** planned for its first test flight in 2021.
- None of this would have been possible without **mastering the launch-vehicle technologies** which includes,
    1. Satellite Launch Vehicle (SLV) and
    2. Augmented Satellite Launch Vehicle (ASLV),
    3. Polar Satellite Launch Vehicle (PSLV) which has an enviable record.
    4. Geosynchronous Satellite Launch Vehicle (GSLV) which is still developing.
- Over the years, ISRO built a strong association with the industry, particularly with Public Sector Undertakings (PSUs) but most of the private sector players are Tier-2/Tier-3 vendors.

What 'New Space' start-ups are up to?

- **New Space entrepreneurship has emerged in India** who are not enamoured of the traditional vendor/supplier model.
- They see value in exploring **end-to-end services** in the Business-to-Business and Business-to-Consumer segments.
- Developments in Artificial Intelligence (AI) and big data analytics has led to their emergence.
- They see a role as a **data-app builder between the data seller (ISRO/Antrix) and the end user** by taking advantage of the talent pool, innovation competence and technology know-how.
- They are yet to take off in the **absence of regulatory clarity**.

What changes should be made in the Indian space industry?

- Clear **rules and regulations** are essential.
- As said above, **Private sector investment is critical**, for which a suitable policy environment needs to be created.
- **A new Space law for India** – With the aim of facilitating growing India's share of global space economy which requires a new kind of partnership between ISRO, the established private sector and the New Space entrepreneurs.
- **ISRO should actively embrace an exclusively civilian identity,** as the Ministry of Defence now setting up a Defence Space Agency and a Defence Space Research Organisation.
- **Small satellite revolution –**ISRO is developing a small satellite launch

vehicle (SSLV) expected to be ready in 2019.

- Along with PSLV, it is a prime candidate to be farmed out to the private sector.
- This requires giving it responsibility for Assembly, Integration and Testing (AIT) activities, which is now restricted to ISRO.
- **Village Resource Centres** – Years ago, ISRO launched this to work in collaboration with local panchayats and NGOs.
- Expanding this for rural areas has the potential to transform rural India.

Source: The Hindu

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