



# **DAILY EDITORIAL ANALYSIS**

**TOPIC**

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**GEOPOLITICS OF SATELLITE NET**

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## GEOPOLITICS OF SATELLITE NET

### Context

- As satellite internet becomes a crucial component of global connectivity, and the competition to dominate satellite-based communications is not just about technological advancement but also about national security, economic influence, and digital sovereignty.

### About Satellite Net

- It is **communications infrastructure in space** that has the potential to connect underserved and unserved regions, transforming education, healthcare, and commerce, which are critical for national security.
- However, the ability to control satellite networks can influence military operations, surveillance, and emergency response systems.
- As nations race to **secure orbital slots, frequency bands, and Low-Earth orbit (LEO) dominance**, the competition extends to domains like:
  - ♦ Cybersecurity and surveillance;
  - ♦ Digital colonization risks;
  - ♦ Sovereignty over data and infrastructure;
  - ♦ Military dual-use of satellites;
- It is not only technological but deeply geopolitical, with ramifications across spectrum allocation, national sovereignty, data governance, and digital dominance.

### Strategic Players

- **United States:** Dominates with **SpaceX's Starlink**, boasting over 5,000 satellites in orbit.
- **China:** Developing its own LEO constellation called **Guowang**, aiming to avoid reliance on Western networks.
- **Others:** **OneWeb (United Kingdom)**, **Amazon's Project Kuiper**

### India's Satellite Internet Strategy

- India still has regions where fiber optic cables have never reached, and cellular towers remain sparse.
- India is planning satellite internet networks via Bharti-backed OneWeb and Jio's collaboration with SES, positioning itself as a regional player.
- Recent partnerships between SpaceX and Indian telecom giants Airtel and Jio to expand Starlink services across India mark a fundamental shift in connectivity, sovereignty, and economic power.

### Radio Frequency Spectrum and Sovereignty

- The **International Telecommunication Union (ITU)** governs spectrum access on a **'first come, first served' basis**. It incentivizes a space race among major powers.
- For countries of the **Global South, particularly India**, it raises urgent questions about access parity.
- India has pushed for a more equitable model of spectrum distribution, echoing its calls for **Global South-centric multilateralism**.

### Challenges and Concerns

- **Monopoly Concerns in Satellite Internet:** With around 7,000 satellites already in orbit, SpaceX enjoys a first-mover advantage in the LEO internet market.
  - ♦ The dominance of US-based Starlink raises concerns about digital influence, particularly as China develops its rival GuoWang constellation.
- **Market Risks:** A monopolistic structure could lead to concerns about competition, pricing, and dependency.
  - ♦ Private companies wielding nation-state levels of influence over critical infrastructure pose strategic

risks, as seen when SpaceX briefly cut Ukraine's Starlink access during military operations.

- **Space debris:** With tens of thousands of satellites expected, orbital crowding poses serious environmental and collision risks.
- **Regulatory vacuum:** International rules governing LEO satellite operations are underdeveloped, creating loopholes.
- **Digital divide:** While promising connectivity for underserved regions, satellite internet might exacerbate inequalities if monopolized.

### Framework for Satellite Internet Geopolitics

- **Digital Sovereignty (High Economic Value, High Geopolitical Control):** Nations achieve both profitable telecommunications and strategic independence.
  - ♦ **Example:** China's GuoWang constellation, a state-controlled satellite system ensuring economic benefits while maintaining complete national control.
- **Market Dominance (High Economic Value, Low Geopolitical Control):** A highly profitable system, but control remains outside the host nation's hands.
  - ♦ **Example:** Starlink (SpaceX), offering strong commercial potential worldwide but limiting host countries' control.
- **Strategic Asset (Low Economic Value, High Geopolitical Control):** Satellites provide strategic value but lack commercial viability.
  - ♦ **Example:** India's limited indigenous satellite capacity, which is strategically vital but economically suboptimal.

### Indian Perspective

- **Technological Capability:** ISRO's SatCom division and private players like Tata, Reliance, and Bharti must scale domestic production and launch capacity to ensure self-reliance.
- **Strategic Autonomy:** India must avoid dependence on foreign orbital networks for critical services. Satellite-based internet must be embedded in national cyber strategy.
- **Legal Frameworks:** Updating the **Satellite Communications Policy and Spacecom Policy** is vital to regulate foreign players and protect digital sovereignty.
- **Diplomatic Positioning:** India can leverage forums like the Quad and BRICS to push for norms on fair access, orbital debris management, and peaceful space usage.

### Conclusion

- The race for satellite internet dominance is shaping global geopolitics, influencing digital sovereignty, economic dependencies, and national security.
- As India navigates this evolving landscape, balancing technological partnerships with strategic autonomy will be crucial for its future in the digital age.

Source: TH

### Mains Practice Question

[Q] How are emerging satellite internet technologies reshaping global geopolitics, and what challenges and opportunities do they present in securing digital dominance?

