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The other space race — the geopolitics of satellite net

1. Digital Divide and India's Connectivity Gap

- Many rural and remote parts of India still lack reliable internet connectivity.

- There is inadequate fiber optic infrastructure and limited cellular tower coverage in several regions.

- Satellite internet is seen as a solution to bridge this gap, providing coverage where traditional infrastructure is not feasible.

2. New Partnerships in Satellite Internet

- India has entered into strategic partnerships with global satellite internet providers, such as SpaceX's Starlink.

- These partnerships involve collaboration with Indian telecom companies to deliver internet access through low Earth orbit (LEO) satellites.

- Such developments are expected to transform the digital landscape in underserved regions of India.

3. Economic and Strategic Advantages for Indian Telecom

- Telecom providers benefit by extending services to remote areas without investing in expensive ground infrastructure.

- Satellite internet reduces the cost and time required to reach unconnected populations.

- Collaborating with international companies also brings in advanced technology and operational expertise.

4. Benefits for Satellite Internet Companies

- India offers a vast and growing user base, especially in rural regions with rising digital needs.

- By partnering with Indian firms, foreign satellite companies gain regulatory access and navigate local compliance more effectively.

- These arrangements also help align with India's policy focus on self-reliance and data localization.

5. Navigating Digital Sovereignty and Regulations

- India maintains strict rules on foreign technology operations and data usage.

- Satellite internet services must comply with regulations around local data storage, spectrum use, and technology transfer.

- Strategic partnerships allow India to retain partial control while benefiting from global expertise.

6. Geopolitical Implications of Satellite Internet

- Control over internet infrastructure is linked with national security and information sovereignty.

- India's alignment with democratic countries in the Indo-Pacific (e.g., through SpaceX partnerships) shows a preference for trusted, transparent systems.

- This helps India avoid dependency on authoritarian-controlled technologies like China's GuoWang satellite network.

7. Rising Concerns About Market Monopoly

- SpaceX has already deployed around 7,000 LEO satellites, giving it dominance in the space internet market.

- Competitors like OneWeb have only around 650 satellites, and Amazon's Project Kuiper is still in development.

- This market concentration could reduce competition, leading to pricing power and over-dependence on a single provider.

8. Models of Internet Governance and Sovereignty

- India is navigating between four models of internet governance:

  - *Digital Sovereignty Model*: Seen in China's GuoWang, where high control and profit stay within the country.

  - *Market Dominance Model*: India's current partnerships (like with SpaceX) bring economic value but limited strategic control.

  - *Strategic Asset Model*: India's own systems offer high control (e.g., ISRO satellites) but low commercial reach.

  - *Marginal Presence Model*: Seen in Amazon's Kuiper — low control and limited commercial activity in India so far.

9. India's Strategic Thinking and Missed Opportunities

- India is investing in its own space and satellite technology to gradually build digital sovereignty.

- Working with private Indian telecom firms ensures some level of domestic control while leveraging foreign capabilities.

- Policies mandating local data centers and technology sharing can strengthen national tech independence.

- However, the absence of state-run BSNL in these partnerships is a missed chance to ensure public sector involvement and reach.

10. Challenges and Future Outlook of Satellite Internet

- These developments could define a new model of global internet governance with built-in geopolitical considerations.

- However, if the service is not affordable, it may worsen the digital divide in rural areas.

- Global concerns such as space debris, satellite traffic management, and environmental risks must also be addressed.

11. Conclusion and Way Forward

- Satellite internet will soon be as essential as traditional ground-based networks for national development.

- India's challenge is to ensure universal access while maintaining strategic autonomy and participating in global cooperation.

- A balanced approach is key — leveraging private innovation, enforcing sovereign control, and ensuring affordability for all citizens.

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