next leap

Analysis of the market

Indian Space Economy

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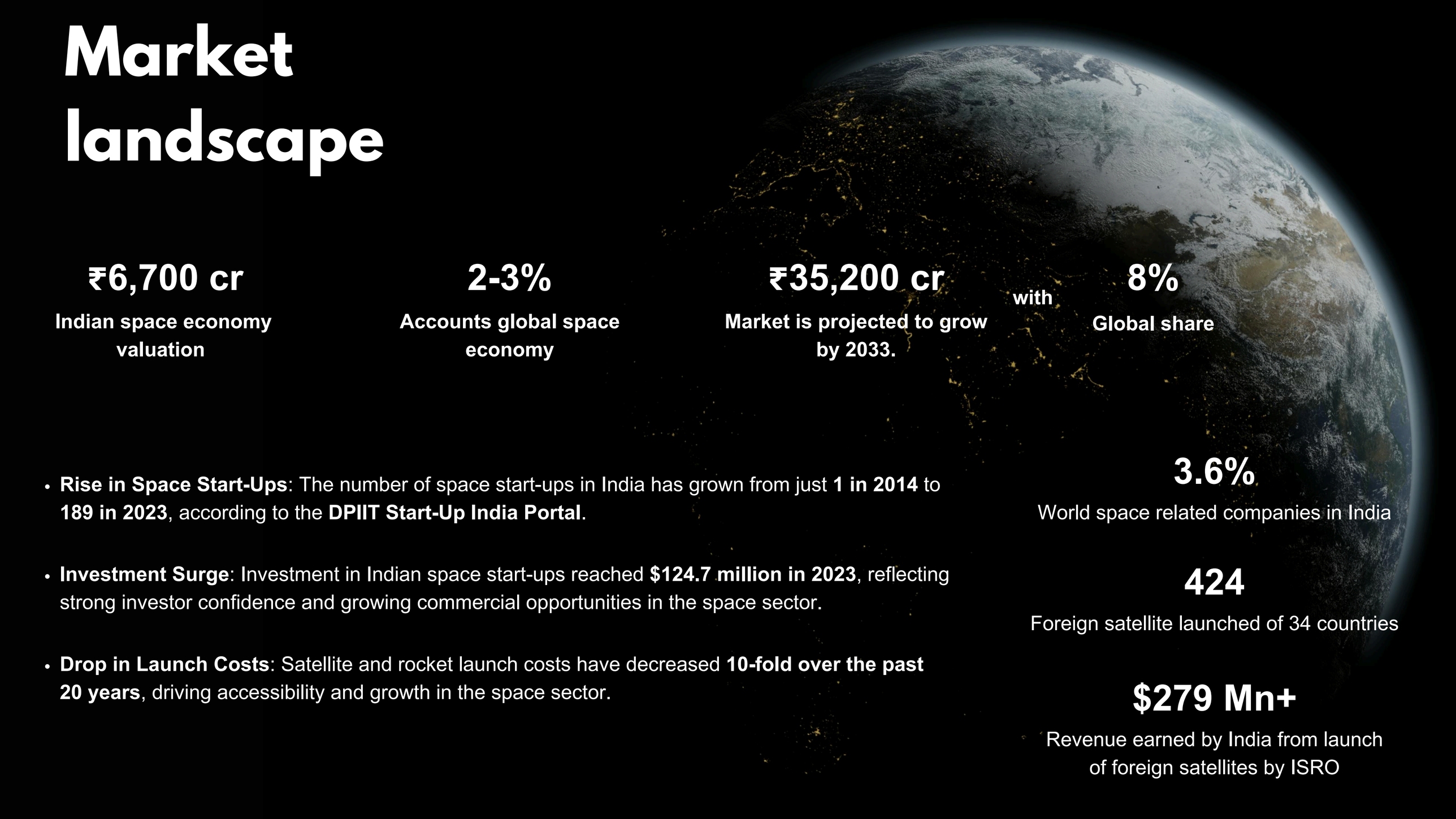
Market landscape



₹6,700 cr
Indian space economy valuation

2-3%
Accounts global space economy

₹35,200 cr
Market is projected to grow by 2033.

with

8%
Global share

- **Rise in Space Start-Ups**: The number of space start-ups in India has grown from just **1 in 2014** to **189 in 2023**, according to the **DPIIT Start-Up India Portal**.
- **Investment Surge**: Investment in Indian space start-ups reached **$124.7 million in 2023**, reflecting strong investor confidence and growing commercial opportunities in the space sector.
- **Drop in Launch Costs**: Satellite and rocket launch costs have decreased **10-fold over the past 20 years**, driving accessibility and growth in the space sector.

3.6%
World space related companies in India

424
Foreign satellite launched of 34 countries

$279 Mn+
Revenue earned by India from launch of foreign satellites by ISRO

What are the sub-segments?

Satellite Manufacturing

- Involves the development and production of satellites for **communication**, **earth observation**, and **scientific research**, serving both domestic and international needs.
- Provision of space launch vehicles and services for deploying satellites, including ISRO's **PSLV** and **GSLV**, as well as emerging private sector capabilities.

Ground Segment

- Includes satellite operation infrastructure, tracking, communication systems, and **data analytics** for industries like weather forecasting and geospatial applications, essential for satellite management and mission control.

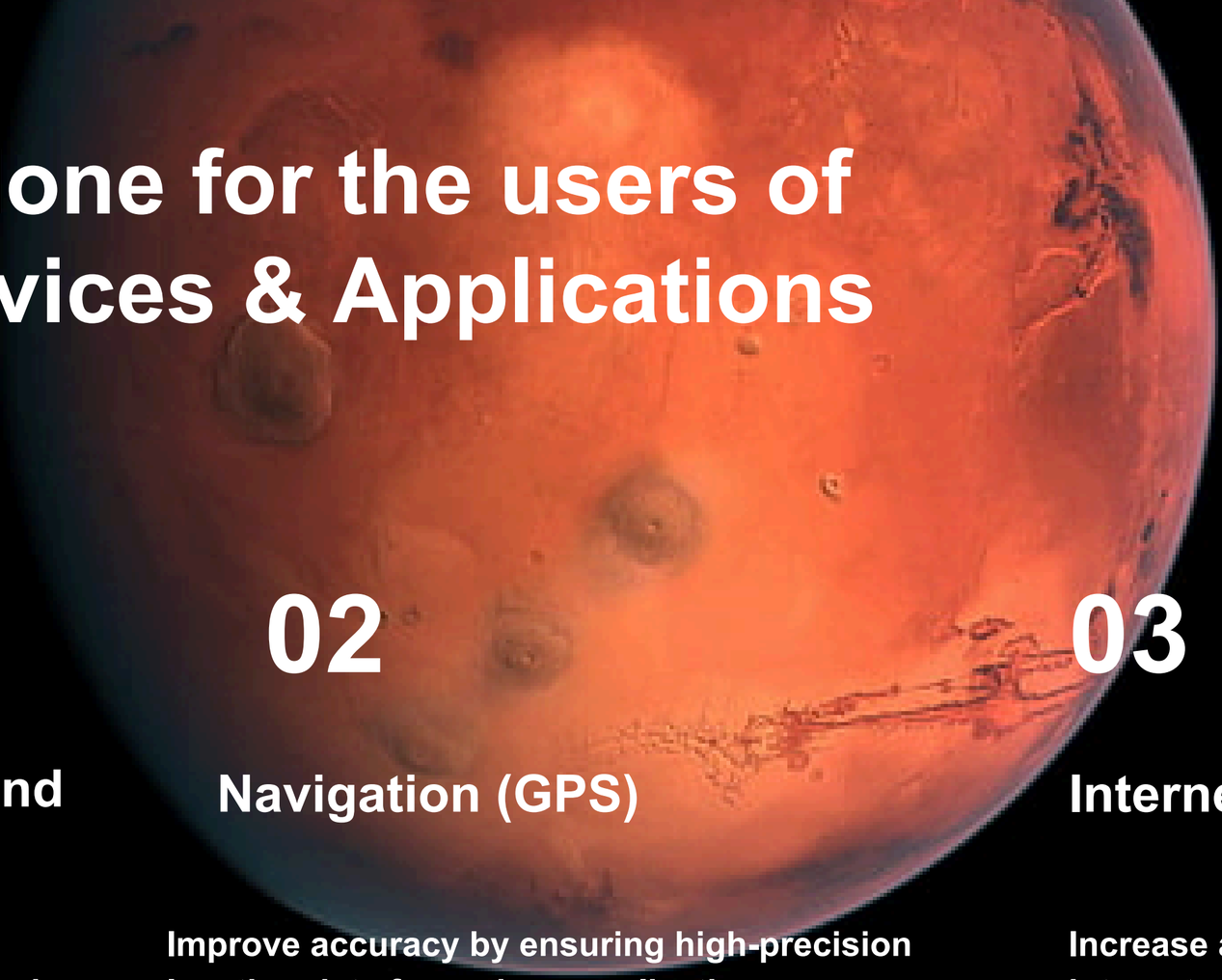
Satellite Services & Applications

- Encompasses **telecommunication**, **broadcasting**, **internet services**, **navigation (GPS)**, and **earth observation** for agriculture, disaster management, and environmental monitoring. This segment accounts for **60% of India’s space economy**.

Space Exploration (Emerging)

- Focuses on **lunar and Mars missions** (e.g., Chandrayaan, Mangalyaan) and future prospects like **space tourism** and **space mining**.

Jobs to be done for the users of Satellite Services & Applications



01

Telecommunication and Broadcasting

Ensure reliable connectivity and expand coverage in urban, rural, and underserved regions while enhancing service quality by improving bandwidth and reducing latency for a better user experience.

02

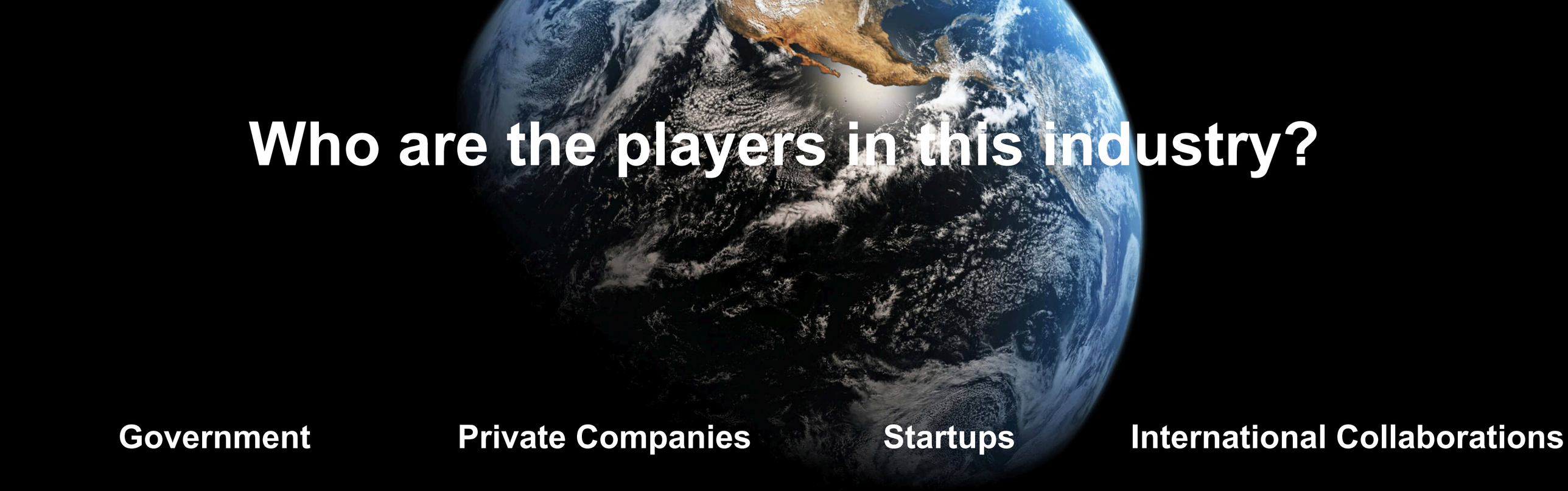
Navigation (GPS)

Improve accuracy by ensuring high-precision location data for various applications, including logistics and transportation; support emergency services by enhancing navigation systems for quick response in emergencies; and facilitate smart city solutions by integrating GPS data for urban planning and traffic management.

03

Internet Services

Increase accessibility by facilitating internet access in rural and remote locations, support e-governance and education by enabling online services and resources for enhanced digital literacy, and drive economic growth by creating opportunities for local businesses through digital platforms.



Who are the players in this industry?

Government

ISRO: Primary agency for space research and satellite launches.
Department of Space (DoS): Oversees ISRO and formulates space policies.
Antrix Corporation: Commercial arm of ISRO.
NewSpace India Limited (NSIL): Focuses on commercializing space technologies.

Private Companies

Skyroot Aerospace, Agnikul Cosmos: Launch service companies.
HAL, Larsen & Toubro (L&T), Dhruva Space: Satellite manufacturers.
MapmyIndia, Astrome, Aniara Communications: Downstream Services

Startups

Pixxel, SatSure, Astrofy: Focus on satellite imagery, data analytics, and democratizing satellite access.

International Collaborations

NASA: Joint missions and research initiatives.
European Space Agency (ESA): Collaborative projects in earth observation.
International Space Station (ISS): Research participation.
Foreign Satellite Operators: Partnerships for launches and data sharing.

Key parameters value propositions

Cost Efficiency

Affordable Launches and Lower Costs: Offering **cost-effective launch services** (e.g., ISRO's PSLV) and providing **affordable communication and data services**, especially compared to global competitors.

Innovation and Technology

Developing **cutting-edge satellites** with enhanced capabilities (e.g., **Dhruva Space**, **Pixxel**), while driving continuous **R&D in satellite technology**, **earth observation**, and **data analytics**.

Reliability and Accuracy

Delivering **reliable and accurate data** in **navigation (GPS)**, **earth observation**, and **communication**, with a proven track record of **successful launches** and operations (e.g., ISRO's consistent success).

Speed and Accessibility

Ensuring **quick turnaround** for satellite launches and services, while providing essential **communication and data** in **remote** or underserved regions (e.g., broadband by **Astrome**).

Recent trends in this market

Rise of Space Startups

The rapid growth of **space startups** from **1 in 2014** to over **190 in 2023** is driving innovation in satellite manufacturing, launch services, and downstream applications.

Private Sector Involvement

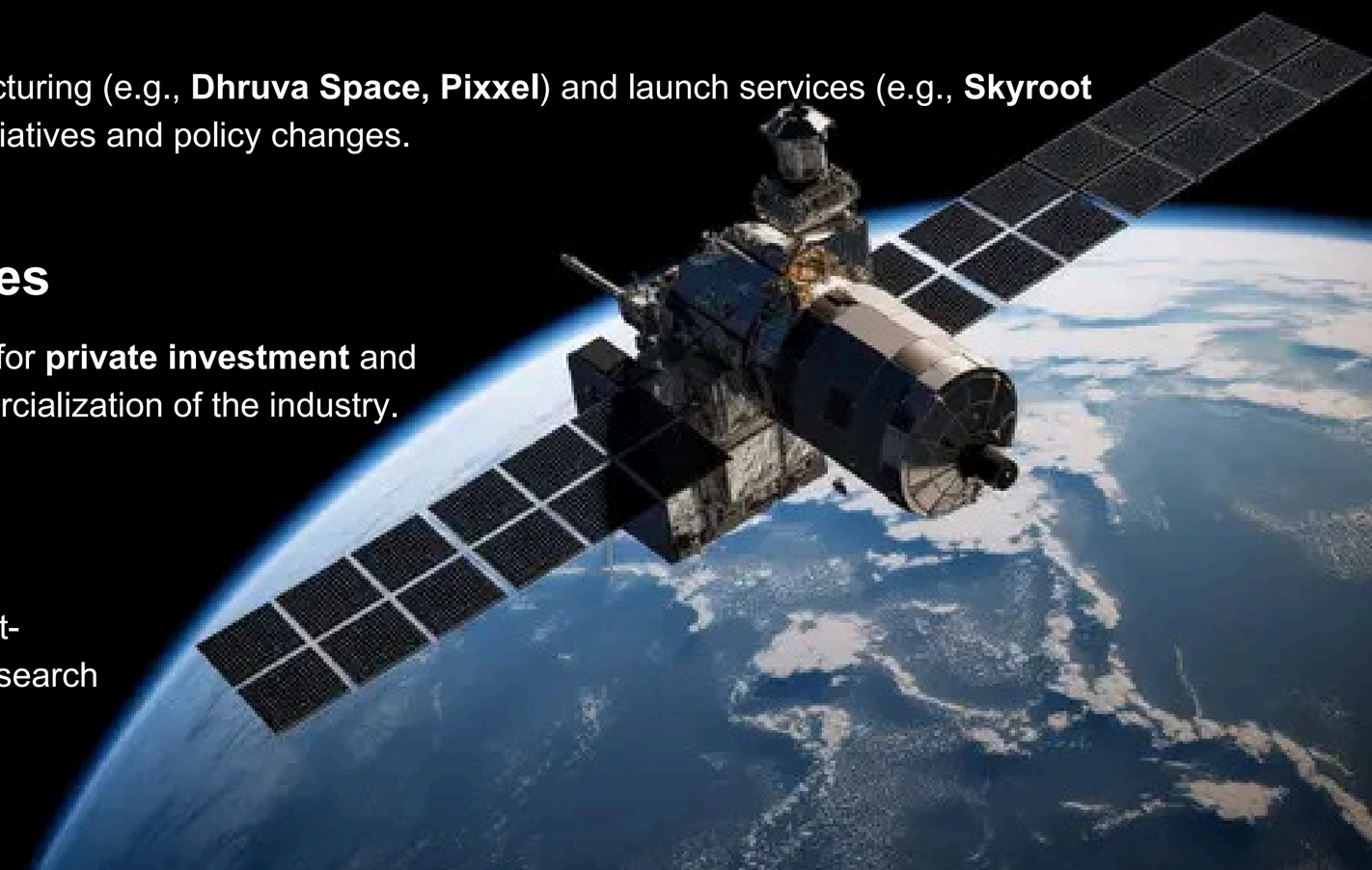
Increased participation of private companies in satellite manufacturing (e.g., **Dhruva Space, Pixxel**) and launch services (e.g., **Skyroot Aerospace, Agnikul Cosmos**), encouraged by government initiatives and policy changes.

Government Support and Policy Changes

The Indian Space Policy 2023 is opening up the space sector for **private investment** and encouraging **public-private partnerships**, boosting the commercialization of the industry.

Miniaturization of Satellites

Development of small satellites and nano-satellites, offering cost-effective solutions for communication, earth observation, and research applications.



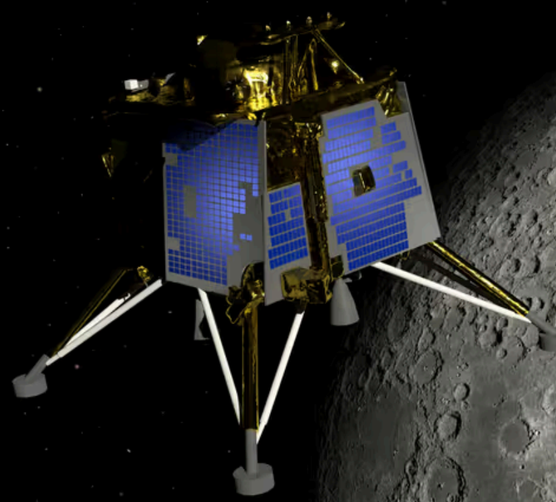
How do you see this market changing in the future?

Growth in Satellite Constellations

The development of **large satellite constellations** for purposes such as global internet coverage and enhanced earth observation will become more prevalent, improving service availability and quality.

Integration with Emerging Technologies

The integration of **AI**, **machine learning**, and **big data analytics** with satellite data will enhance decision-making processes in sectors like agriculture, disaster management, and urban planning.



Enhanced International Collaborations

Strengthening ties with **international space agencies** and **organizations** will lead to shared missions, technology transfers, and a more integrated global satellite network.

Space Exploration Initiatives

The **expansion into space exploration** will accelerate with potential missions to the **Moon**, **Mars**, and beyond, leading to new **scientific research** opportunities. Concurrently, **space tourism ventures** and global partnerships are expected to emerge over the next decade, while **satellite-generated data analytics** will increasingly support sectors like **urban planning**, **smart cities**, and **energy management**.

Differentiation factors for a new entrant in Space market

Innovative Technology

Develop cutting-edge satellite technology, such as **miniaturized satellites** or advanced **propulsion systems**, to offer unique capabilities that outshine existing solutions.

Customized Solutions

Offer **tailored services** that meet specific industry needs, such as agriculture, urban planning, or disaster management, ensuring high relevance and impact for clients.

Enhanced Data Analytics

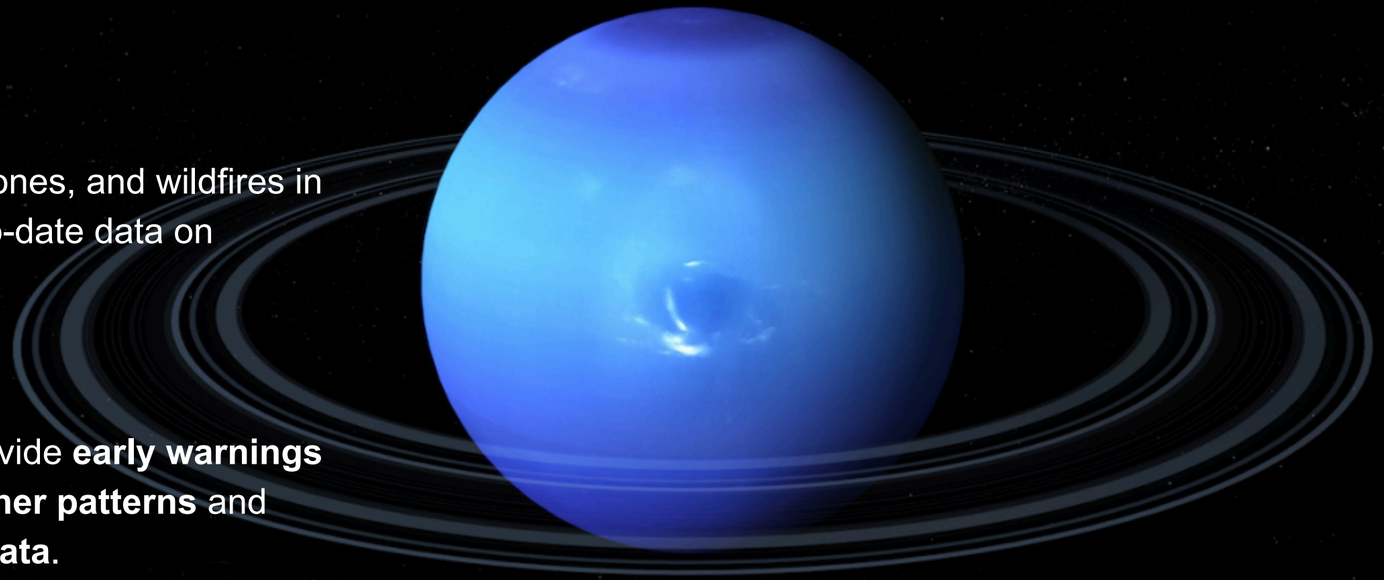
Provide **advanced data analytics** and insights derived from satellite data, enabling clients to make informed decisions and drive efficiencies in their operations.

Robust Partnerships

Establish strategic **alliances with technology providers**, research institutions, and international space agencies to leverage expertise and broaden service offerings.

If you were to build a product in this market for the chosen sub-segment, what would you focus on?

I would build a **Disaster Management and Response Platform** in the **Satellite Communication and Data Applications** sub-segment, using satellite data to enhance disaster preparedness, response, and recovery. The platform would provide **real-time monitoring**, **early warnings**, and **damage assessments**, improving coordination and resilience during natural disasters.



Real-Time Disaster Monitoring

Utilize satellite imagery to track disasters like floods, earthquakes, cyclones, and wildfires in real-time, offering governments, relief agencies, and communities up-to-date data on disaster intensity and extent.

Early Warning System

Implement predictive analytics powered by **machine learning** to provide **early warnings** for potential disasters. For example, **flood predictions** based on **weather patterns** and **river data**, or **risk assessments** using **vegetation** and **temperature data**.

Damage Assessment and Response Planning

Implement predictive analytics powered by **machine learning** to provide **early warnings** for potential disasters. For example, **flood predictions** based on **weather patterns** and **river data**, or **risk assessments** using **vegetation** and **temperature data**.

Sustainability and Environmental Monitoring

Leverage the platform for **long-term environmental monitoring** to assist governments in tracking the **impact of disasters** on ecosystems and creating **sustainable recovery plans** that reduce **future risks**.

Thank you

FunFact:

There are more stars in the universe than grains of sand on all the Earth's beaches.

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