



Mains Practice Question

Q. “Starlink will change the internet connectivity “. Discuss the utility of the project in bringing remote connectivity. (250 words)

30 Nov, 2022 GS Paper 3 Science & Technology

Approach

- Start your answer with describing Project Starlink.
- Discuss the utility of Starlink in helping remote connectivity.
- Conclude accordingly.

Introduction

- It is a SpaceX project to build a broadband network with a cluster of orbiting spacecrafts that could eventually number in thousands.
- The Starlink satellites carry Hall thrusters, which use electricity and krypton gas to generate an impulse, to manoeuvre in orbit, maintain altitude and guide the spacecraft back into the atmosphere at the end of their mission.
- Starlink will be positioned in the Low Earth Orbit (LEO) **around 500km-2000km from earth, compared to stationary orbit satellites** which are approximately **36,000km away**.

Body

- **Utility of Starlink Project:**
 - **Low Latency:** Latency, or the time needed for data to be sent and received, is contingent on proximity.
 - As LEO satellites orbit closer to the earth, they are able to **provide stronger signals and faster speeds** than traditional fixed-satellite systems.
 - Additionally, because signals travel faster through space than through fibre-optic cables, they also have the potential to rival if not exceed existing ground-based networks.
 - **Coverage:** The signals from one geostationary satellite can cover roughly a third of the planet — and three to four satellites would be enough to cover the entire Earth.
 - **Easier Connectivity:** As satellites appear to be stationary, it is easier to link to them.
- **Issue related to satellite-based broadband:**
 - **Increase Space Debris:** Due to an increase in space debris and an increased risk of collision, these constellations of Internet satellites will make it impossible to observe other space objects and distinguish their signals.
 - **Hindrance of Bad weather:** Weather conditions have an impact on how satellite internet signals travel. Storms, rain, and strong winds may result in a weak signal and prevent the Earth from receiving internet service.

Conclusion

Starlink project will be a revolution in providing satellite-based internet to remote parts of the world and will reduce digital inequity.

PDF Refernece URL: <https://www.drishtias.com/mains-practice-question/question-1470/pnt>