STUDY NOTES · BASIC CONCEPT

How does satellite internet work?

Science & Technology

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1. Satellite internet works by delivering connectivity from space instead of using underground cables or mobile towers.
2. When a user connects to the internet, data is sent from their device to a modem and satellite dish installed at home.
3. This dish transmits the signal upward to a satellite orbiting the Earth. The satellite then relays the signal to a ground station, also called a gateway, which is connected to the global internet network.
4. The requested data, such as a webpage or video, is sent back from the ground station to the satellite, and then down to the user’s dish, completing the connection.
5. Satellites used for internet operate in different orbits. Low Earth Orbit (LEO) satellites are much closer to the Earth, which reduces delay and allows faster speeds, making them suitable for video calls and streaming.
6. Medium Earth Orbit (MEO) and Geostationary Orbit (GEO) satellites are farther away and tend to have higher latency.
7. Satellite internet is especially useful in remote and rural areas where laying fiber cables is difficult or expensive. However, it can be affected by weather conditions like heavy rain and usually requires a clear view of the sky for reliable performance.

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