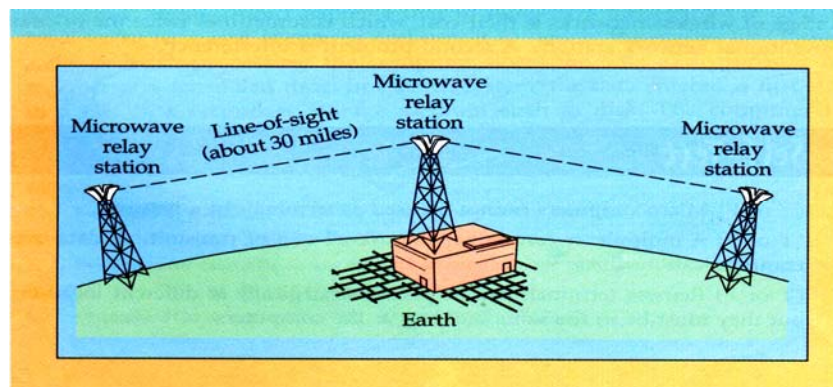


➤ Microwave and satellite Transmission

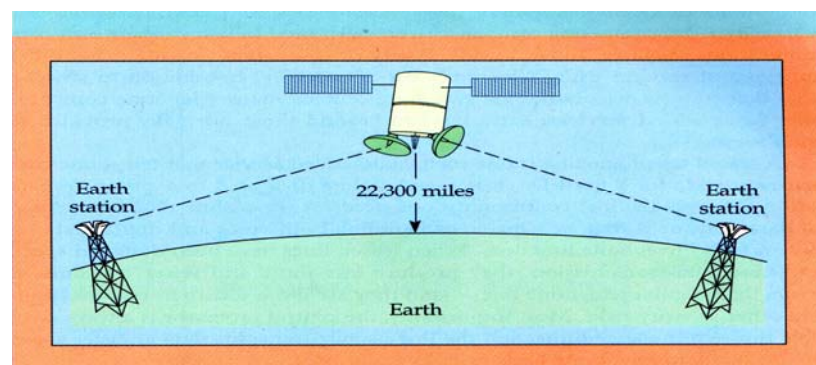
Most networks use either hardwired cables or telephones for networking. Some, however, transmit and receive data over very long distances by microwave signals. Microwave networks are usually more expensive, and they tend to be used where cables are not practical, for transmission across waterways or highways, for example, in sparsely populated areas or over rough terrain.

Microwave and satellite signals travel in a straight line. Therefore, they require transmission stations to redirect them around the earth's curved surface. See fig. Fig.

Note: more than half of the standard telephone transmissions make use of microwave technology.



In case of satellite stations, the communication satellites* serve as microwave relay stations. See fig. fig.



* Actually hundreds of satellites are in orbit.

➤ **Other Wireless Transmission**

The primary benefits of wireless networks are reduced cabling costs and improved portability.

The primary disadvantage of wireless networks is their cost (sometimes twice the price of conventional network stations). A second problem is interference.

➤ **ISDN – Integrated Services Digital Network**

This Technology uses another type of line for direct digital transmission. ISDN adapter can move data at 128 Kbps – a vast speed improvement over any modem.

ISDN circuit includes two phone lines, so a user can use one line to connect to the Internet and the other to talk on the phone at the same time.

Both the adapter and phone service are needed and possibly even a new phone line (depending on current service).

➤ **DSL – Digital Subscriber Line**

This service uses advanced electronics to send data over conventional copper telephone wires. DSL modems are used. DSL spreads the analog signals over a large range of frequencies, acting as though dozens of modems were sending signals at the same time.

It has high speed (slowest speed is many times faster than standard 56-K modem. Higher speeds aimed at the business market). You can use your telephone at the same time that you are surfing the Web. Special equipment is needed.