IT Fundamentals

Unit - Networking

Lesson 2.4.1 - Internet Service Types

IT Fundamentals Objectives (FC0-U61)
Objective 2.4 - Compare and contrast common Internet service types.
- Fiber optic
- Cable
- DSL
- Wireless
  - Radio frequency
  - Satellite
  - Cellular

Grade Level(s)
8, 9

Cyber Connections
- **Networks & Internet**

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Internet Service Types

What is Right for You?

As consumers, we want to make sure we get a "good deal" (subjectively) on Internet service. One concern is *availability*, the probability that a system will be functional. Why pay for something that does not work? Then there is the issue of speed, referring to throughput and bandwidth. *Throughput* refers to the rate of data transfer, while *bandwidth* relates to the "size" of the connection in terms of getting data from point A to point B. There are both wired and wireless options, but differ depending upon where you live.

Light Speed

The clear winner in terms of speed is *fiber optics*. Fiber optic internet can reach speeds up to 10 Gbps. A fiber optic cable is a network cable that contains strands of glass fibers inside an insulated casing. These cables work by having light travel down the cable by bouncing off the walls of the cable repeatedly.

Cable vs. DSL

Most parts of the United States are without the option of fiber optics (still relatively new) because it takes time to bury cable and expand from cities to more rural areas. However, in the majority of areas, DSL and Cable are common choices. DSL, short for *digital subscriber line*, is lower bandwidth and comes over the phone line. DSL speeds typically range between 5-35 Mbps. Cable on the other hand is capable of reaching speeds up to 500 Mbps, short of fiber optics max speed, but significantly faster than DSL.

Cut the Cord

For those looking to truly "cut the cord" or unable to get a wired connection, there are a few wireless options. RF (*radio frequency*), *satellite*, and *cellular* internet is available worldwide but come with some major drawbacks. Stability is a big issue with wireless internet options, specifically if an application requires constant internet connection, like streaming video or playing games online. The benefit of these internet options however is mobility. We cannot take our wired internet options with us, but wireless internet is accessible nearly everywhere.

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