

## Different types of communication/transmission media

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Data communication involves transmission of digital information to different electronic devices through wireless or cabled connections. The two commonly used computer communication media used are wired and wireless media.

### a) Wired Media

Data transfer through physical connections is referred to as wired media in that signals are sent to other external devices from one computer in a network. Computers can be interconnected to share files and devices in a network by means of cabling which facilitates faster communication of information. Wired media is a faster data communication that provides high speed transfer of signals over long distances and is the most reliable media for message sending.

Wired media is categorized into three types of data communication which enables connection of different types of network. These cables include:

#### 1. Coaxial cable

This is most common wired media that many electronics use to transfer data and it is designed with two parallel copper conductors. It has a solid central copper conductor that transmits signal and is coated with a protective cover to reduce electromagnetic interference. Coaxial cable is found in different gauges at affordable prices and is easier to work with. They are easy to install and can support up to 10Mbps capacity with medium attenuation. Despite its popularity, the only serious drawback it has is that the entire network is always affected with a single cable failure.

#### 2. Twisted pair cable

Twisted pair cables are found in two types and these include **unshielded** and **shielded** twisted pair cables. It is commonly used because it is lighter and inexpensive. They are made up of twisted solid copper wires which help to reduce vulnerability to EMI and cross talk effects. This type of cables is cheaper and can support up to 100mps speed capacity.

#### 3. Fiber optic

Unlike other types of cables, fiber optic uses electrical signals for communication and is made up of reflective cladding that prevents loss of light in the glass core. Although it is very expensive and hard to install, optic cables can support at least 2gbps and are not vulnerable to EMI interference. It has also got very fast data transmission and very low attenuation compared to other data cables.

## **b) Wireless Media**

This type of data communication media involves networking of multiple computers through a wireless connection. Creating a wireless connection is much easier since no physical connection is required and can connect multiple computers in a room. Unwired media uses space or air as the transmission medium for electronic waves. Some of the wireless media are the satellites, radio, Bluetooth and Wi-Fi among others. Installation of wireless network is much easier and faster compared to the wired media which require an expert to do the configuration. Through wireless settings, you can also transfer huge files of data to any networked computer since the unwired media supports very high bandwidths just like the cabled network.