

INTRODUCTION TO TELECOMMUNICATIONS

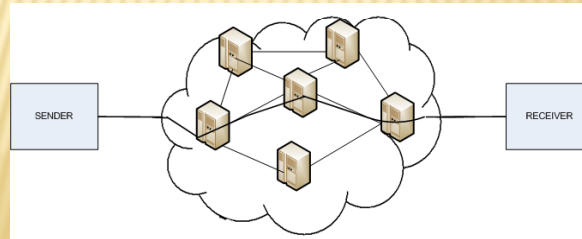
LECTURE: 5

CIRCUIT SWITCHED NETWORK

- ✘ In Circuit Switch, a fixed communication path (channel) is established between caller n called party.
- ✘ The path was formed by two wires completing end to end electrical circuit for communication.
- ✘ If the channel fails, the communication disrupts.

CONT'D

- ✘ Referred to as Connection Oriented Services
 - + Connection oriented services needs handshaking before starting the communication
 - + Handshaking: is the exchange of information between devices before initiating the communication.



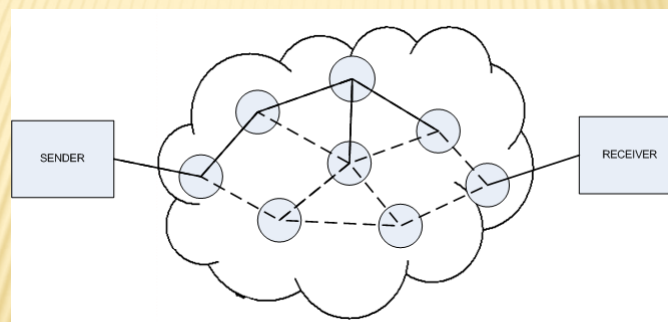
PACKET SWITCHED NETWORK

- ✘ Break the data in to Chunks (Packets)
- ✘ These packets are transmitted from caller to the receiver over the network
- ✘ Packets do not necessarily follow a fixed path way from source to destination
- ✘ Routing algorithm are used to direct the packets from caller to called party.
- ✘ The only time a route is changes is when a path is blocked

CONT'D

- ✘ Considered as Connection-less Service
 - + Connection-less service does not requires handshaking before transmission of data
 - + It work fine with data as they have no fixed path and no guarantee of packets delivery between source and destination.
 - + Voice must arrive in sequence.

CONT'D



CAS V CCS

× CAS (Channel associated signaling)

- + Also referred as in band Signaling
- + Uses the same transmission facility channel for Voice and Signaling
- + Sub-types : Line Signaling, Register Signaling.

CCS

× CCS (Common Channel Signaling)

- + Also Referred to as out of band signaling
- + Voice and signaling information travels on separate path.
- + Uses one channel for signaling other for voice.
- + Example: SS7 Signaling

TYPE OF EXCHANGES

- ✘ **Local Exchange:** Customer is directly connected the local exchange. Lines from homes and businesses terminate at a local exchange

- ✘ **Tandem Exchange:** It interconnects a group of local exchanges
 - + National Tandem Exchange (between different cities)
 - + Regional Tandem Exchange (with in the city)

- ✘ **International Gateway (Transit Exchange):** is a telephone switch that forms the gateway between a national telephone network and one or more other international gateway exchanges, thus providing cross-border connectivity