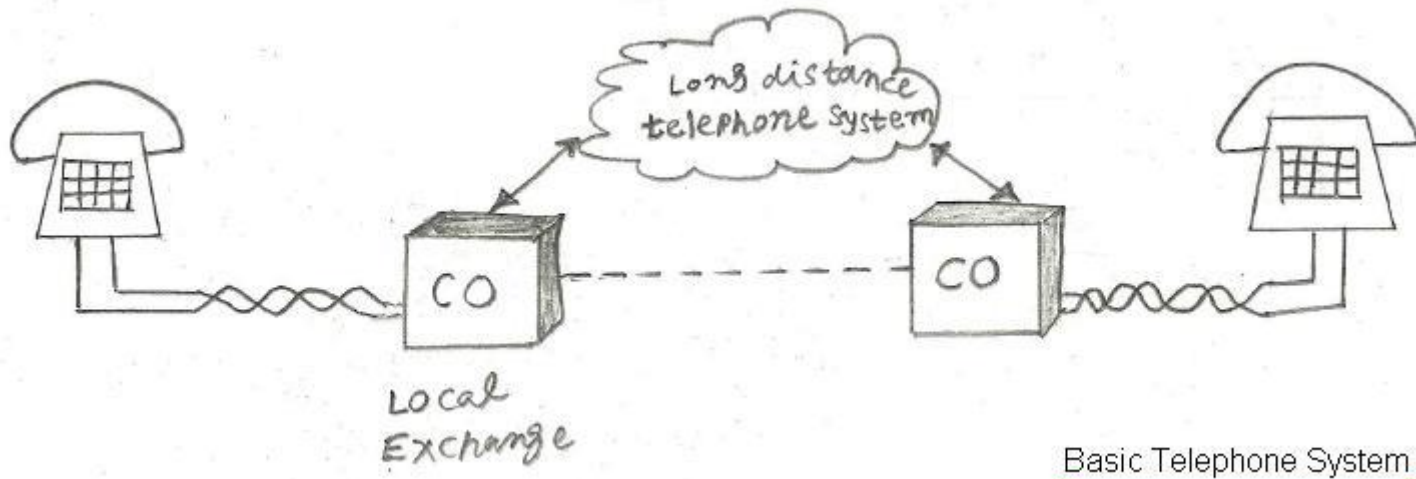


# Telecommunication Systems

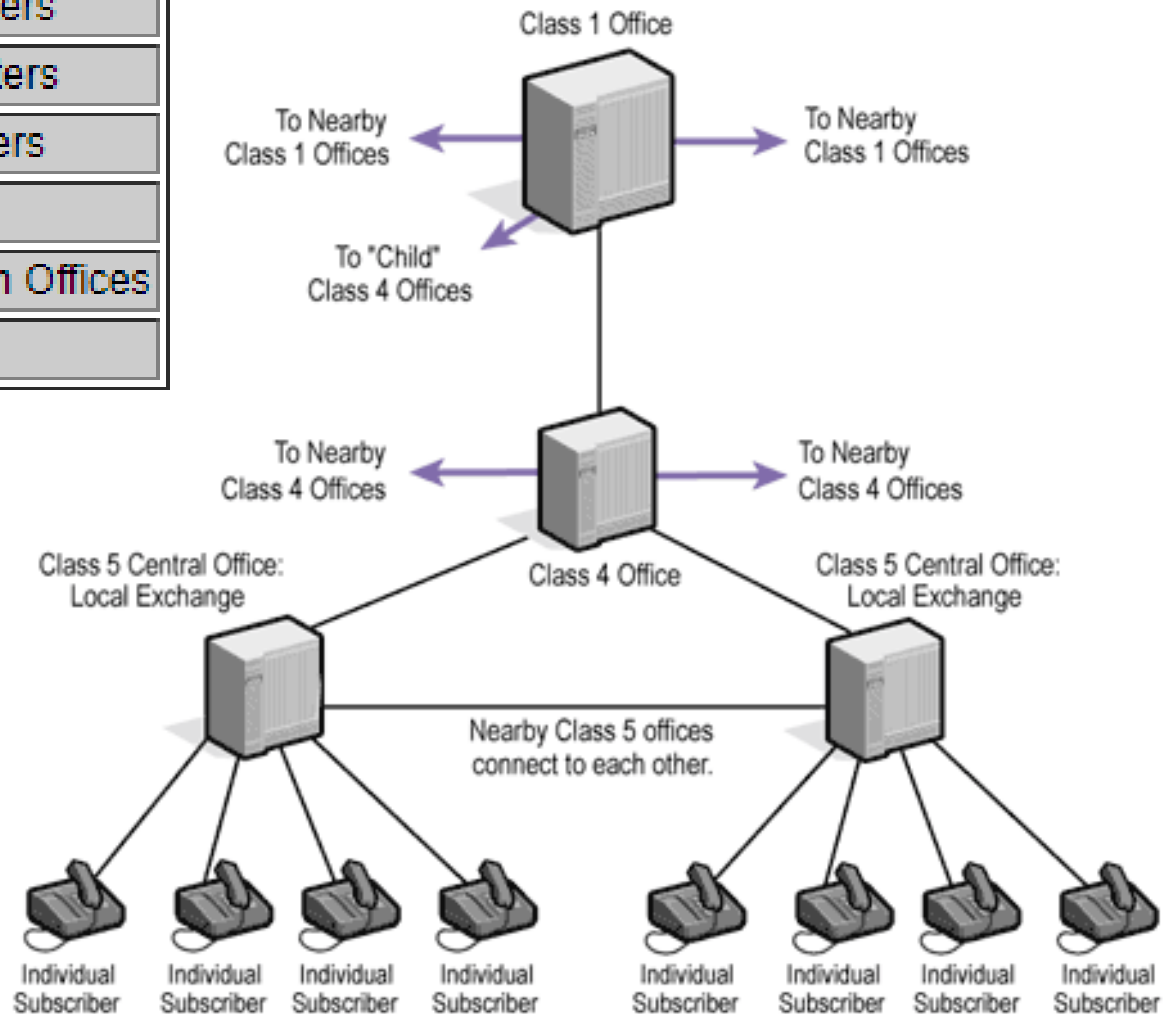


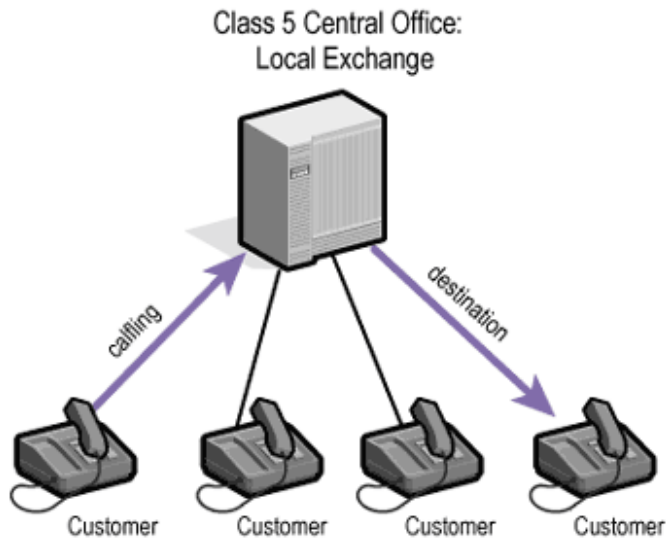
- All the landline telephones are connected with the use of twisted pair cables to the local exchange or central office(CO)
- Thousands of lines are connected to the central offices like this.
- All the COs are connected with the use of some medium either fiber optic or wireless link etc in the large telephone system
- Connection between CO & Subscriber is called Access Network
- CO to CO connection is carrier network. It is also called back-haul network

- An access network is a user network that connects subscribers to a particular service provider and, through the carrier network
- A carrier network is the proprietary network [infrastructure](#) belonging to a [telecommunications](#) service provider such as Verizon, AT&T or Sprint. Telecom carriers are authorized by regulatory agencies to operate telecommunications systems. Carrier networks are made up of large, complex configurations of [hardware](#), interconnected to provide communications services to people spread over large geographic areas
- A **radio access network (RAN)** is part of a mobile [telecommunication](#) system. It implements a [radio access technology](#). Conceptually, it resides between a device such as a [mobile phone](#), a computer, or any remotely controlled machine and provides connection with its [core network](#) (CN)  
(This is Access Network)

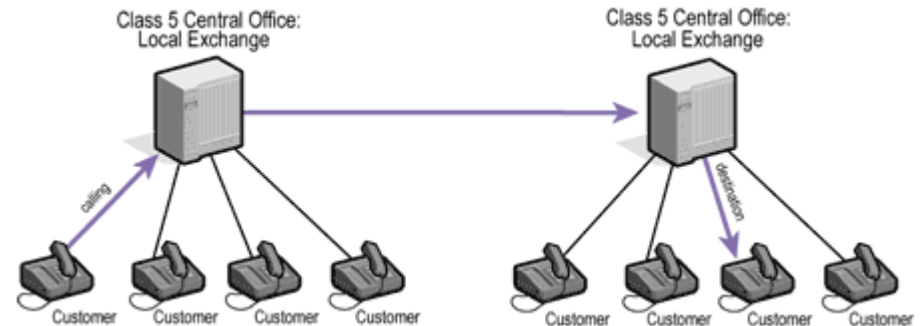
# Telephone System Hierarchy

Class 1: Regional Centers
Class 2: Sectional Centers
Class 3: Primary Centers
Class 4: Toll Offices
Class 5: End Offices Tandem Offices
Customers

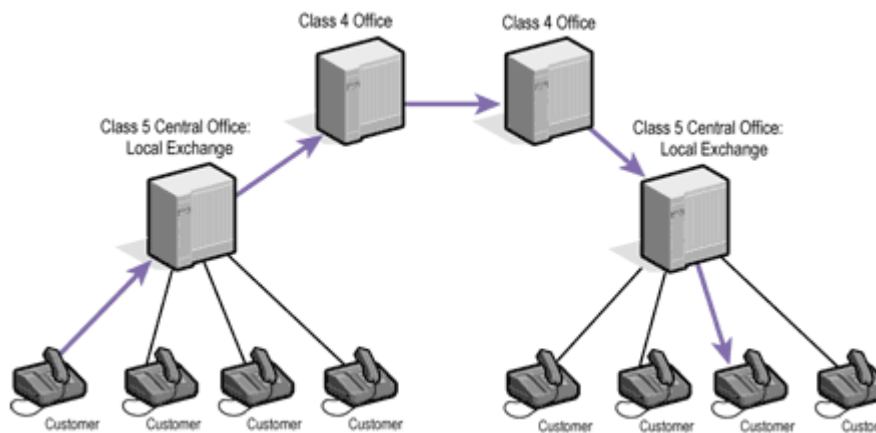




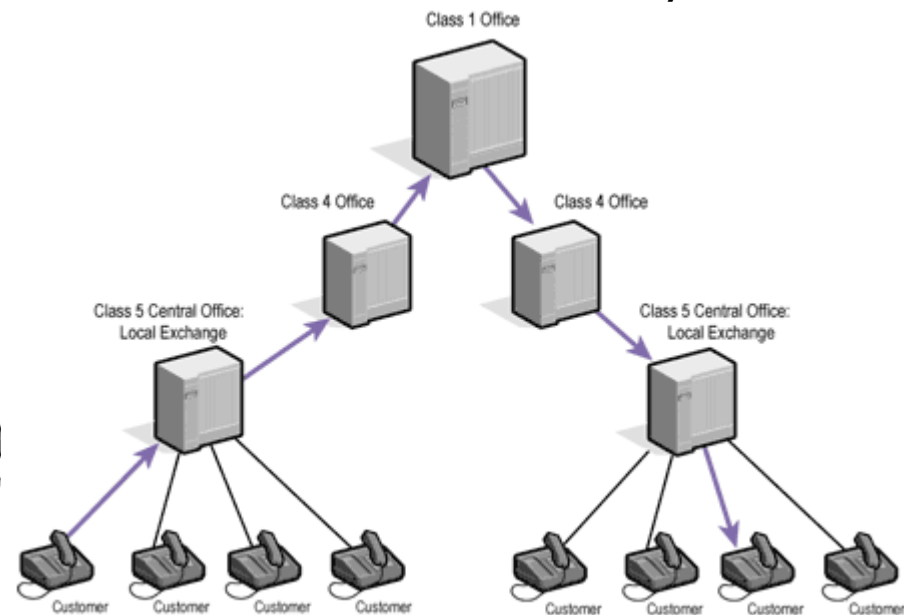
Call within same exchange



Calling handoff



Tandem Switching



Switch hierarchy