

University of Diyala

Telecom Switching Systems

Lecture 8

4th Stage

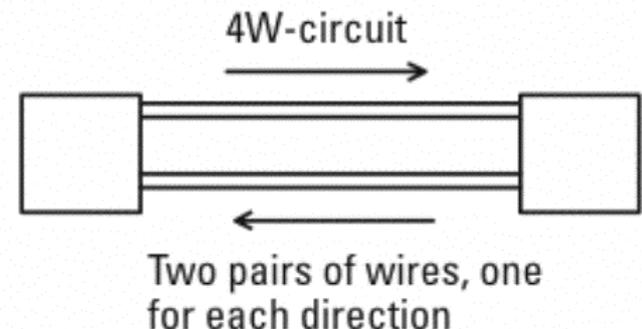
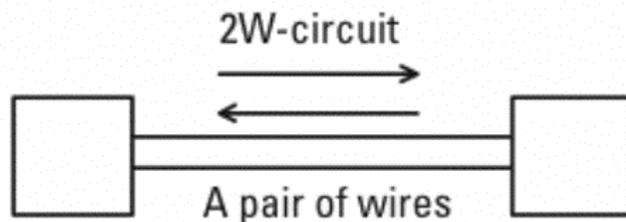
Communication department / Engineering collage

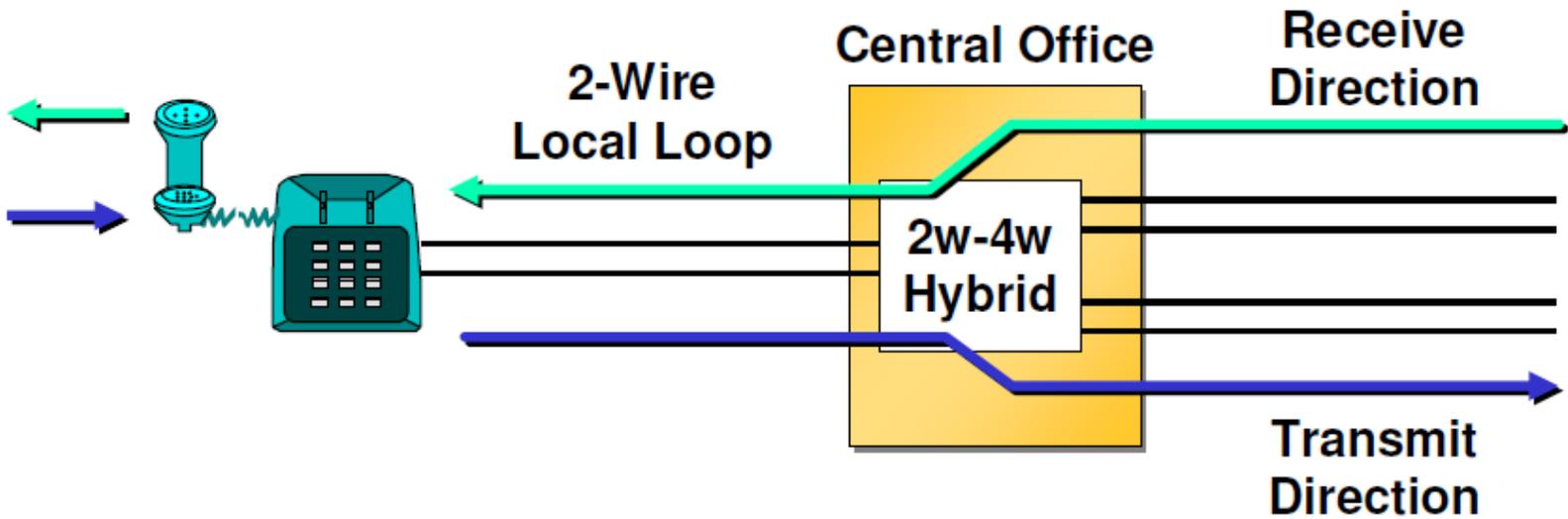
Lecturer Marwa Mohammed

Four wire circuits

The term four wire implies that there are two wires carrying the signals in one direction and two wires carrying them in opposite direction. The four-wire circuit gets its name from the fact that it uses four conductors to create two complete electrical circuits, one for each direction. The two separate circuits (channels) allow full-duplex operation with low crosstalk.

- Any use of telephone channels involves two unidirectional paths, one for transmission and one for reception.
- The local loop, which connects a telephone to a local exchange is a two-wire (2W) circuit that carries the signals in both transmission directions.
- To connect a 2W local loop to a 4W network a circuit called a 2W/ 4W hybrid is needed.





- 2- to 4-wire hybrid combines receive and transmit signals over the same pair
- 2 -wire impedance must match 4-wire impedance

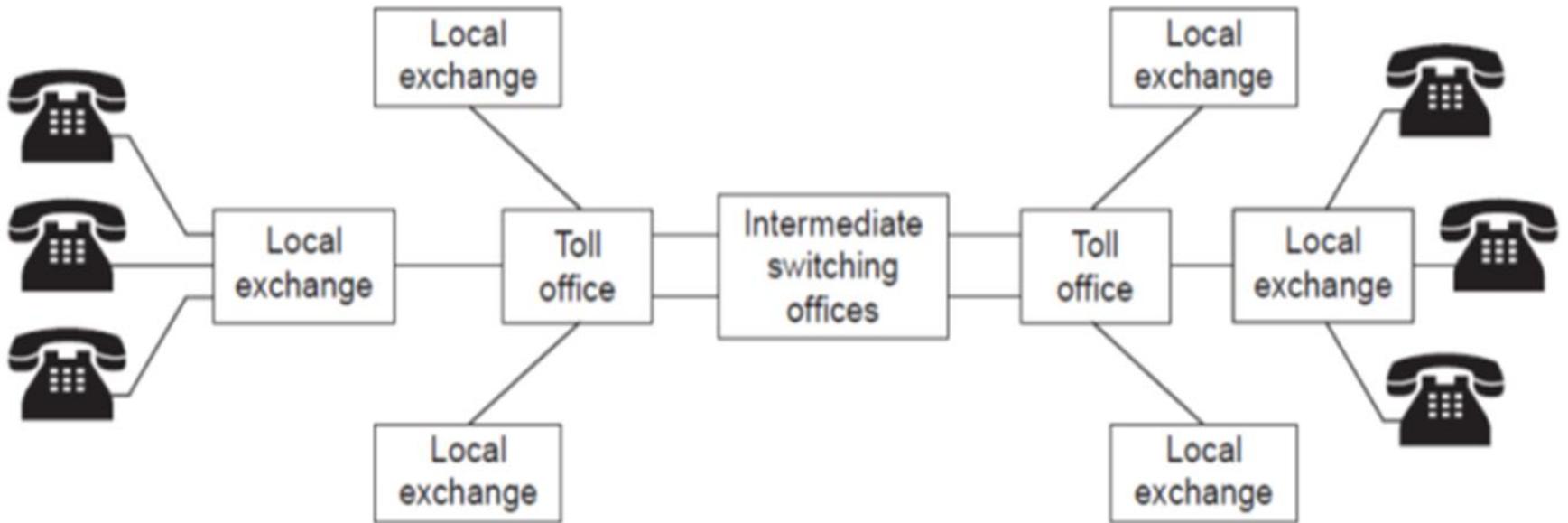


Fig. The simple arrangement of the two wire and four wire transmission