(3) Starting & ending flags with bit stuffing

Sender scans the msg bit by bit, and if 5 consecutive 1's ~~0's~~ are found, it appends at 0 there.

01111110 → 111110

The receiver removes that extra 0.

lecture-12
SDE

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Multi-stage switches

- First stage - N/n nXk switches
- Intermediate - k N/n X N/n "
- Third stage - N/n kXn switches

Time division switches

- Uses time division multiplexing (TDM) inside a switch.

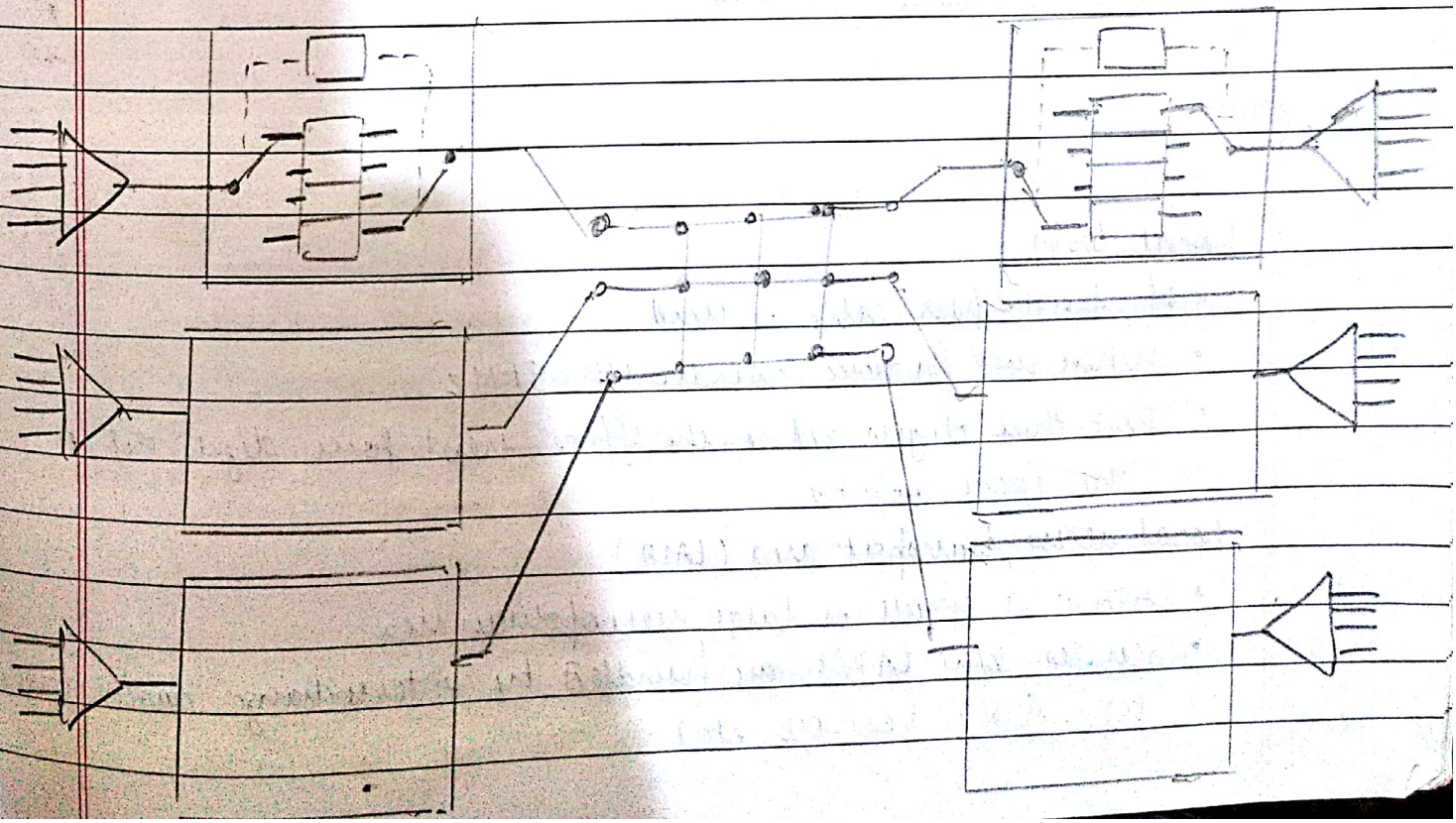
2 popular technologies - slot interchange (TSI) & TDM bus.

Needs no crosspoint.

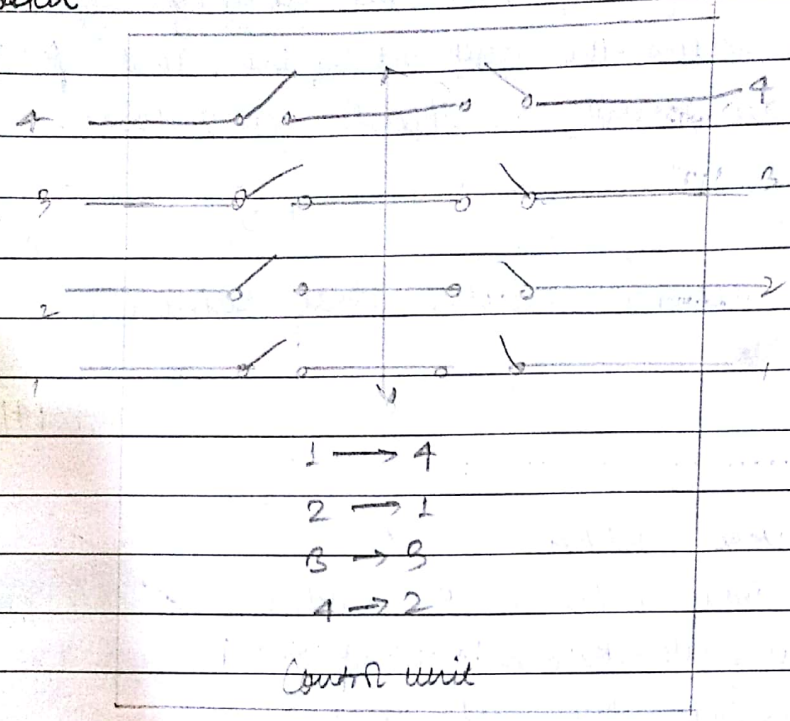
For TSI, processing each connection create delays.

TST switch (Time space time)

- Combine space-division and time division technologies.
- Resultant switch optimized physically.



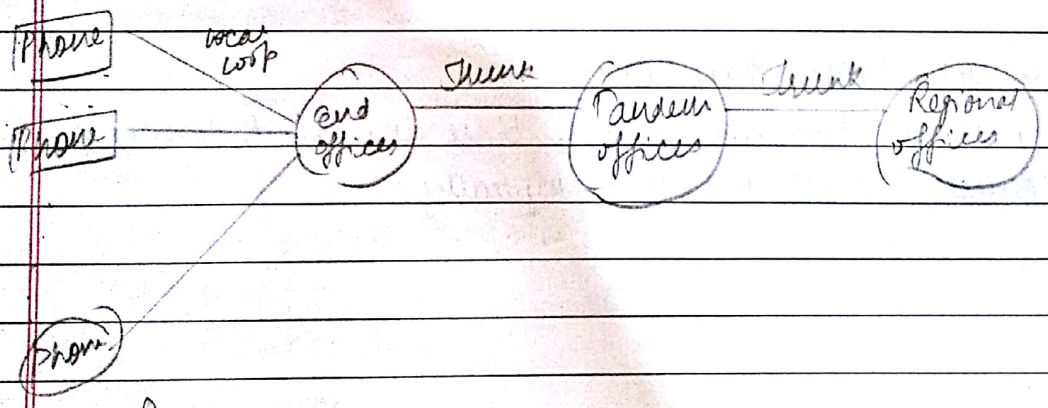
TDM switch



TDM bus switch

Telephone network

- Uses circuit switching



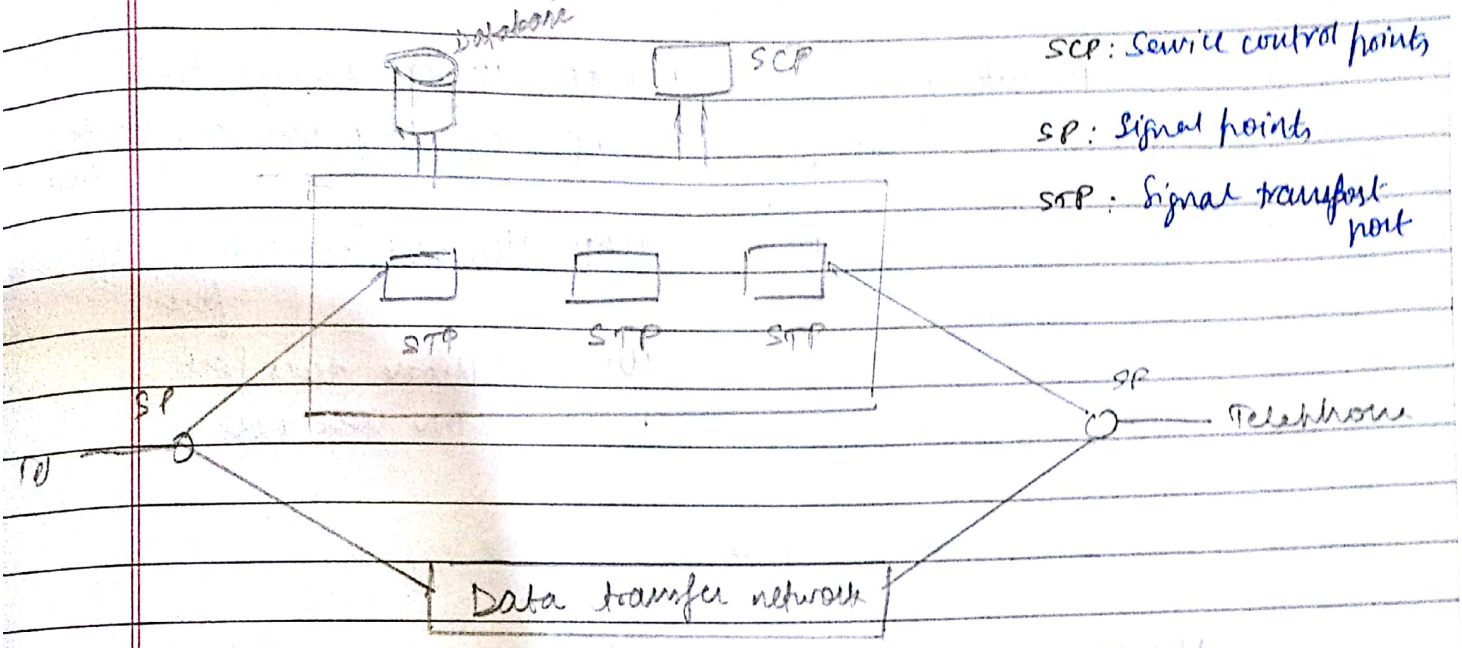
Local loops

- ~~If~~ twisted pair cable is used.
- when used for voice, bandwidth = 4kHz
- First three digits define the office, next four digits define the local loop no.

Local access transport area (LATA)

- LATA is a small or large metropolitan area
- Services b/w LATAs are handled by interexchange carriers (IXCs) (ex - AT&T, Verizon etc)

Signal & data transfer in telephone system



Signalling network

- Packet-switched network (layers like OSI)
- User phones are connected to SP.
- STP forwards signal msg.
- SCP controls whole operation

Data transfer network

- Circuit-switched, or packet switched network
- Follows same types of protocols & model as other network.
- Can also carry multimedia information.

Signalling network (contd...)

- Functions -
- Providing dial tone, ring tone & busy tone.
- Transferring telephone nos. b/w offices.
- Maintaining & monitoring call.
- Keeping billing info.
- Providing other functions caller ID, voice mailing.