Panel 1

Last Time:

not much!

Nyquist:

Nyquist-Shannon:

1

Panel 2

Quiz 3 (1)

Questions removed to allow

make ups

2

Panel 3

Quiz 3 (2)

Questions removed to allow

make ups

3

Panel 4

Quiz 3 (3)

Questions removed to allow

make ups

4

Panel 5

If $f(t) = \sin(1200\,t)$, then what - <u>really</u> - is the frequency?

HW - send me email!!

5

Panel 6

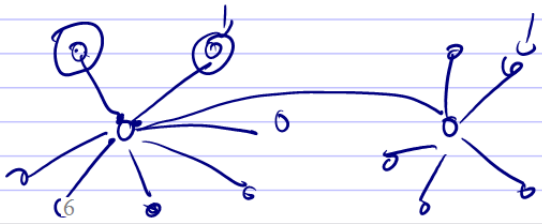
The Telephone System

Alexander Graham Bell: 1876 just hours ahead of rival Elisha Gray

Telephones were sold in pairs, customers provided wires.

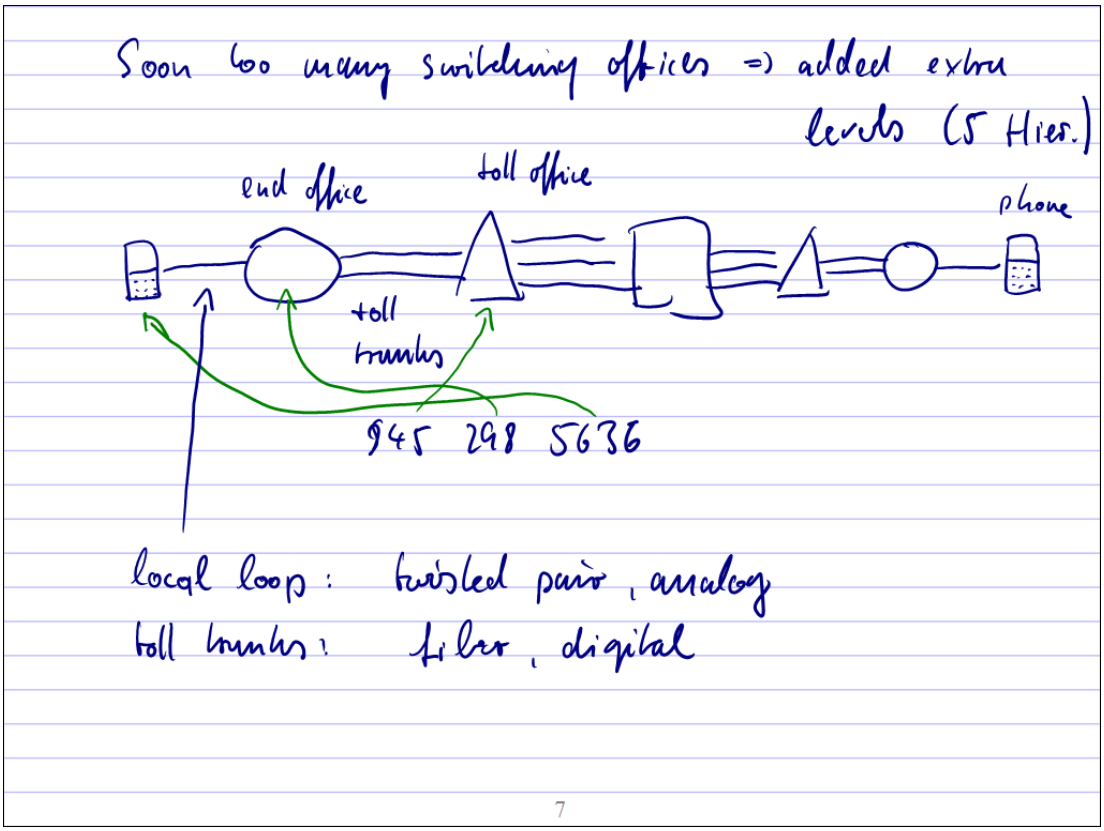
⇒ wires everywhere!

Bell formed Bell Telephone to provide switching services: ~ 1878

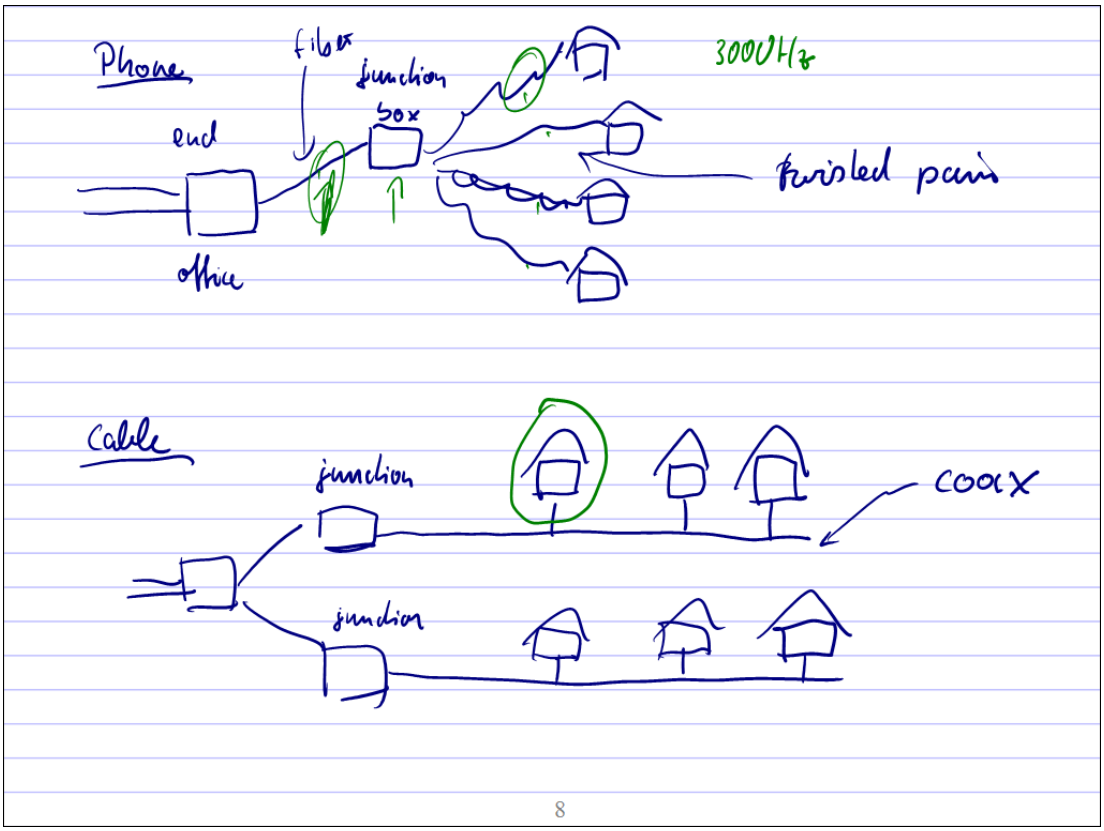


6

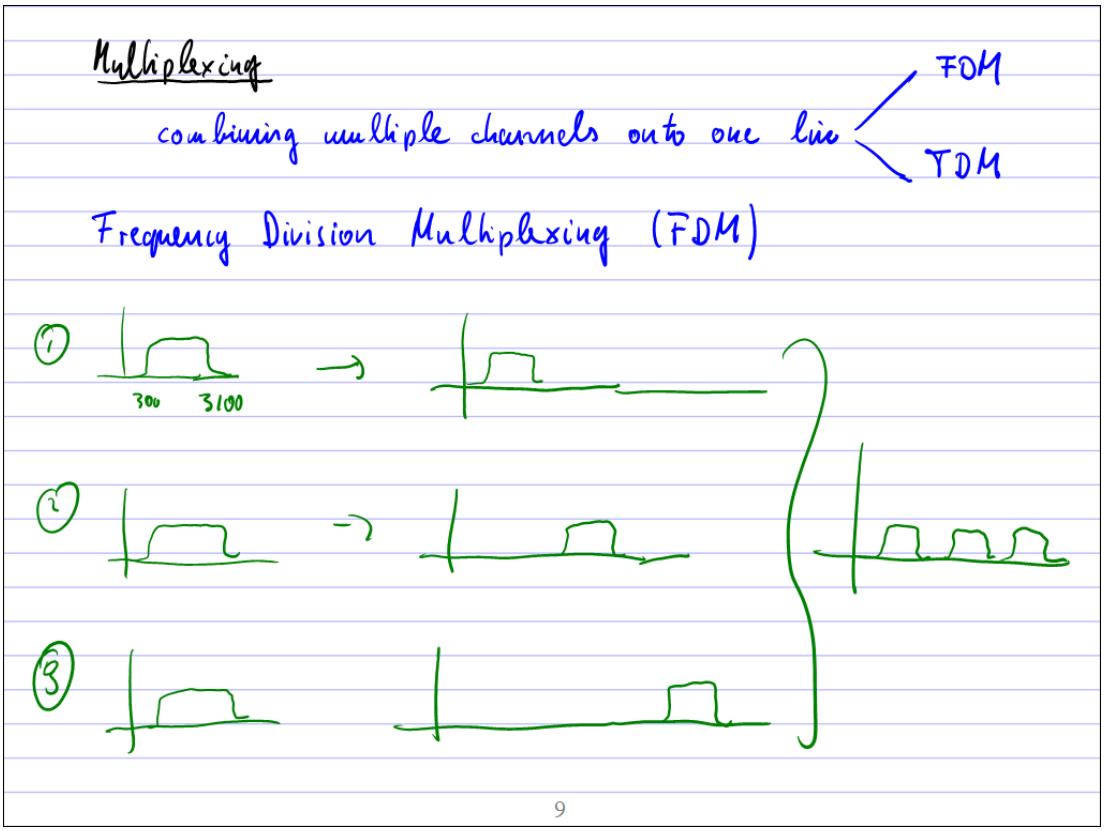
Panel 7



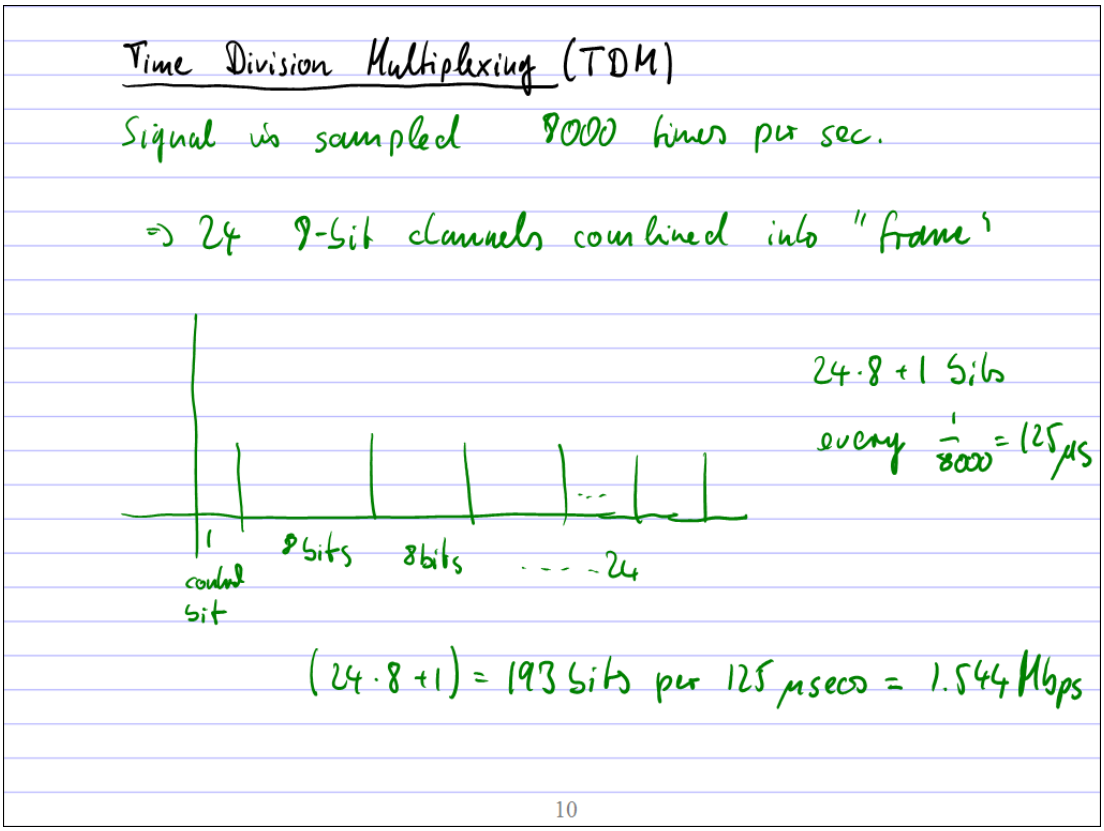
Panel 8



Panel 9



Panel 10



Panel 11

Multi - Multiplexing

24 voice grades in T1 line (1.544 Mbs)

4 × T1 = T2 ~ 6.312 Mbpsec

7 × T2 = T3 ~ 44 Mbps

6 × T3 = T4 ~ 274 Mbps

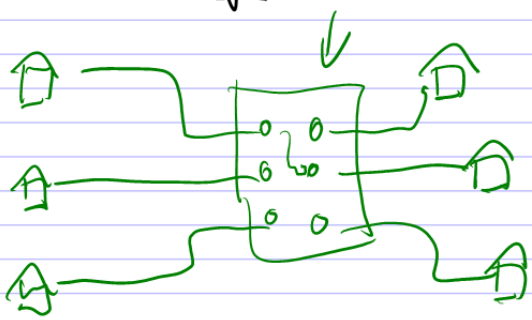
Since 1995 SONET (Synchr. Optical NETwork)

governs all long distance traffic in the US

11

Panel 12

Switching



Stronger gear 100 years old now phased out!

12

Panel 13