



*Your complimentary  
use period has ended.  
Thank you for using  
PDF Complete.*

[Click Here to upgrade to  
Unlimited Pages and Expanded Features](#)

# Connection Services

**Abdulaziz S. Almulhem, Ph.D**

almulhem@ccse.kfupm.edu.sa

Department of Computer Engineering

King Fahd University of Petroleum and Minerals

Dhahran, Saudi Arabia

# Connection services

- What is connection services?
- POTS
- X.25
- ATM
- ADSL



*Your complimentary  
use period has ended.  
Thank you for using  
PDF Complete.*

[Click Here to upgrade to  
Unlimited Pages and Expanded Features](#)

# Introduction

- Users
- Communication networks
- Services

# POTS

- Plain Old Telephone Set
- Basic service
- No flow control
- Low speed networking

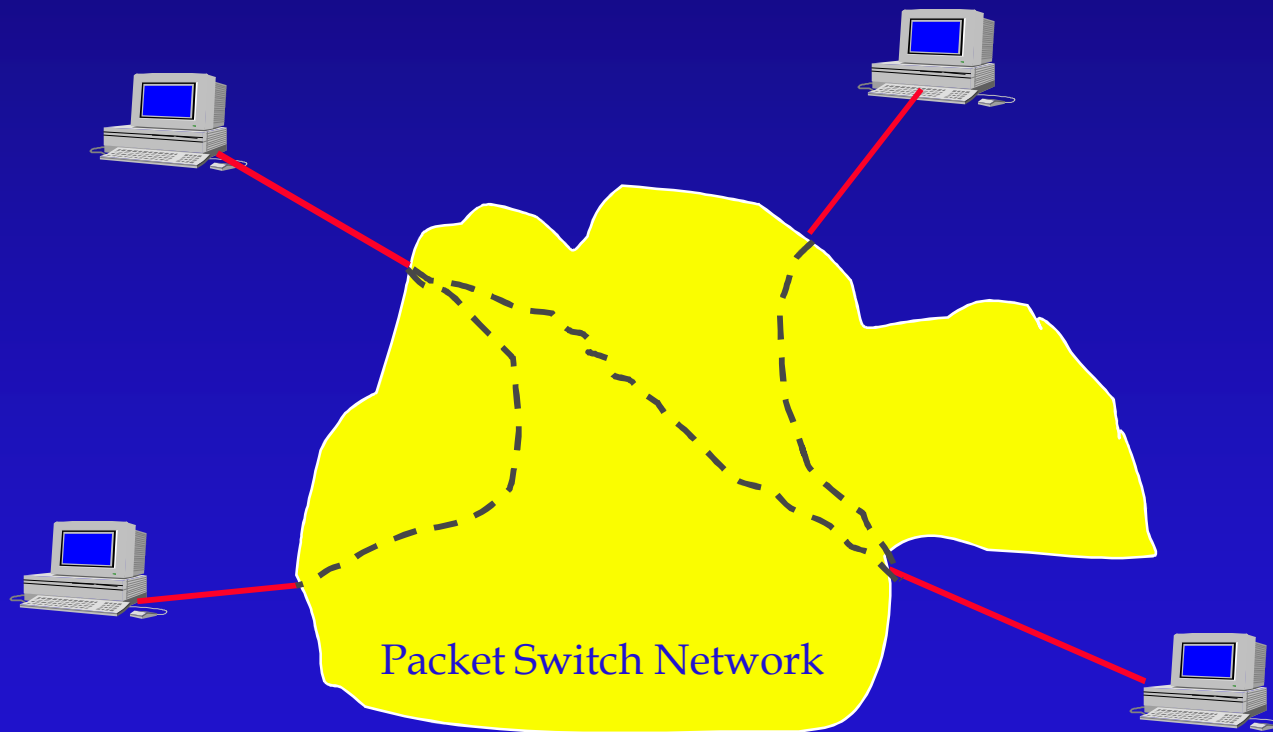
# 1970s

- IBM/SNA (1974)
- Digital/DECnet (1975)
- Sperry-Univac/Data communication architecture (1976)
- Siemens/TRANSDATA (1978)
- Honeywell/Distributed system architecture (1979)

# X.25 (1/2)

- CCITT (ITU-T) 1970-74
- Interfacing host to public data network
- Link access protocol B (LAP B)
- Go Back N
- Window size 8 or 128 (satellite)
- Bit stuffing

# X.25 (2/2)

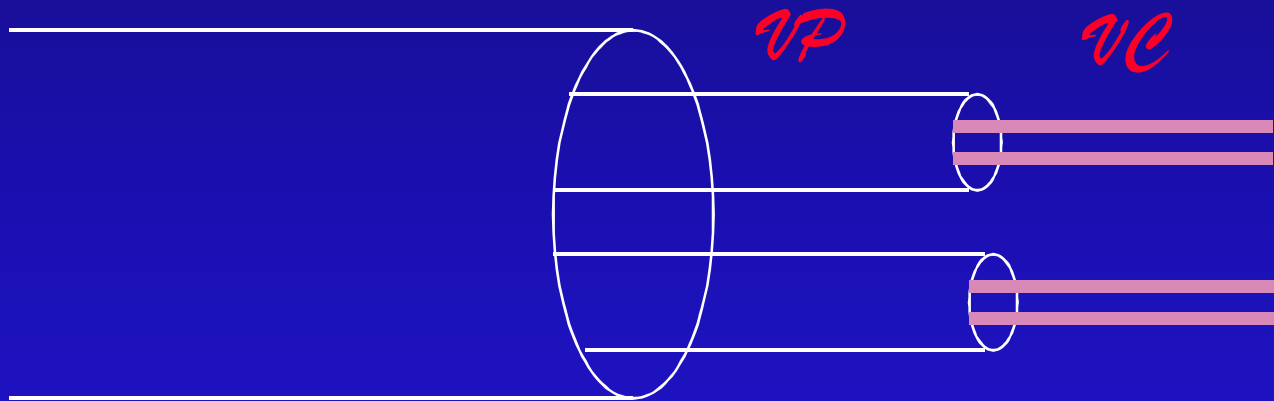


# ATM (1/2)

- Asynchronous Transfer Mode
- Cell based switching technology
- Integrate different data types
- Traffic management (contracting, policing, etc.)
- high speed (OC192)



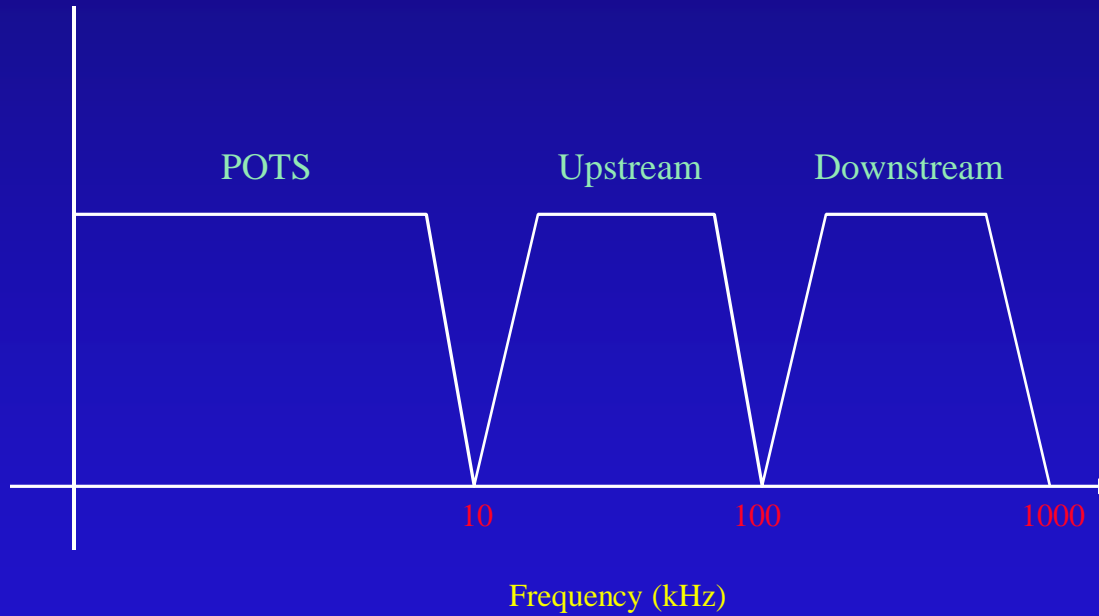
# ATM (2/2)



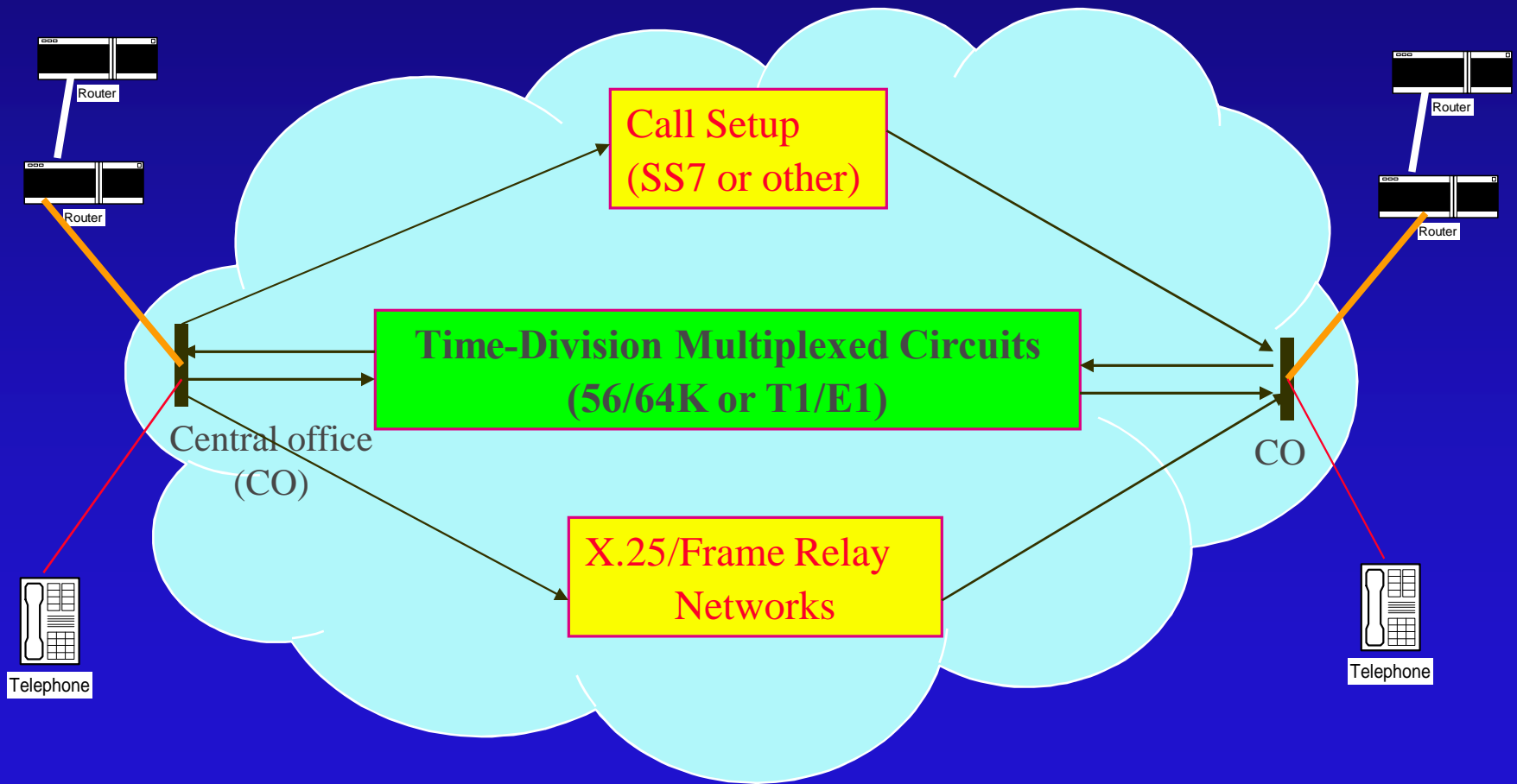
# DSL (1/2)

- Digital subscriber line
- started with 2B+D; now 52 Mbps!
- Different flavors are available.
- Uses TCM (Time Compress Multiplexing) for data transmission
- Intense bit encoding per symbol
- RS coding

# DSL (2/2)



# Connection services



# Summary

- High speed communication.
- Low operational and management costs.
- support new needs.
- Simplicity is the keyword.

# References

- W. Stallings, *High-Speed Networks*, Prentice-Hall, 1998.
- W. Chen, *DSL*, Macmillan Technical Publishing, 1998.
- J. Walrand, *Communication Networks*, Asken Associates, 1991.

# WWW Sites

- ATM Forum: [www.atmforum.com](http://www.atmforum.com)
- Frame Relay Forum: [www.frforum.com](http://www.frforum.com)
- More FR stuff: [www.mot.co/MIMS/ISG/tech/frame-relay/resources.html](http://www.mot.co/MIMS/ISG/tech/frame-relay/resources.html)
- DSL Forum: [www.adsl.com](http://www.adsl.com)
- IETF (Internet): [www.ietf.org](http://www.ietf.org)