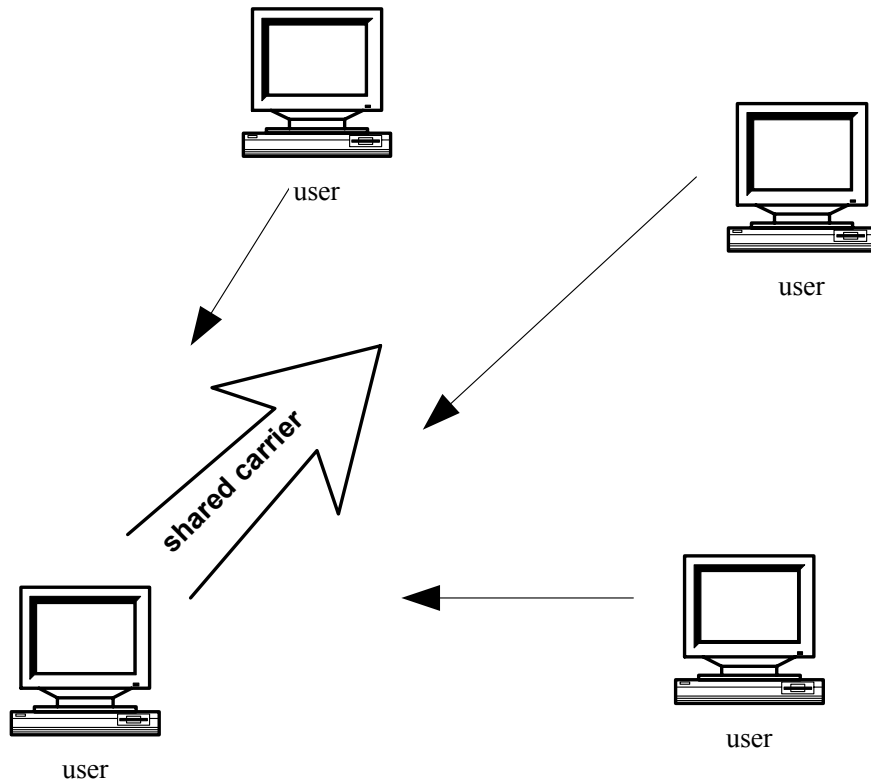# Satellite Network Topology and Network Management

Ed Miller

Manager Service Development

Telesat Canada

Typical Networks
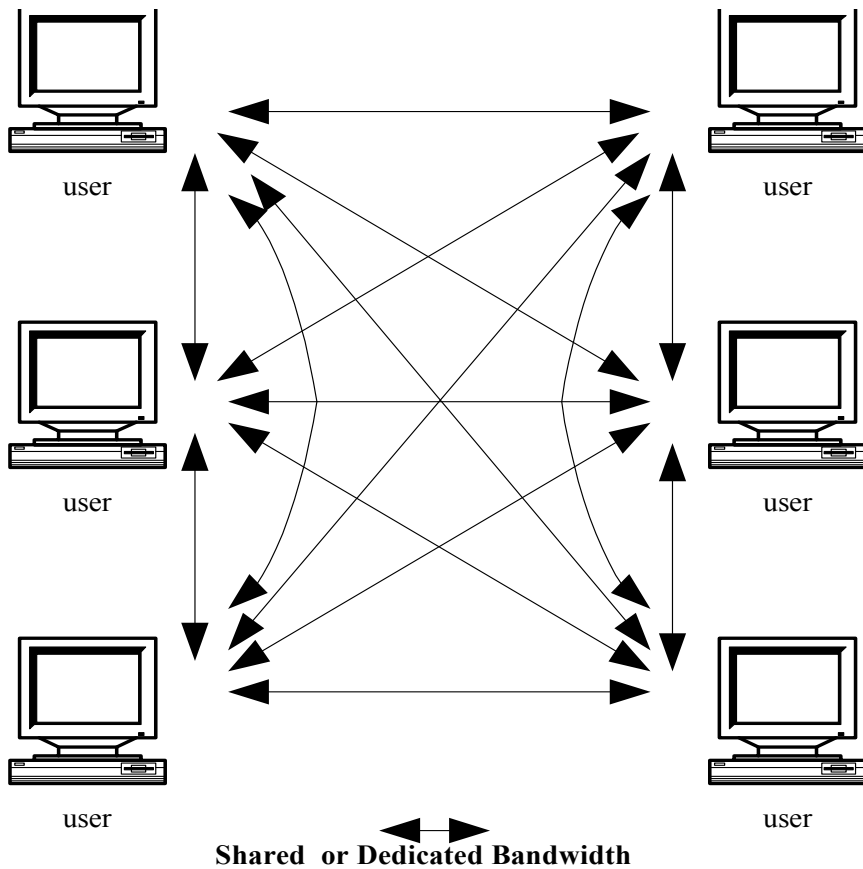
- Point to Point/Point to Multi-point

- Switched (BOD)
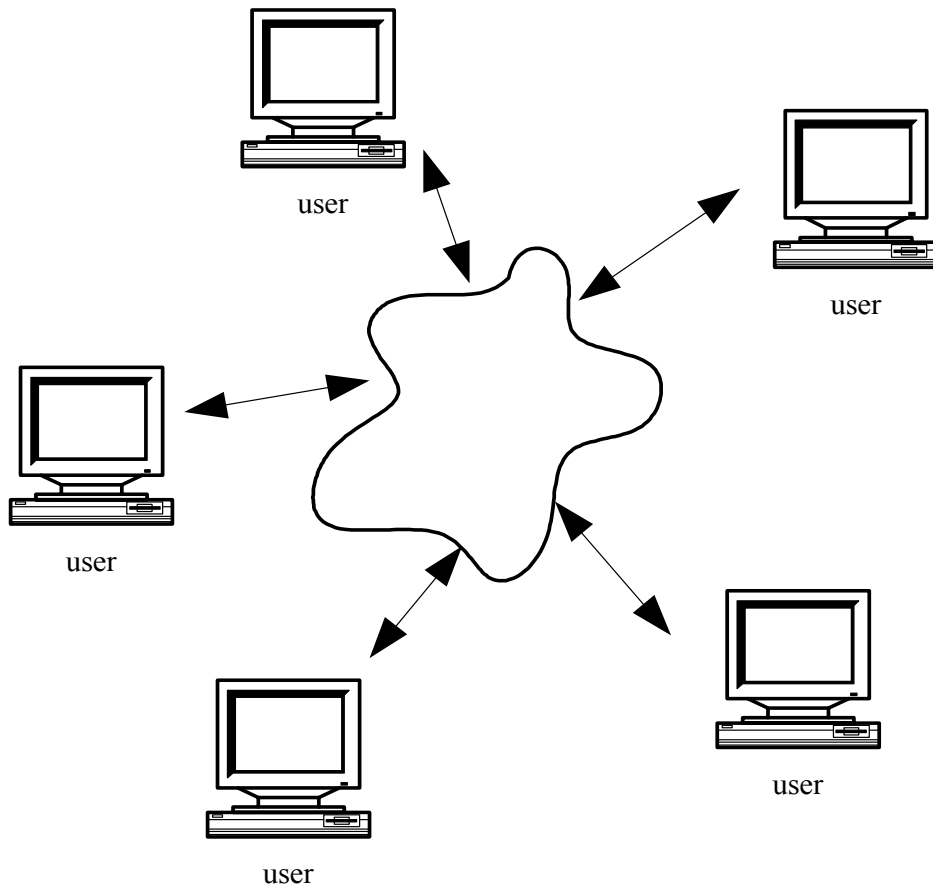
- TDMA

- Hybrid

PT to PT / PT to Multi-point

user

user

shared carrier

user

user

- Star Network

- partitioned outbound

- dedicated inbound

- no direct user to user

- permanent connections

Switched (BOD)

user

user

user

user

user

user

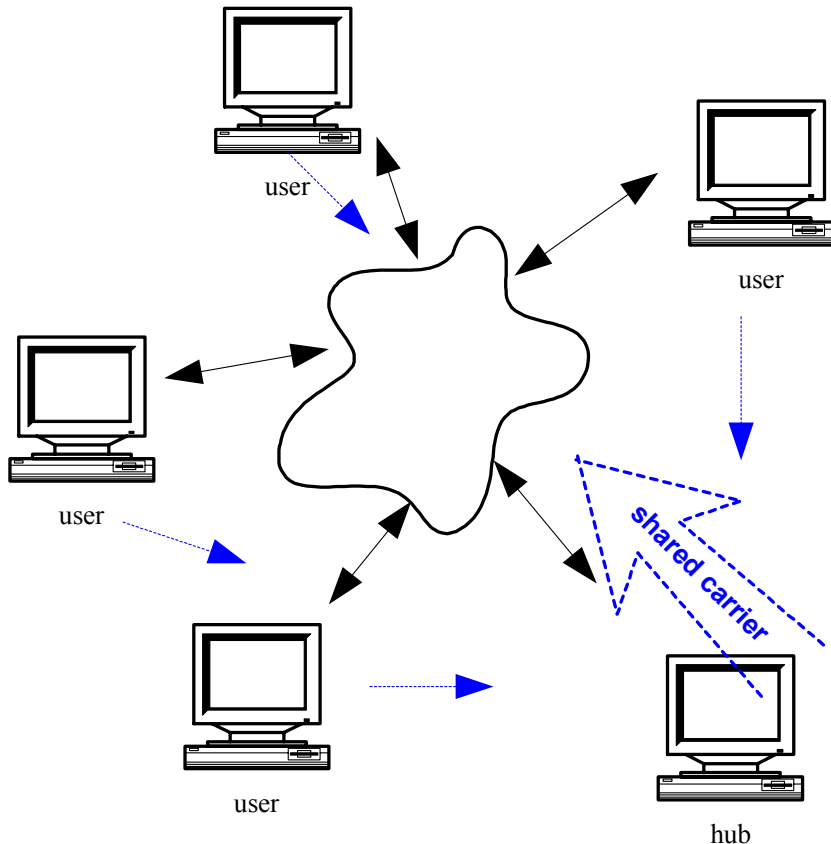**Shared or Dedicated Bandwidth**

- Mesh Network

- connections made as required

- online traffic require dedicated connections

- well suited to VC applications

- resource pool is shared among all users or by partition

TDMA – Mesh / Star

- Mesh Network

- connections made as required

- well suited to bursty traffic

- network sized with demand

- resource pool is shared among all users or in partition
- IP acceleration

Hybrid – Mesh/Star

user

user

user

user

hub

shared carrier

-Mesh for community to community traffic
-V/C, QOS, etc
-Capacity dedicated and shared
-BOD or TDMA

-Star for internet traffic
-Hub to/from multiple communities
-Capacity dedicated and shared
-Star TDMA
-IP Acceleration

Examples

- BOD   Mesh, 64k to 2048k   fixed or BOD
- SOHO   Star, 2M / 2M (ku R&D)
- Schoolnet   Star, 16M / 2M (ku R&D)
- HSI Service Star, 500k / 153 (ku)