FDDI, ATM and Other Religious Topics

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Questions

- What are the driving forces?
- Where do things stand?
- What do these things cost?
- Is it really one or the other?
- Which one is dead?

More Questions...

- How do they perform?
- Why would I want either?
- What about *100 Mbps Ethernet*?
- What about *Personal Ethernets*?

The Questions keep coming...

- Will the world be one big seamless network?
- What does multimedia have to do with this?
- Who should I believe?

Just as with clothing, one size doesn’t always fit all...

Real networks are, and will continue to be, made from a mixture of communications technologies.

Which ones should we use where, and why?

How do we interconnect all these technologies so Applications work across everything?

ATM Driving Forces

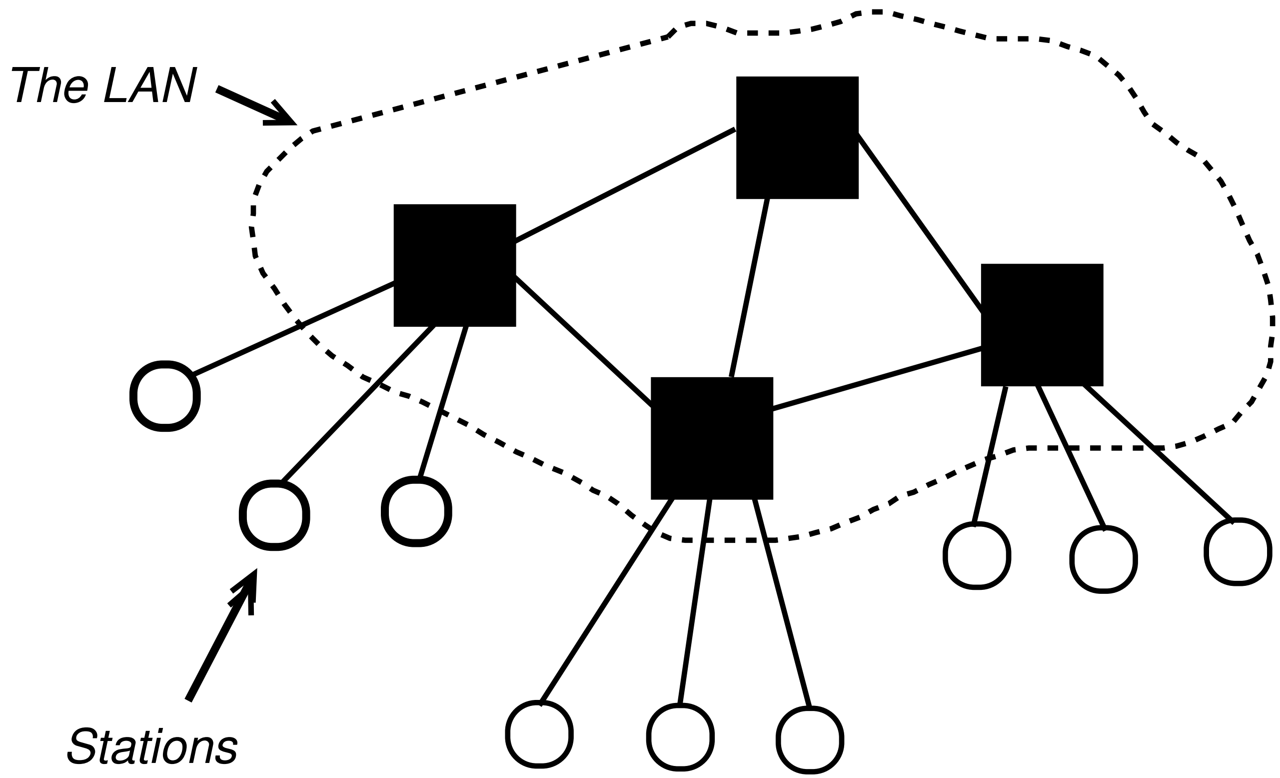
There are 2 main forces at work

- Telecom Industry (ATM for WANs)
- *Packet switched* instead of *shared* LANs

Changing Technology

- Shared LANs will give way to networks of point-to-point links & switches
- Backplane bus/memory will give way to crossbars
- Software forwarding in bridge/router/switch will give way to hardware forwarding
- Centralized forwarding in bridge/router/switch will give way to distributed forwarding on interfaces

Future LANs = *Packet Switched*



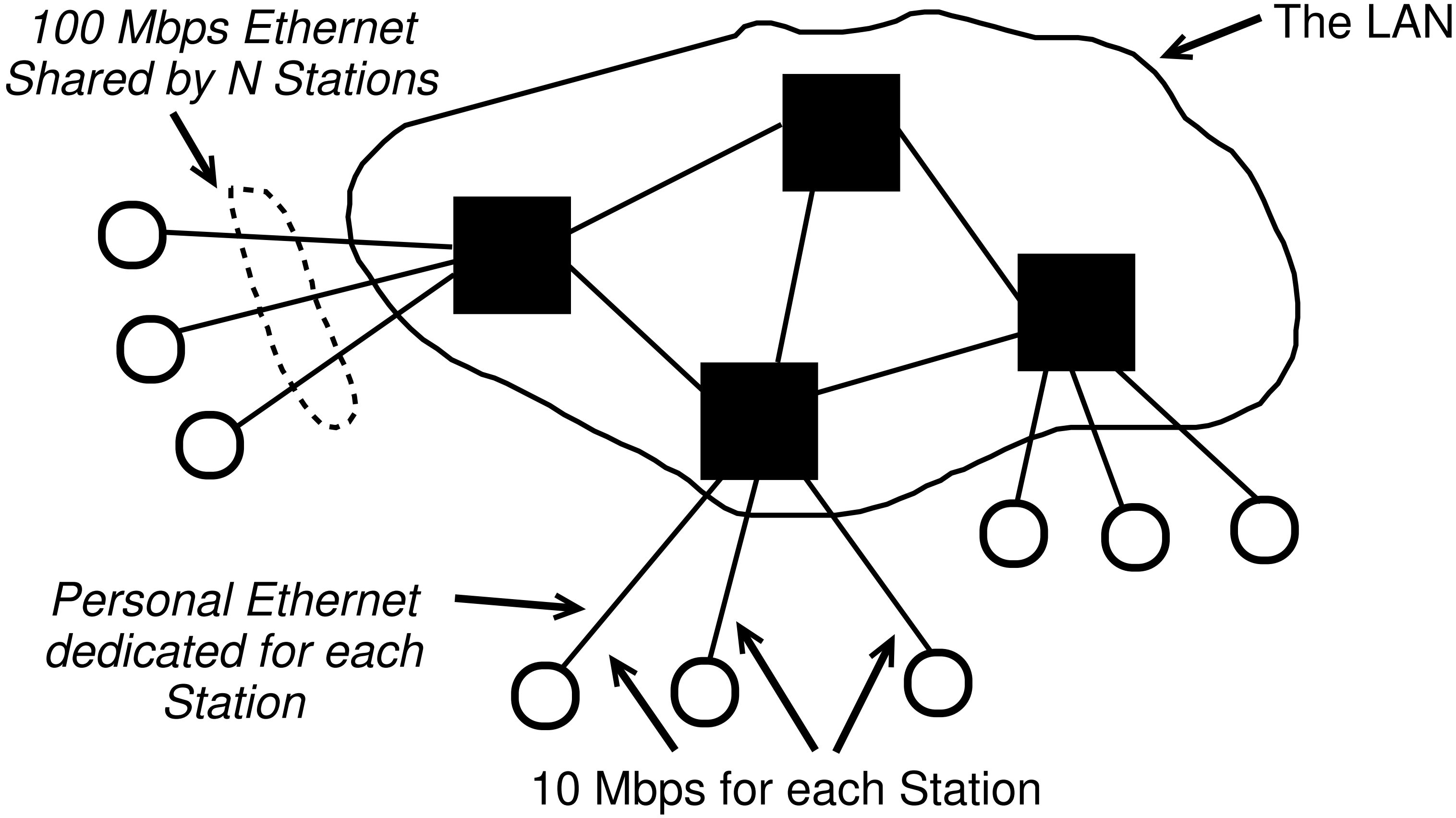
Packet Switched LANs

- Allows incremental addition of network bandwidth
- User attach cost proportional to desired performance <u>not</u> to total network capacity
- Higher speed transmission requires point-to-point
- *Shared LANs* have decreasing relative efficiency as speed is increased
- This basic technology now being applied to switched Ethernets, FDDI, ATM

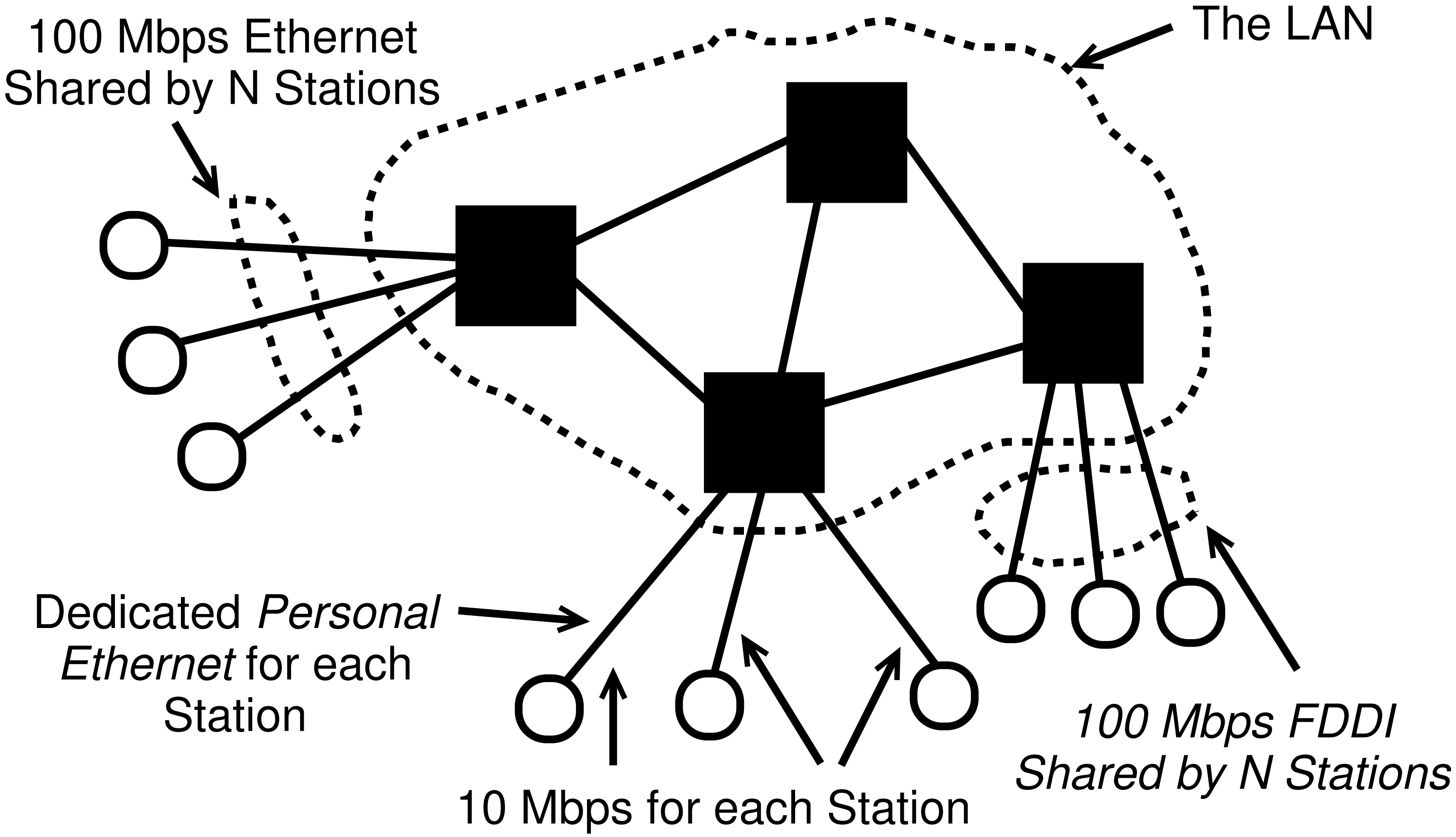
What’s happening with Ethernet?

- Personal Ethernets
- 100 Mbps Ethernet
- Both assume LANs becoming *packet switched*
- How is this relevant to FDDI vs ATM discussion?
- Cost to user, migration/evolution of network, etc...

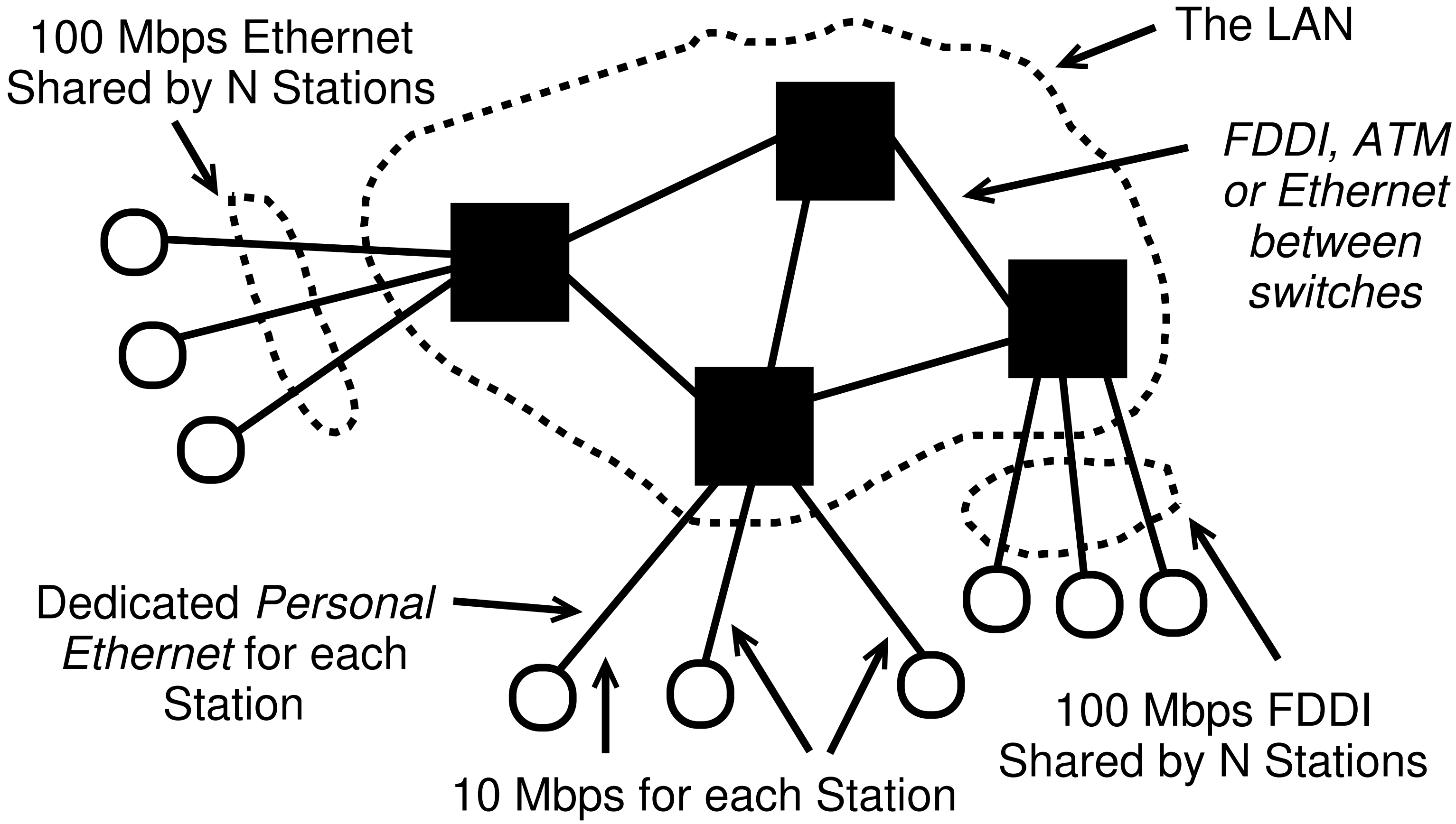
The Evolving Ethernet



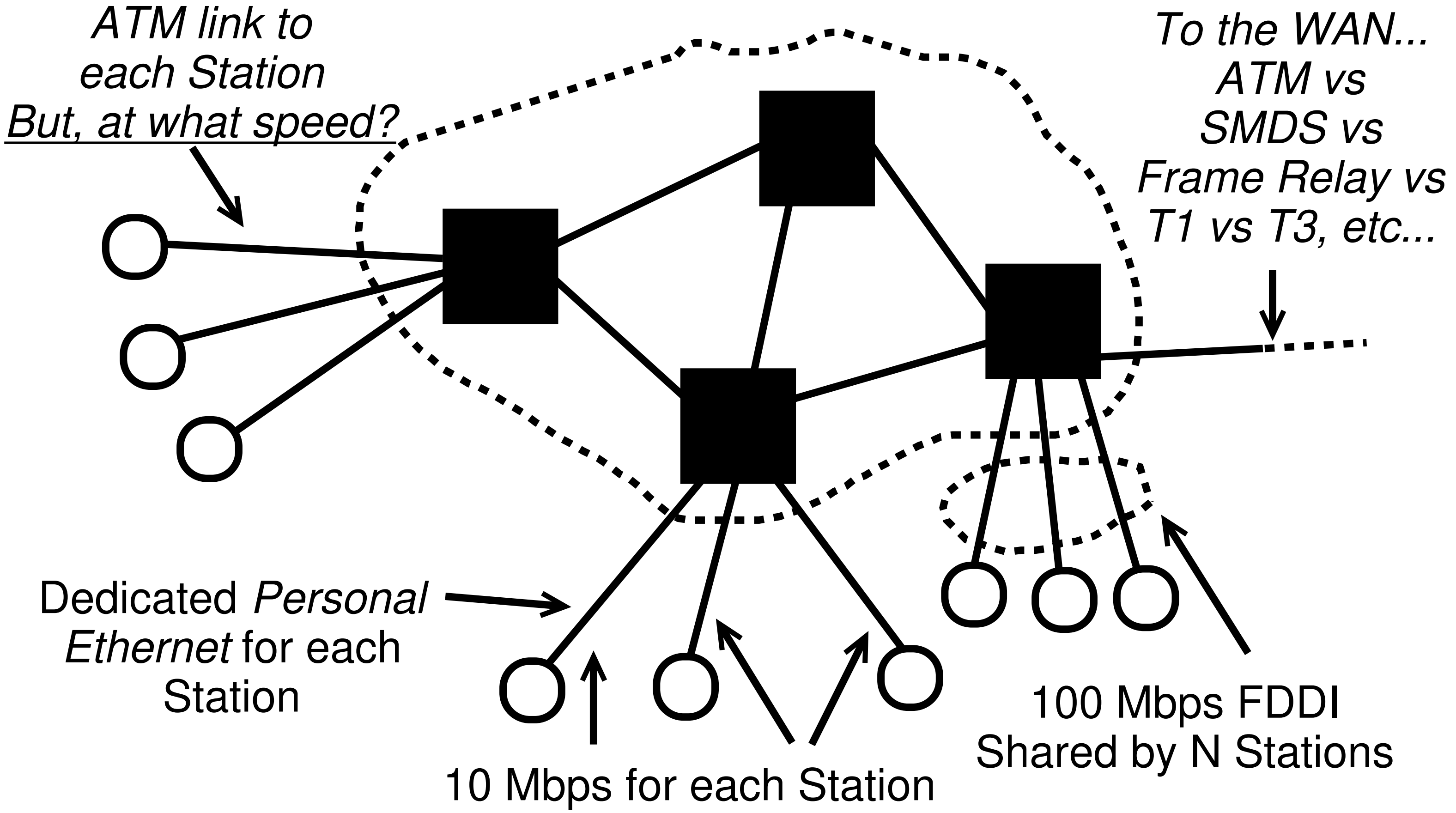
The Evolving LAN



Real LANs are Hybrids



The Evolving LAN



Costs

Who’s going to pay for all this?

- Ethernet adapters = *“free”* or $100 - $300
- Ethernet repeaters = $50 - $200 per port
- FDDI adapters = $995 - $2,500
- FDDI concentrators = $670 - $1,500 per port
- ATM adapters = $4,500
- ATM switches = $4,800 - $8,000 per port

Multimedia

Data, voice, video.....

- Actually doesn't need much bandwidth per desk
- DECspin *desktop video conference* = 500 kbps or less, per user when using compression
- Major issue is <u>storage</u> capacity & cost/bit as well as application software not LAN technology
- WAN transmission costs per bit/sec per connect-second an issue...

Multimedia

And the big issue is cost per seat.....

- Camera?
- Video option cards?
- One can easily spend \$3000 - \$6000 per user

Popular Myths

- ATM networks are simple & FDDI is complicated
- FDDI is simple & ATM is complicated
- ATM is here today
- ATM is cheap
- FDDI is cheap
- Ethernet is dead
- Multimedia only works with ATM networks