Fundamentals: Network Structure

ITS 625
A Basic Network

Subscriber

Central Office

Local Loop

Trunk
Local Calling
US Artifact: “LATA”s
Long-Distance Competition
Local Competition
US: iLEC and cLECs
Wireless
But Internet Calling is Different, right???????
Wire-Based Competition using Voice over IP
Public policy and Regulatory History

• It may be history, but
  – Policy decision drive network topology
    1. Technology has to adapt to implement policy decisions
    2. Policy creates “loopholes”, or side-effects that make otherwise irrational technology choices attractive.
Key US Policy Choices

• Carterphone - 1968
  – De-Couple CPE from the network providers, force interface standards
• Specialized Common Carriers 1971-1972
  – What do you carry and who do you serve?
• After the MFJ - 1982
  – Customer-driven provider selection
Policy Choices cont...

- The Telecom Act of 1996
  - Local competition requires interconnection and Number portability
  - The “Carrier of Last Resort”
    - Universal Service Fund
    - Bypassed by VoIP
  - Number portability and emergency services