Voice Systems
ITS 220

Definitions
• CPE - Customer Premise Equipment
  • From the reading:
    - Servers
    - Clients
    - Local networking
    - Wide-area Networking
      • Multiple paths from the enterprise to the PSTN
        (for mid-to-large businesses)

Rationale
• Placed between End-Users and CO connections
• Provide on-premise functions
• Make cost-efficient use of CO connections

Different Types…
• PBX - Private Branch Exchange
  - Full Premise Based Switching
• Key System
  - Smaller System, simplified administration and use
  - In practice Key Systems today are "hybrids"
• CENTREX
  - PBX functionality, but implemented in the Central Office Switch
PBX “Block Diagram”

- Single-Line Phones
- Electronic Phones
- Attendant Console
- Messaging
- PBX Switching System or “Fabric”
- Administration
- Maintenance
- SMDR
- CTI
- Local Switched Access
- IXC Special Access
- Private Lines

Packet Switching?

- Analog Phones
- VoIP Phone
- VoIP Phone
- Voice Processing
- PBX Switching System

Handling Inbound Calls

- Routing Calls
  - Attendant
  - Direct Inward Dialing (DID)
- Handling Missed Calls
  - Call Forwarding – General
  - Call Forwarding – Busy/No-Answer

Distributing Calls

- Hunt Groups
- Queuing
- UCD
  - Universal Call Distributor
- ACDs
  - Specialized PBX software for inbound call handling
Handling Outbound Calls

- Call destination restrictions
- Least cost route selection
- Automatic redial

Signaling Call Information

- Calling number
  - ANI - Automatic Number Identification
    - Used in “800” services
    - Caller ID
    - Retail-level “CLASS” service
- Called Number
  - DNIS - Dialed Number Identification Service
  - Used in “800” service
  - DID - Direct Inward Dialing
  - CO to PBX Trunk Signaling

PBX Capacity

- Traffic (usually measured in call minutes per hour)
  - How Many Simultaneous Calls
- Processor
  - Total Calling Volume
  - Busy Hour Call Attempts
- Physical Interfaces
  - Stations and Trunks

“Programming a PBX”

- Moves, Adds, and Changes (MAC)
  - Establish New Service
  - Disconnect Service
  - Change Features On Existing Service
Adding Single Line Station

- Physical Install
- Assign Extension Number
- Assign Class of Service and Other Features
  - Often uses a template (or “Table”)

Adding an Electronic Set

- Physical Installation
- Define Feature Buttons on the Digital Phone
- Define Line Appearance Buttons
- Assign Extension(s) to Line Appearances
- Assign Class of Service

Button Assignments

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Line 1
Hold
Xfer

Button Assignments

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Line 2
Hold
Xfer