

Step 6: Financial Analysis

- **Three case studies**

Large global firm using a private cell-based network

Medium-sized Pan-European organization using a public Frame Relay service

Small international firm using routers and private lines

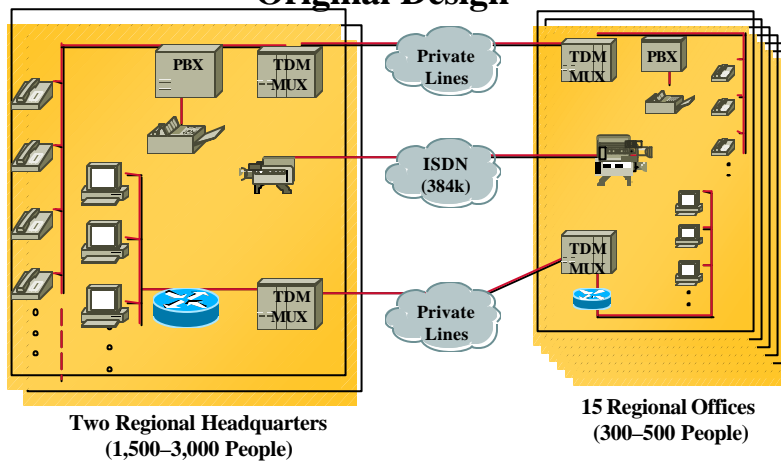


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Case 1: Large Global Firm

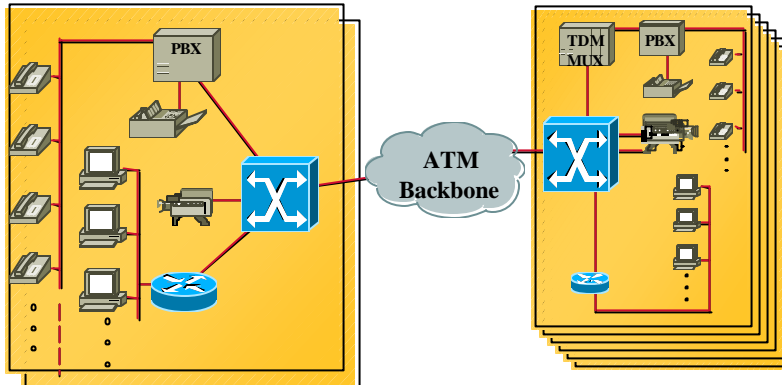
Original Design



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Case 1: Large Global Firm Network Redesign

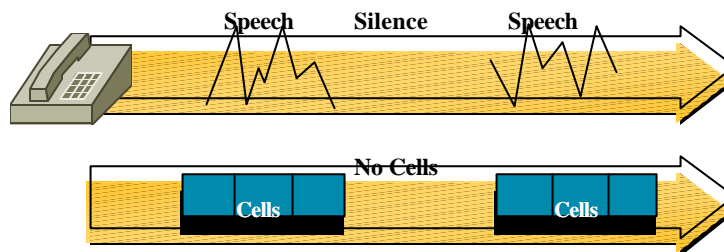


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Functional Highlights— Silence Suppression

Voice Activity Detection (VAD)

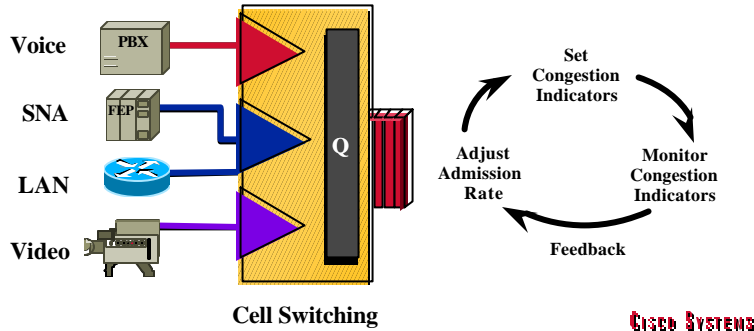


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Functional Highlights— Optimal Bandwidth Utilization

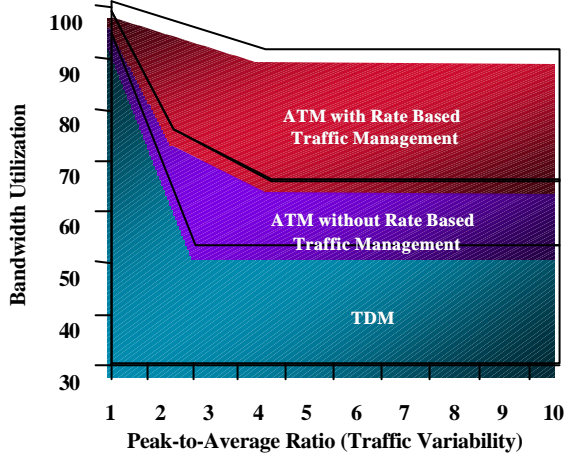
Traffic Management



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Functional Highlights— Optimal Bandwidth Utilization

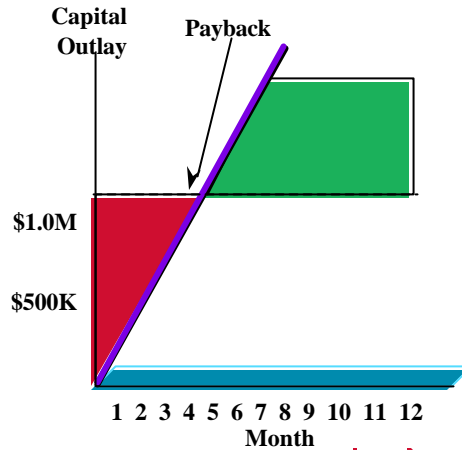


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Case 1: Financial Analysis

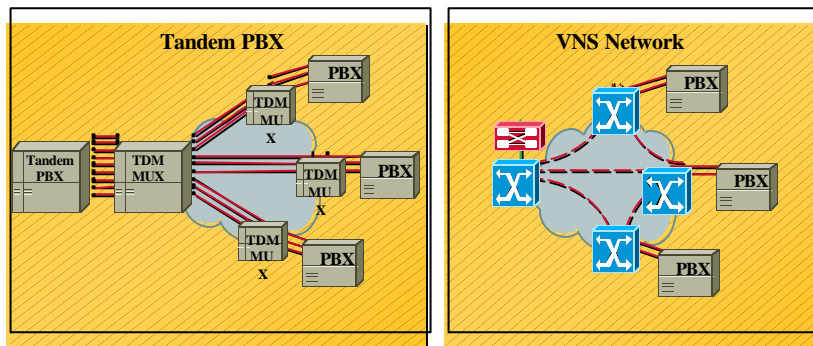
- Payback—4 months
- Yearly savings—\$3.5M
- Capital outlay—\$1.2M



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Additional Savings—Voice Network Switching



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Case 1: Summary

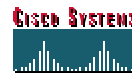
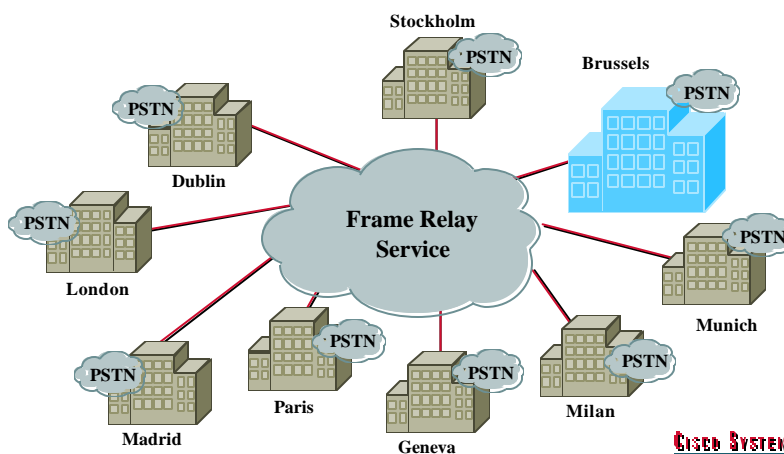
- **Thirty percent reduction in annual expenses**
- **Voice quality maintained**
- **Increased network availability**
- **Simplified management**
- **Optional tandem replacement**



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Case 2: Pan-European Firm

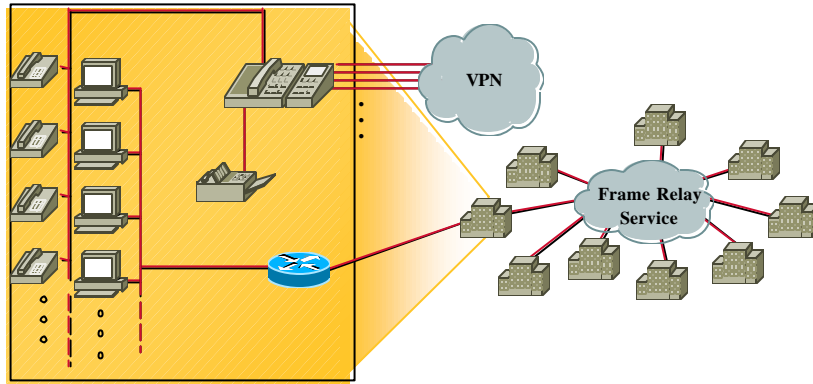


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Case 2: Pan-European Firm

Original Design



Regional Offices
40-70 People

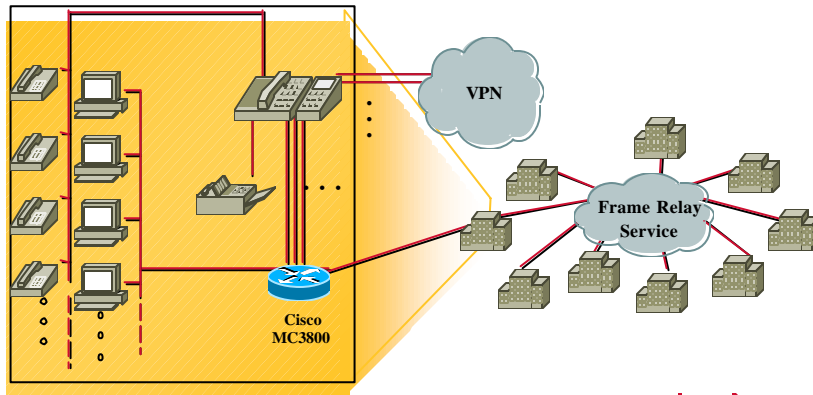
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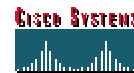
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Case 2: Regional Offices

Network Redesign

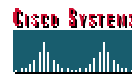
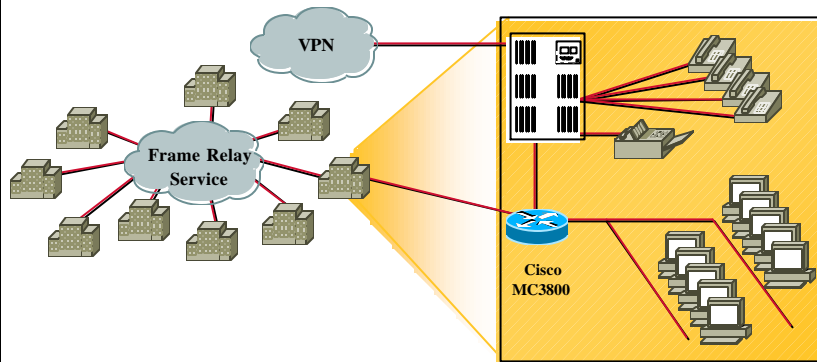


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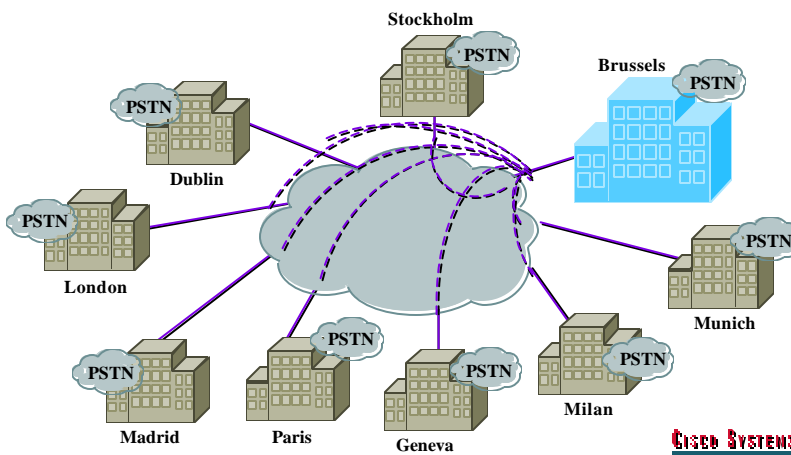
Case 2: Headquarters Network Redesign



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Case 2: Redesigned Topology

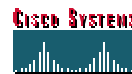


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Functional Highlights

- Voice prioritization within a single PVC (bundled DLCI)
- Tandem switching
- ATM service ready
- Multiflex trunk

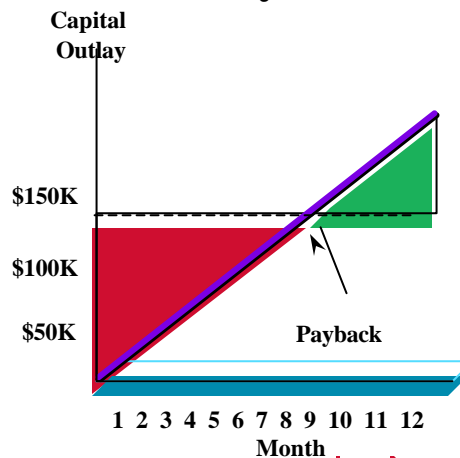


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Case 2: Financial Analysis

- Payback—
7.7 months
- Yearly savings—
\$230,000
- Capital outlay—
\$148,000



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Case 2: Summary

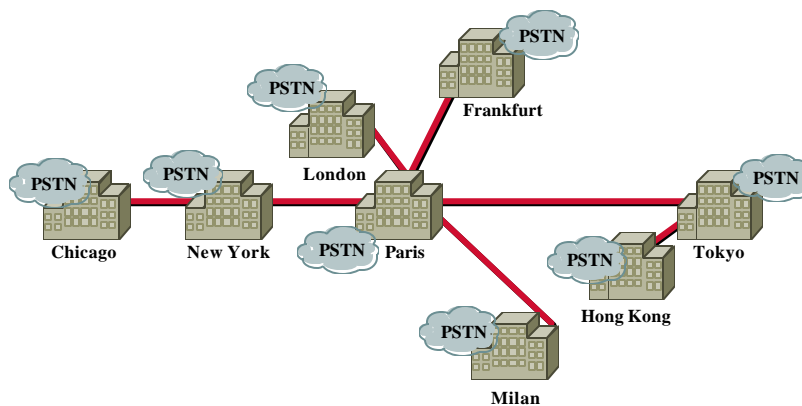
- Annual savings over \$230k
- Voice quality maintained using voice priority
- Voice decompression/recompression cycle avoided



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Case 3: Multinational Firm

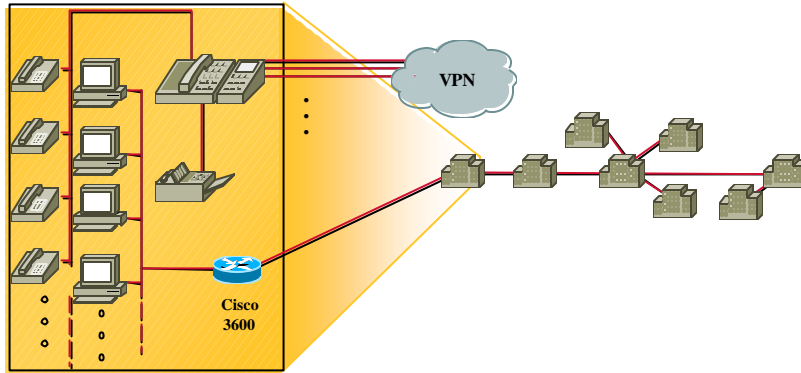


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Case 3: Multinational Firm

Original Design



Seven Offices
15-45 People

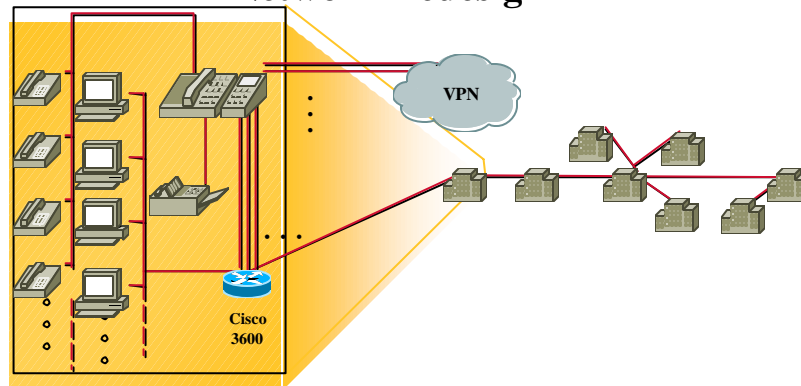
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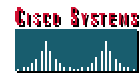
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Case 3: Multinational Firm

Network Redesign

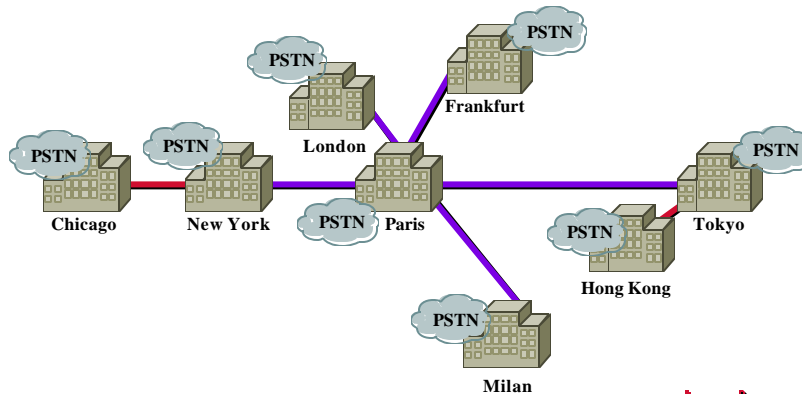


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Case 3: Redesigned Topology



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Functional Highlights

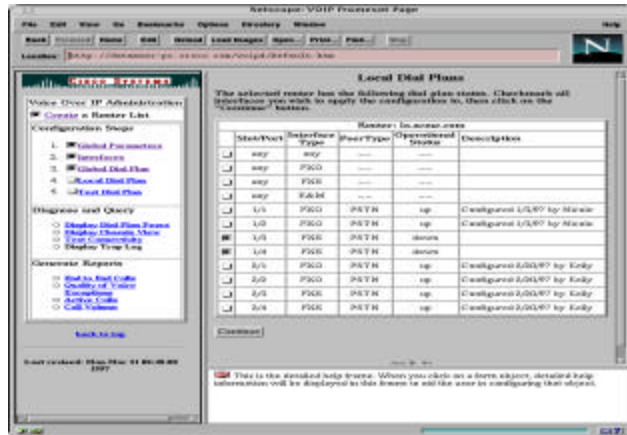
- **Extend the routed network architecture**
- **Very low b/w required—9k per call**
- **Migration path to Frame Relay**
- **Future interoperability with H.323 applications**

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Functional Highlights—Dial Plan

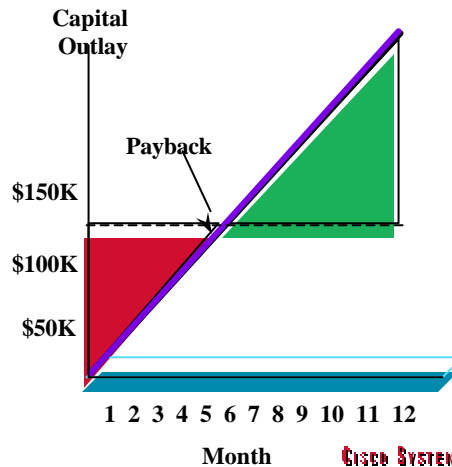


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Financial Analysis Highlights

- Payback—5 months
- Yearly savings—\$250,000
- Capital outlay—\$110,000



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Case 3: Summary

- **Annual savings of \$250k**
- **Management simplified using Java based manager**
- **Voice decompression/recompression cycle avoided**

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Cisco Voice/ Data Networking Portfolio

- **Choices designed to fit your business need**
 - Cisco StrataCom® switches**
 - Cisco Multiservice Access Concentrators**
 - Cisco PowerBranch routers**

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The Voice of Cisco

- Satisfy the immediate business case—WAN/access costs
- Implement network services for emerging applications
- Adopt new voice technologies
- Drive and adopt industry standards

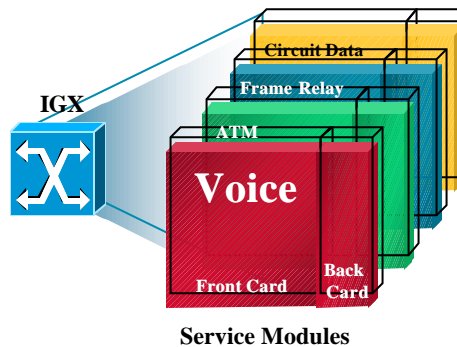


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Cisco StrataCom IGX Multiservice Wide-Area Switch

- Multiple service types offered via different service modules
- Various interface types using different back cards for each service module
- Carrier class equipment to build reliable enterprise backbones

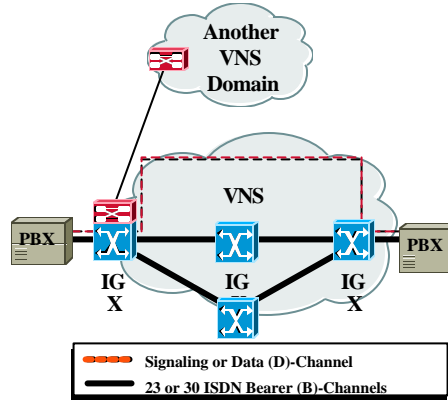


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Voice Network Switching

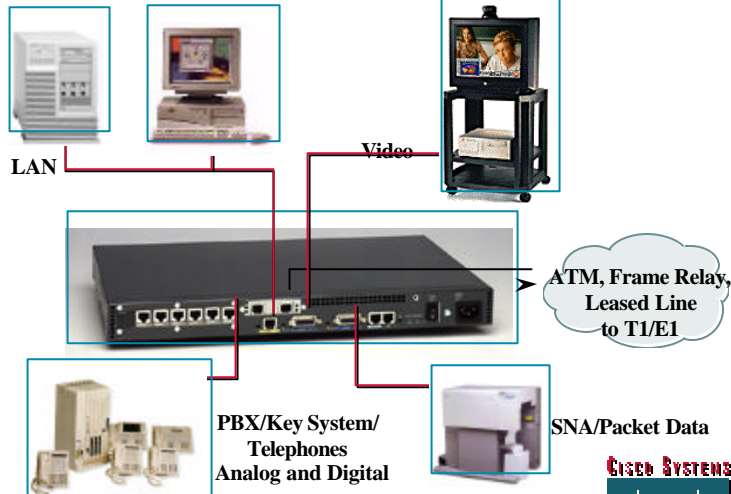
- ISDN call request from PBX is routed via IGX to VNS
- VNS system interprets messages and instructs IGX to allocate appropriate VC based on type of call (voice or data)
- VNS sends call request to far end PBX through far end IGX over data channel
- Far end PBX processes call request and signals back to VNS on call status
- Message is relayed back to originating VNS (if multiple VNSs) which instructs PBX to make connection



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MC 3800 Multiservice Access

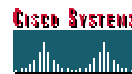


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MC 3800 Key Benefits

- Cisco IOS
- Full featured voice switching and call handling
- G.729 and G.729A voice compression over Frame Relay, ATM, or HDLC
- Multiflex access for Frame Relay, ATM or TDM trunk
- Frame Relay to ATM network interworking
- Fax Relay



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Cisco 3600 PowerBranch Router

- High-density ISDN access server
- Cost-effective, low-density ISDN access server
- Mixed-media access server
- WAN concentration
- Power branch solutions



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Cisco 3600 Voice Support


- **High performance architecture provides speed and flexibility**
- **Modular voice interface cards**
- **Four to twelve voice ports available**
- **Smoothly integrates with existing IP networks**

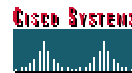


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CES: Circuit Emulation Services

- **Circuit emulation**  **wire emulation**
- **Technique for carrying “circuit” or TDM traffic over an ATM network**
- **Constant Bit Rate (CBR) traffic as opposed to bursty traffic**
- **Tight constraints on Cell Transfer Delay (CTD) and Cell Delay Variation (CDV)**
- **Circuit Emulation Services (CES) is ATM Forum specifications for supporting CBR traffic over an ATM network**

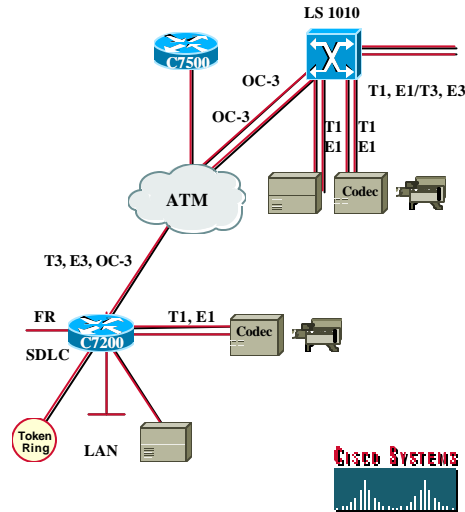


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ATM-CES Target Application

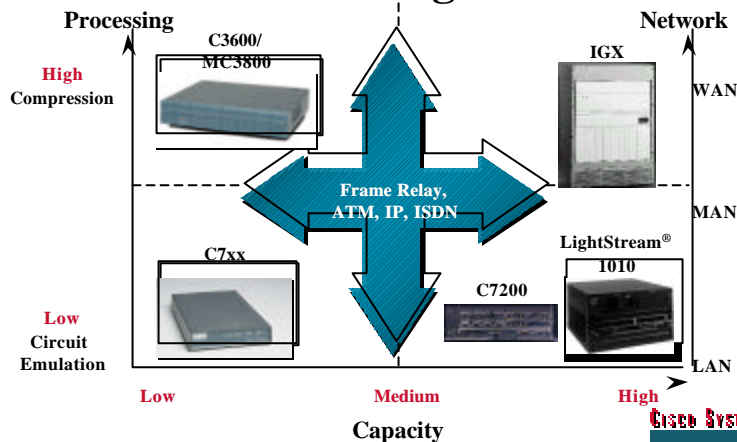
- Access into an ATM WAN
- One pipe for voice, video, and data
- Full Layer 3 routing
- CES targeted at:
 - Corporate voice, video and data aggregation
 - Value-added services for service providers



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Cisco Voice/ Data Networking Portfolio



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The Next Step

- **Introduction to Packet Voice Networking**
- **Packet Voice Networking Solution Guide**
- **Local Cisco team and partners**

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Before You Go...

- **Please fill out the seminar evaluation—let us know if we're meeting your needs**

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Thank You

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