



Passport Voice

21st Century
Telephony

NORTEL
NORTHERN TELECOM

Passport Voice: Transport, Networking and Beyond

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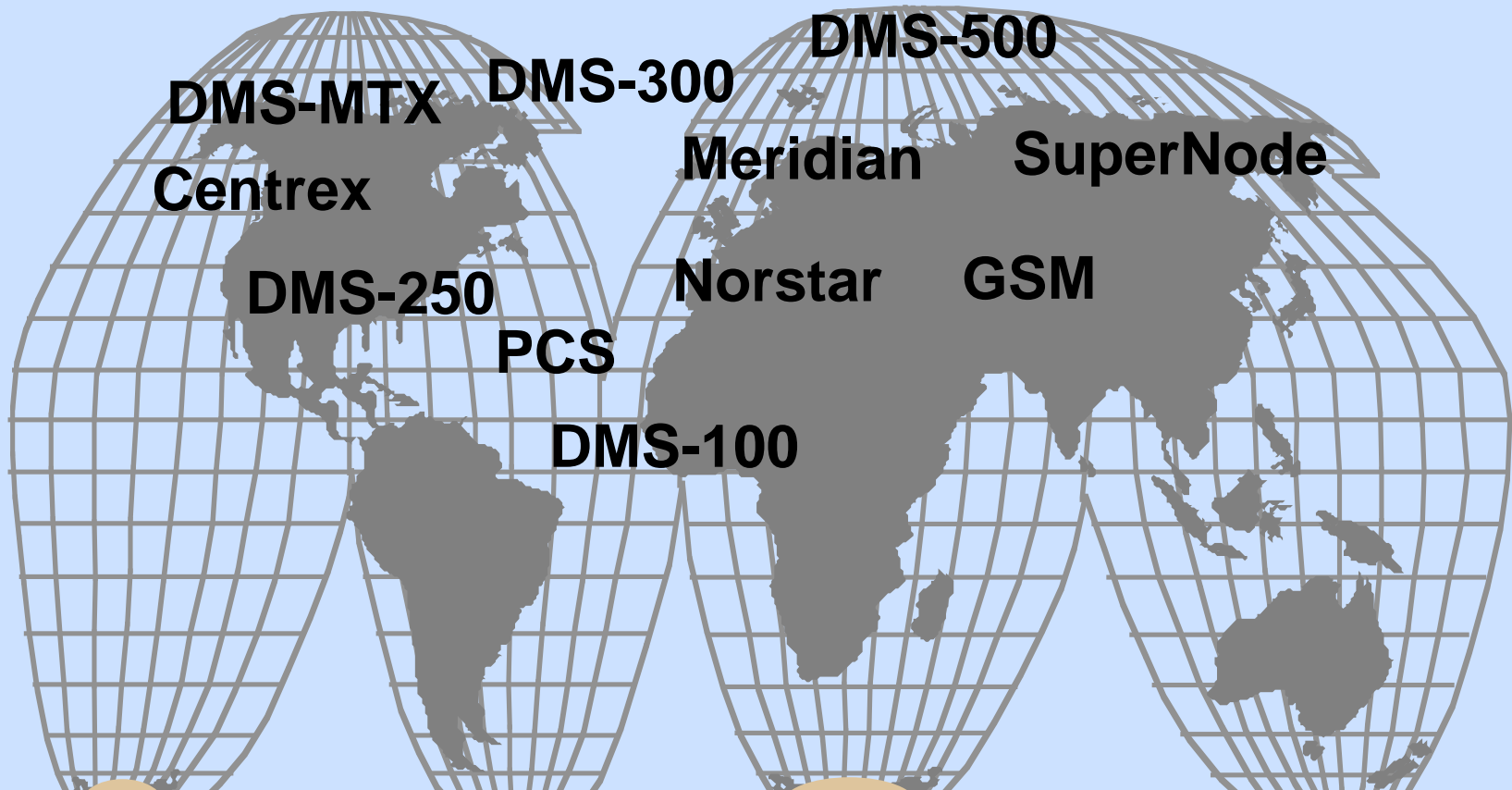
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Agenda

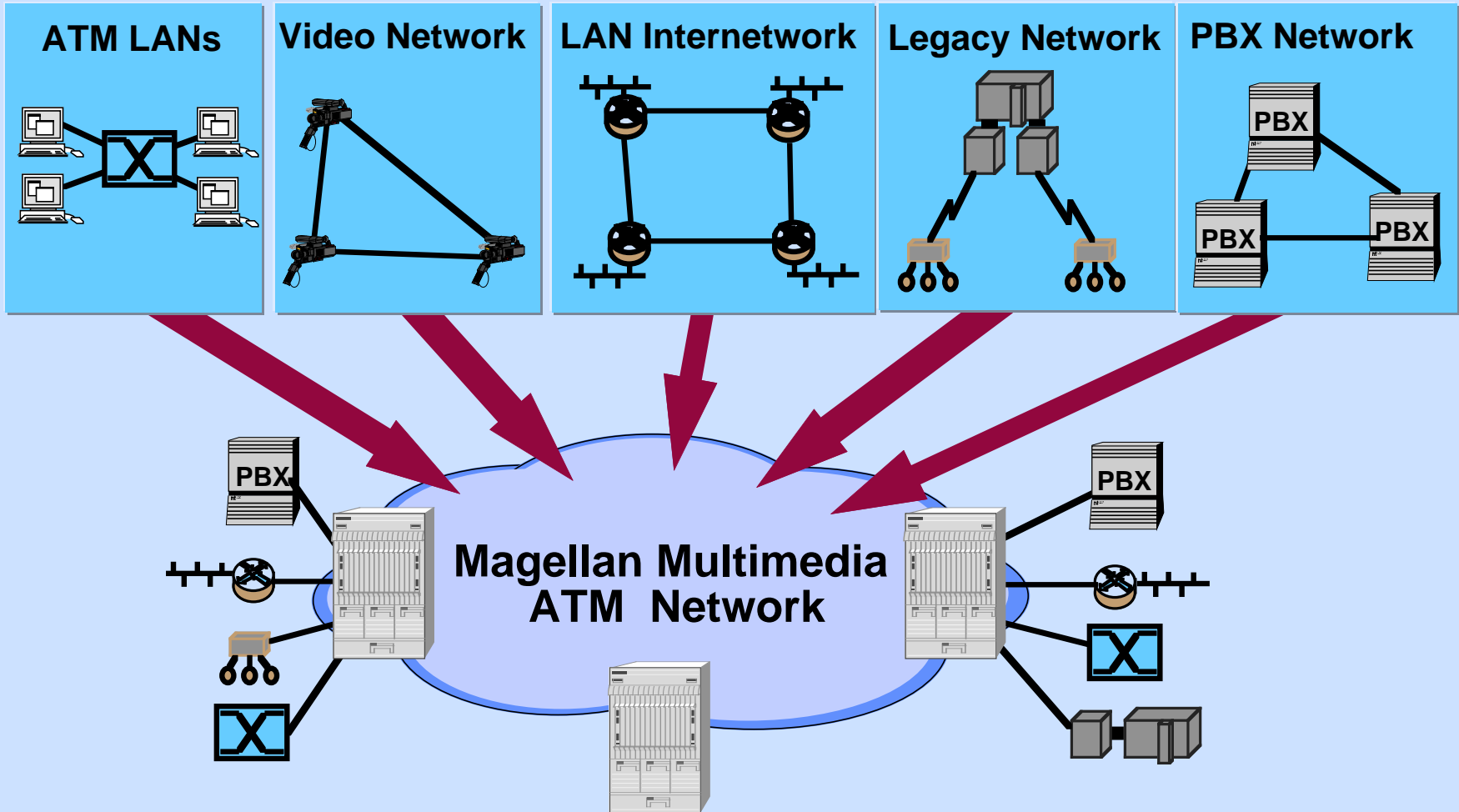
- **Voice on the passport network**
- Passport advanced network features
- Voice service overview
- Voice networking and futures
- Market experience with Passport voice

Why Nortel for Voice?



Nortel - more than 100 years of voice experience

Enterprise Network Consolidation



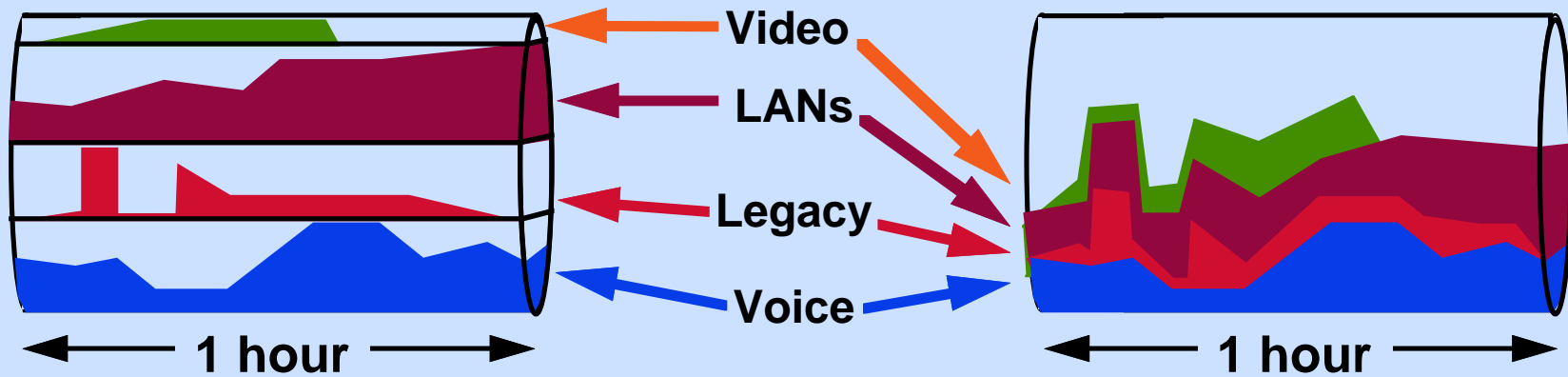
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Dynamic Bandwidth Management

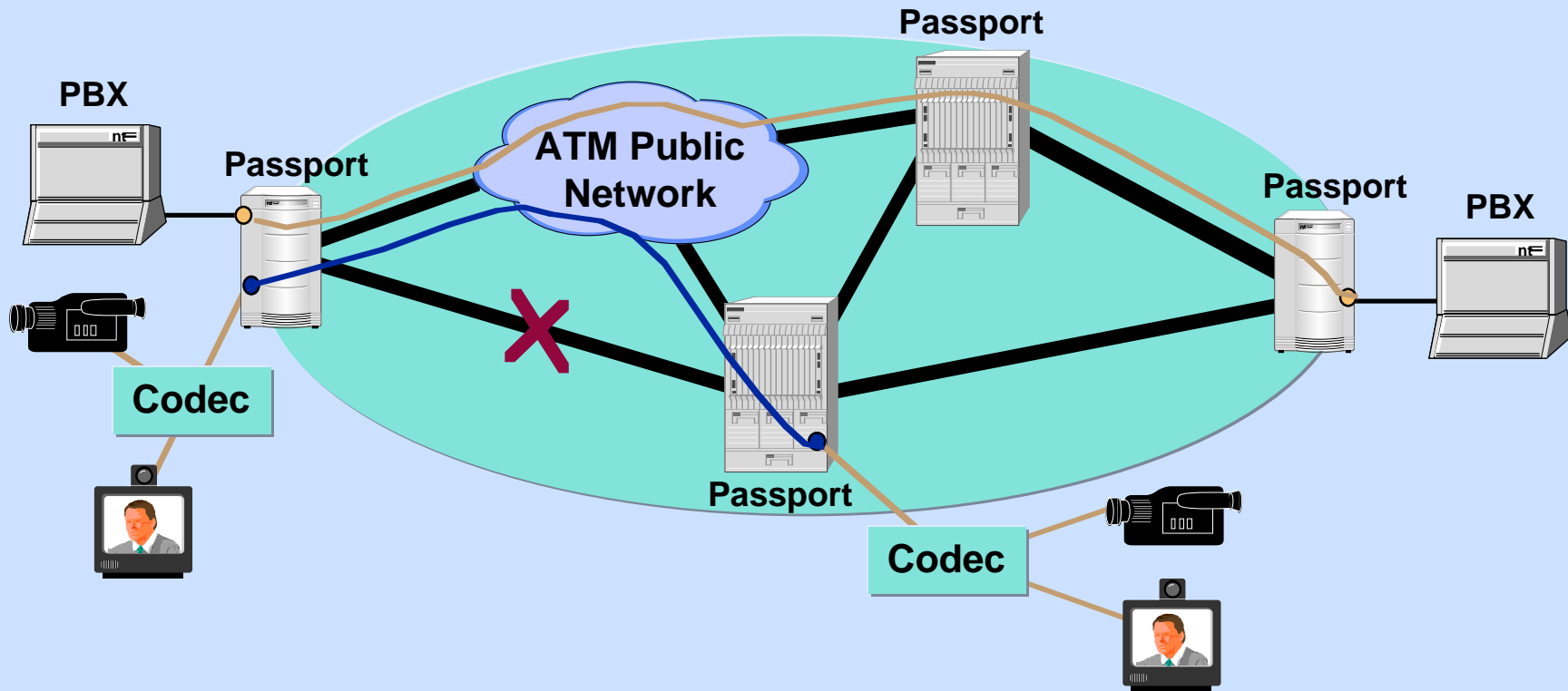
**Yesterday:
Time Division Muxes**

**Today:
Passport**



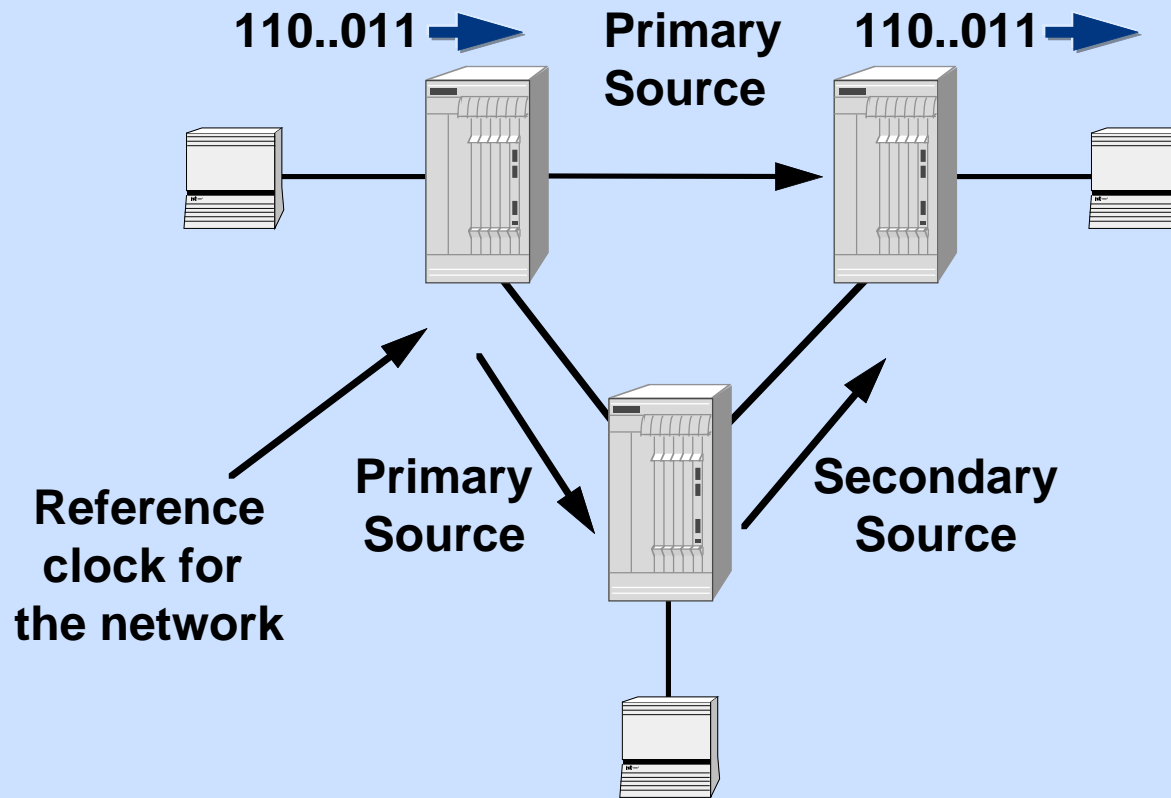
Major bandwidth and cost savings

Passport Advanced Networking



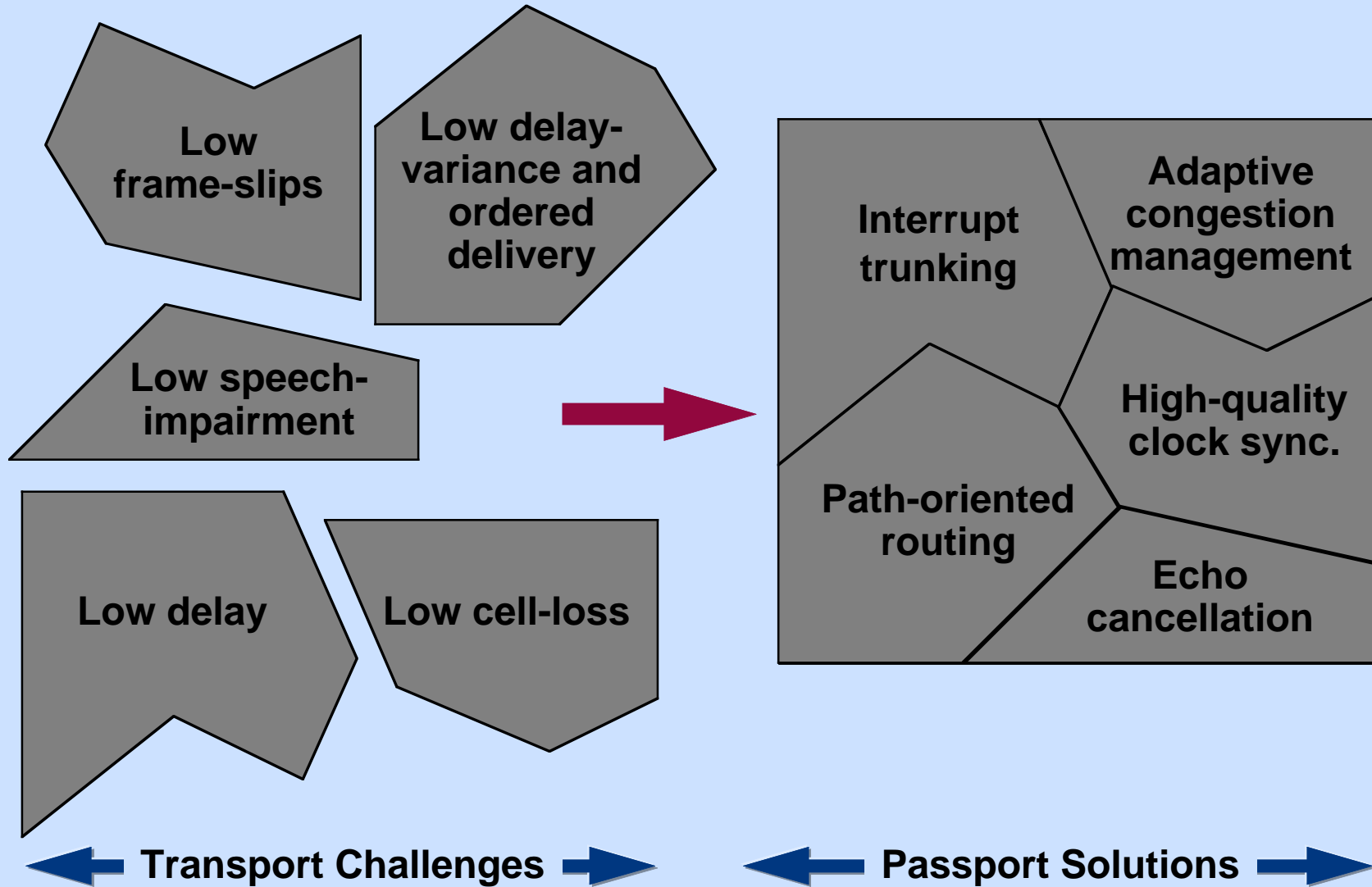
Full featured, robust routing

Network Clock Synchronization



Passport provides high quality clock synchronization

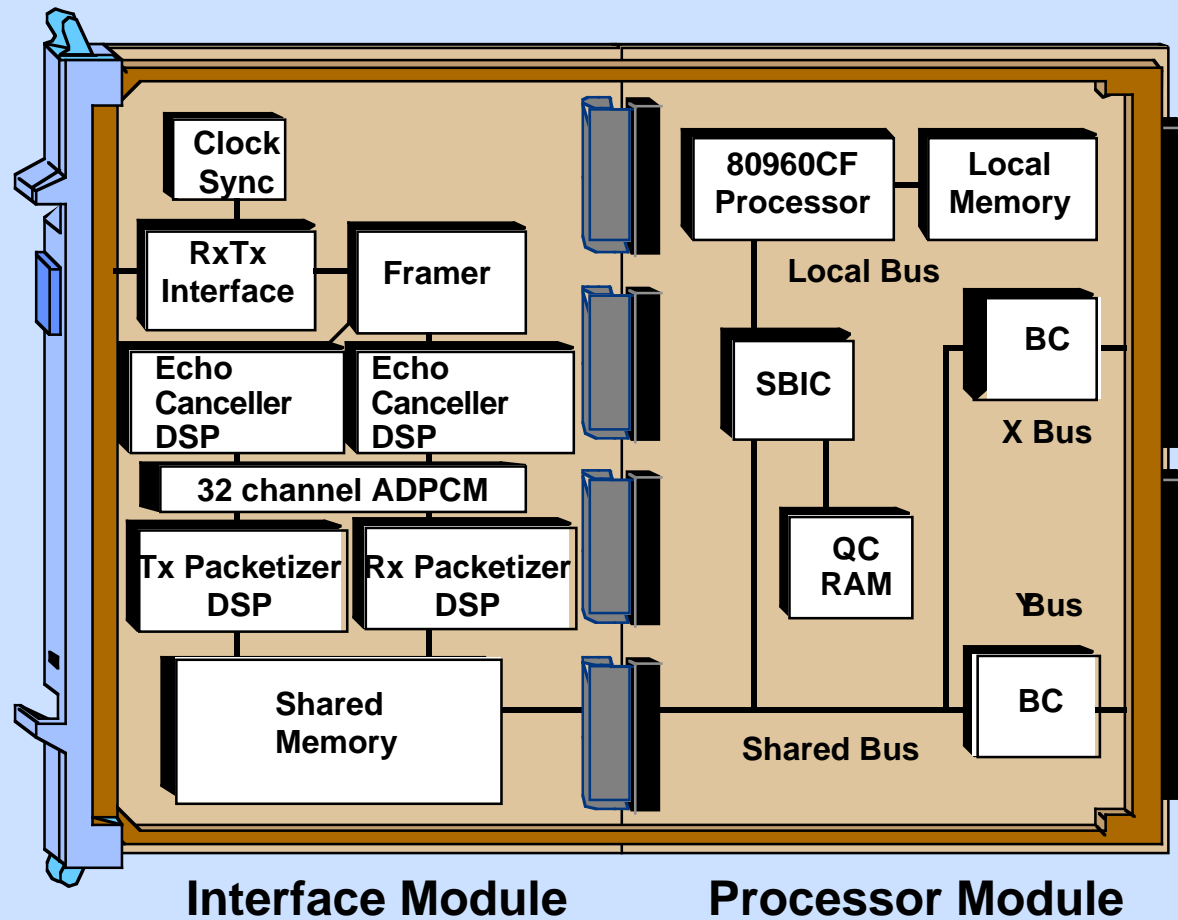
High-quality Voice Transport



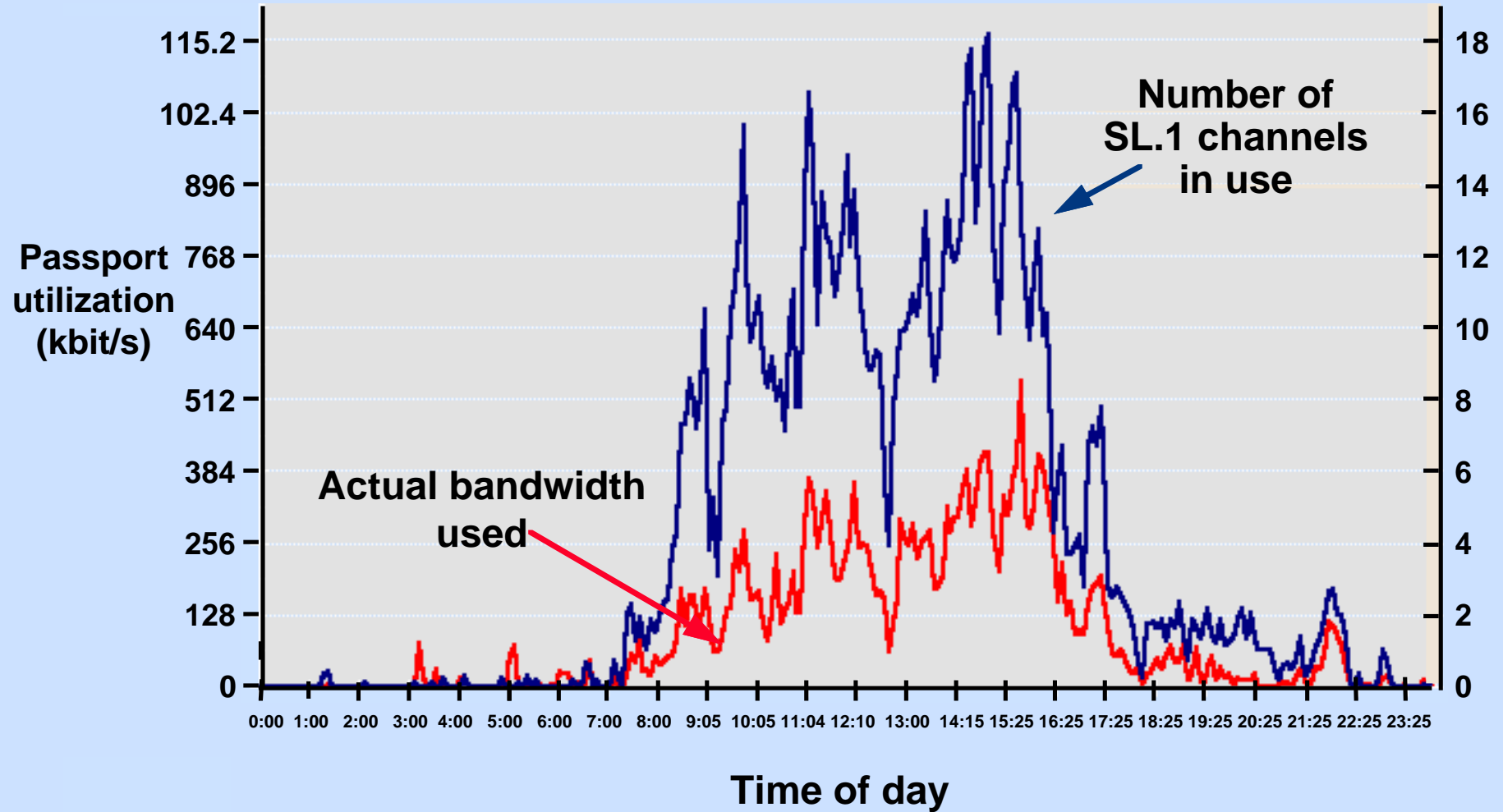
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Passport Voice Services

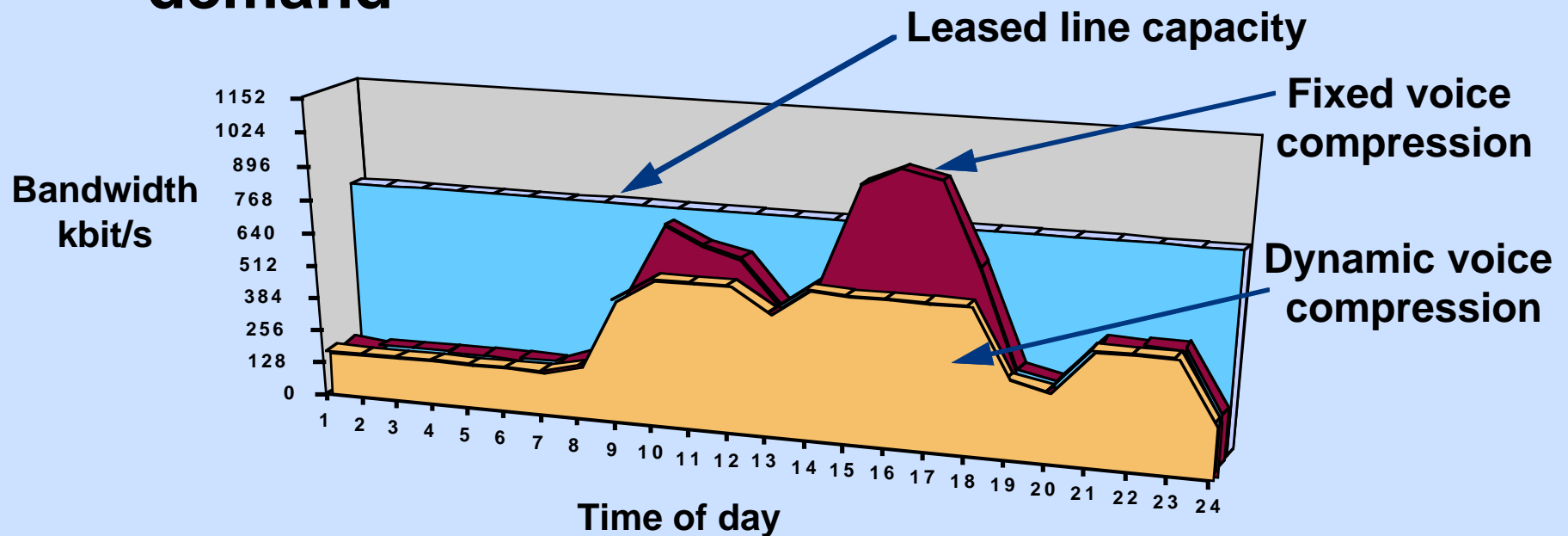


Passport Voice Savings



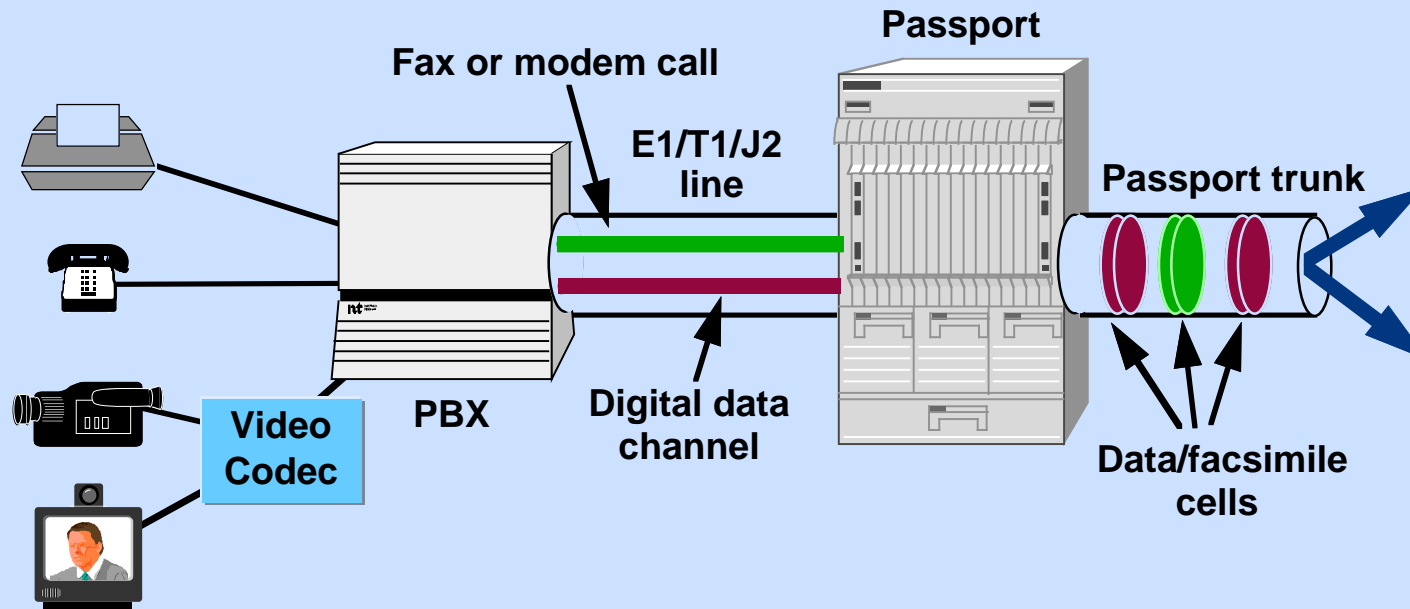
Dynamic Compression

- Automatically smooths the spikes in voice demand



Saves money by reducing backbone bandwidth requirements

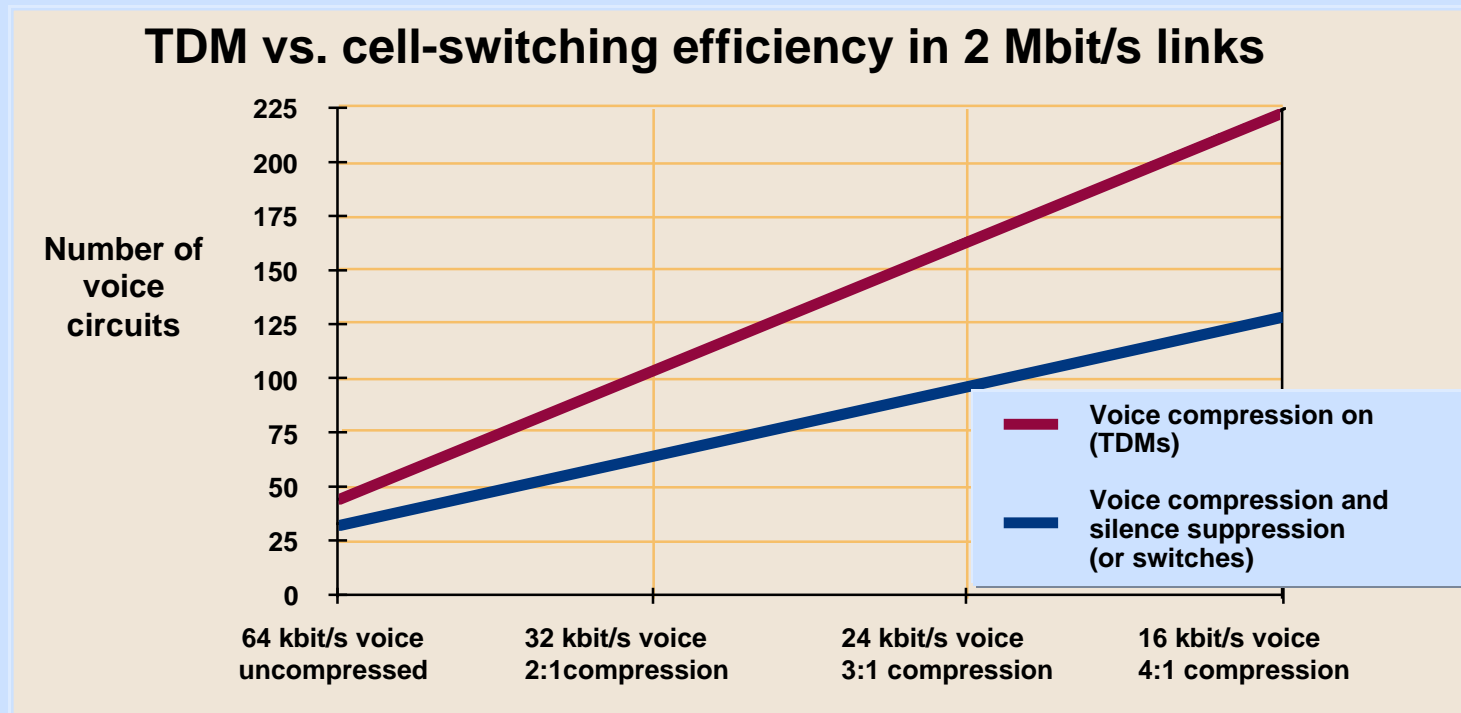
Integral Fax/Modem/Data Support



- Dynamic detection of modem or facsimile calls
- Transparent transport of digital data channels

Minimizes administration and maximizes network resources

Benefits of Silence Suppression



Voice compression

- X Quantization occurs
- X Adds delays
- X Impacted by tandem
- X Bandwidth consumed all the time

Silence suppression

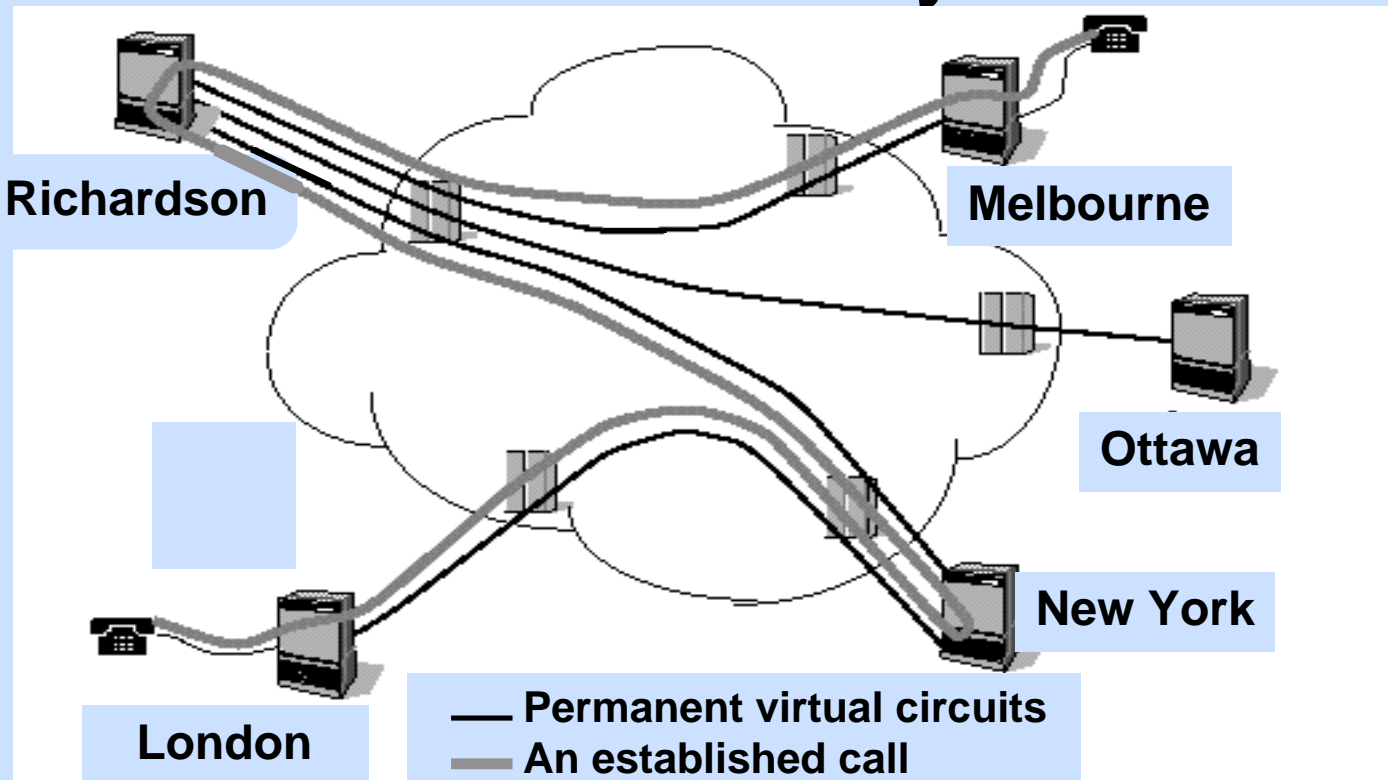
- ✓ No quantization
- ✓ Does not add delays
- ✓ Not impacted by tandem
- ✓ 100% bandwidth savings when idle

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Voice Networking on Passport

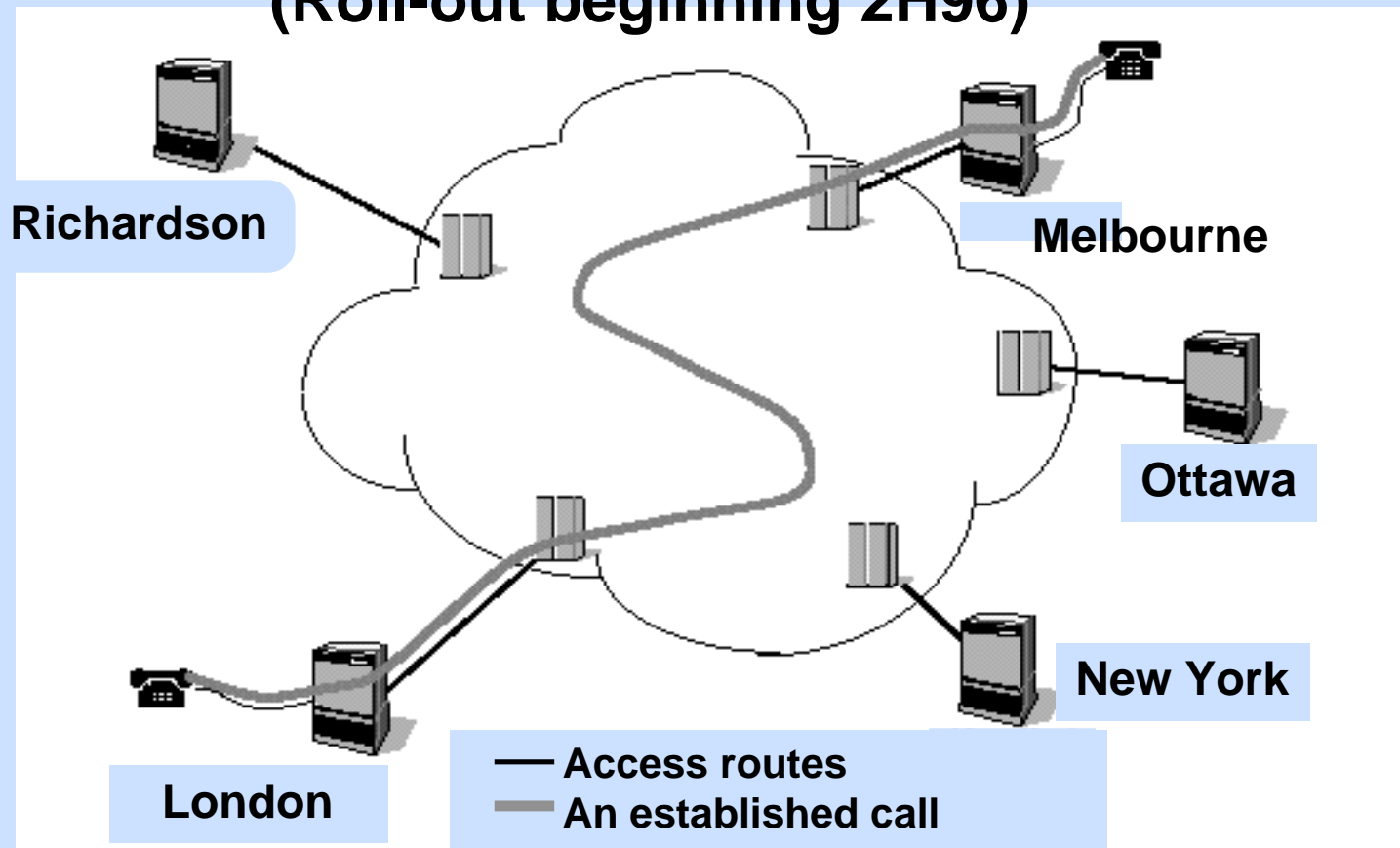
Typical tandem PBX hierarchy



Tandeming is unnecessarily complex and costly

Voice Networking on Passport

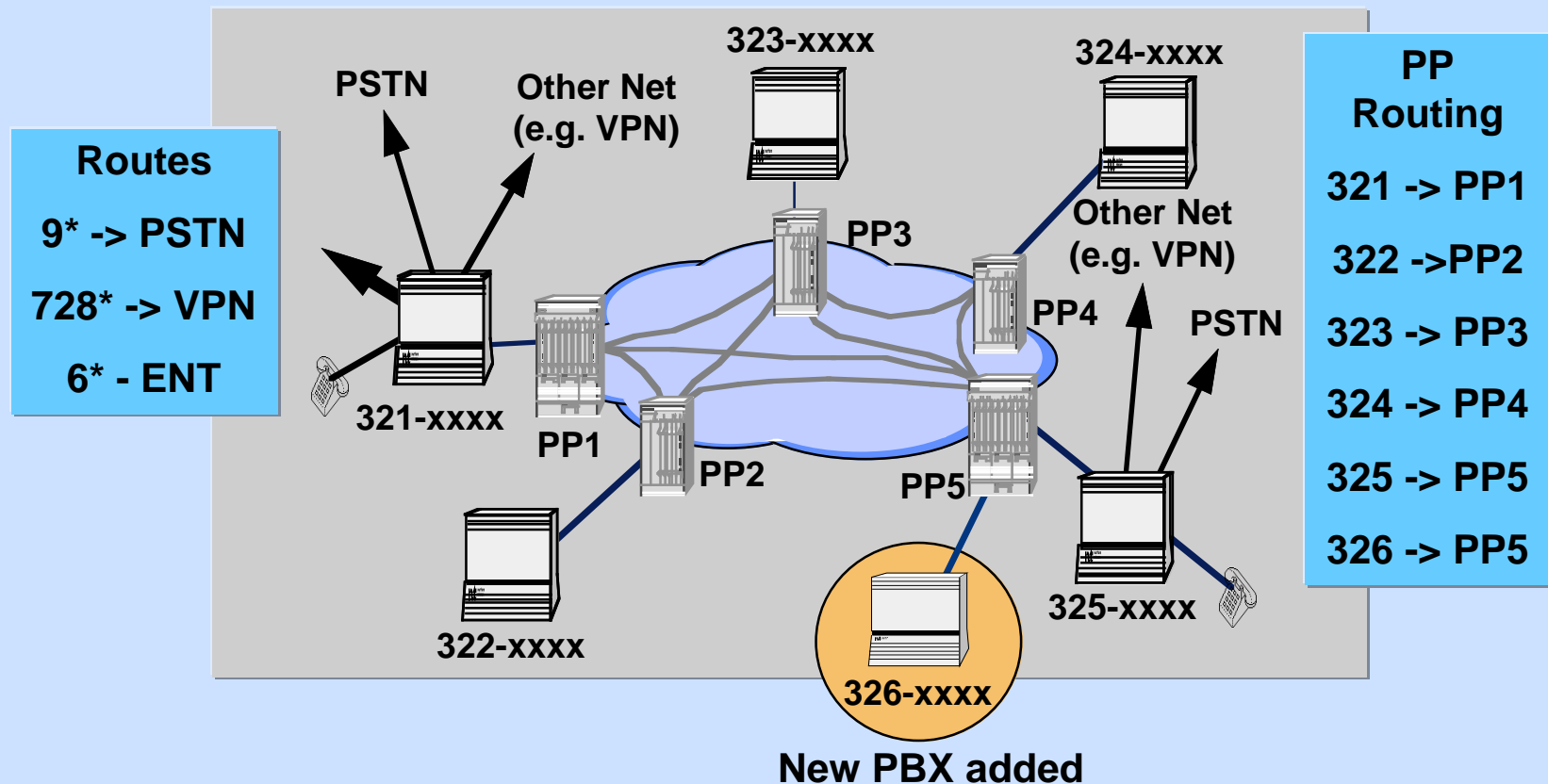
(Roll-out beginning 2H96)



Passport network acts like a distributed tandem voice switch

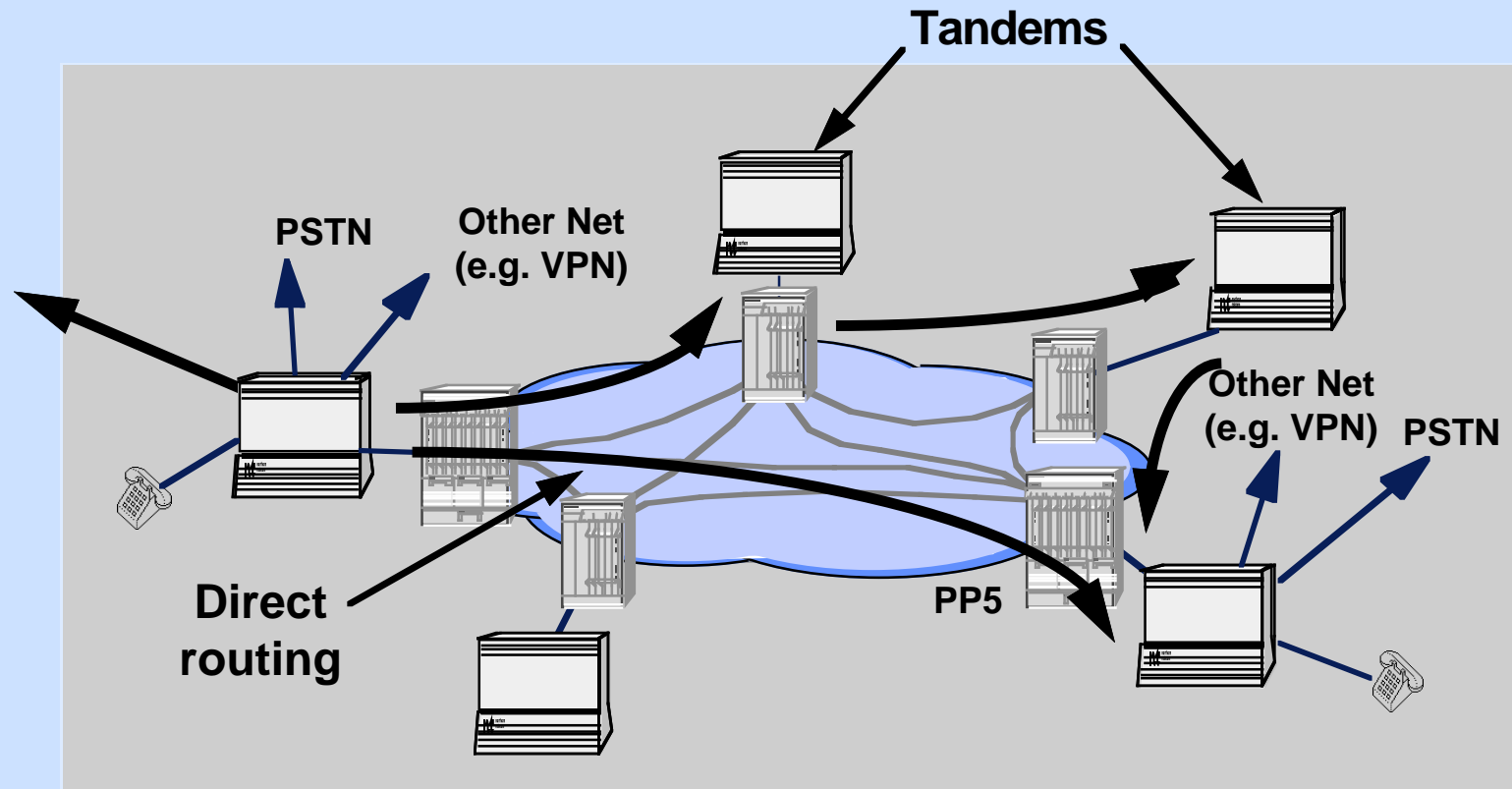
Simplified Call Routing

- **Simplification of call-route specification**
 - PBX main route is to Passport network
 - introduction of new prefixes simplified



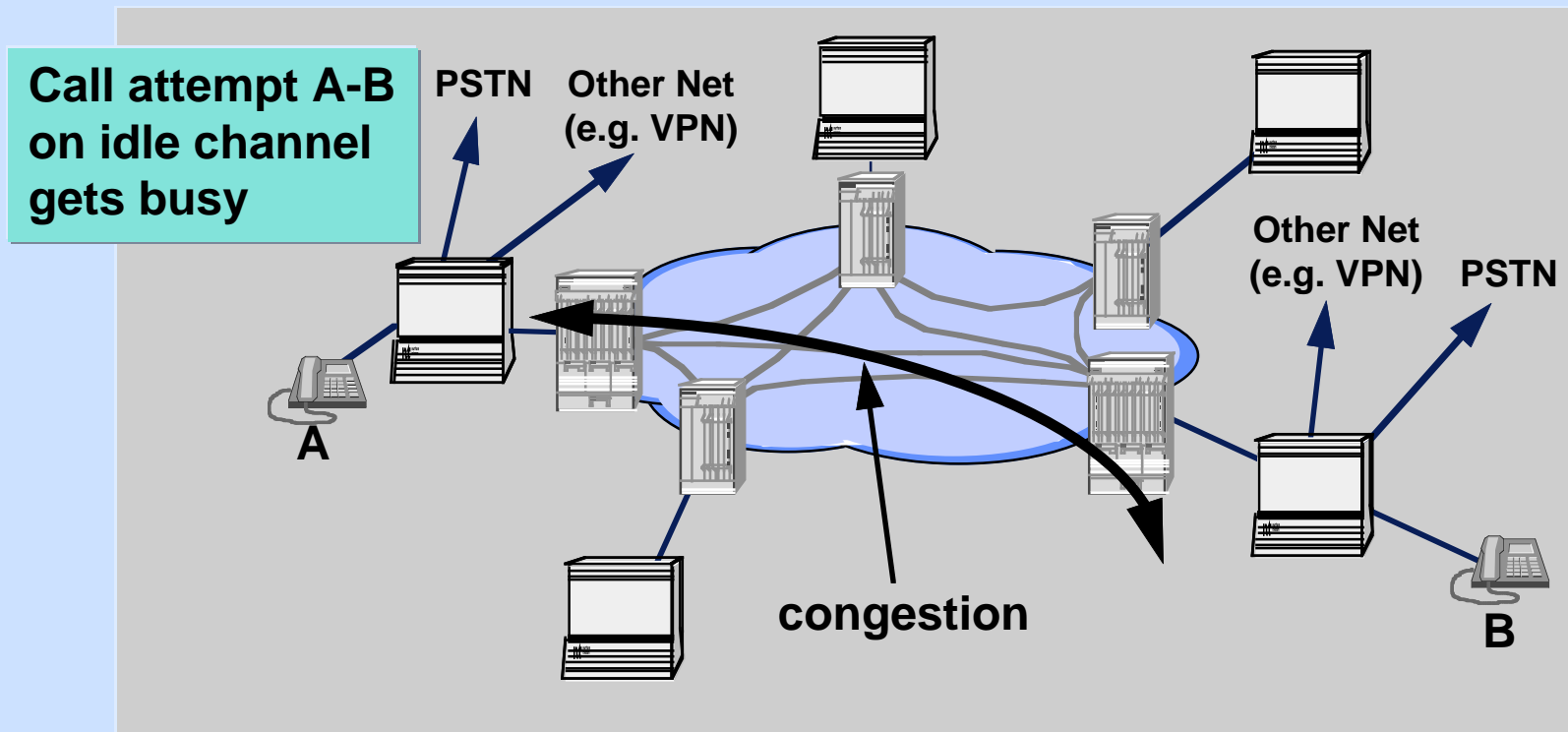
Dynamic Route Computation

- Bandwidth consumed on least number of links
- Topology changes require no PBX reconfiguration



Connection Control

- Provides flow control
 - PBX feedback when network is congested



Benefits of Voice Networking

- **Reduced hardware and maintenance costs**
 - up to 50% less digital interfaces
- **Improved bandwidth efficiency**
 - every call routed directly over optimum path
- **Higher end-to-end voice quality**
 - only one compression/decompression per call
- **Improved quality of service**
 - Passport can reject calls during congestion

Nortel is #1 for voice!

Voice Networking Roll-out

- **Field trials beginning 3Q96**
- **First protocol: ECMA QSIG**
- **Other protocols to follow, including:**
 - MCDN
 - CAS (DTMF, DS1, TTC-2M and E1)
 - North American ISDN
 - ISO QSIG
 - DPNSS
 - country-specific ISDNs

Future Strategic Offerings

- **Fax idle suppression**
- **Advanced compression algorithms (LD-CELP, G.729 ...)**
- **Fax demodulation**
- **Tandem pass-thru**
- **Enhanced echo canceller**
- **Multi-port card**

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Who's Using Passport Voice?

- **Leading service providers world-wide**
 - international and domestic carriers
- **Corporate**
 - banking, software manufacturers, oil, electronics, health care
- **Defence**
- **Campus environments**
 - universities

Customers from around the world are realizing the economic benefits of Passport voice service

MFS and Magellan Passport

- First public voice-over-ATM VBR service
- WAVE (wide area voice exchange)
- Allows end-user to reclaim unused bandwidth for data
- Up to 50% savings using silence suppression



Passport Voice Service

- \$ Bandwidth efficiency**
- ✓ High quality voice service**
- ✓ Resilient networking**
- ✓ Flexibility for the future**
- ✓ Leading the way in voice-over-ATM**

Tomorrow's voice transport today!