

FORE
SYSTEMS.

NORTEL
NORTHERN TELECOM

FORE Systems & Nortel

A Partnership for Seamless Networking

Leadership
Innovation
Quality
Responsiveness

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The FORE Systems - Nortel Partnership

Presentation Objectives:

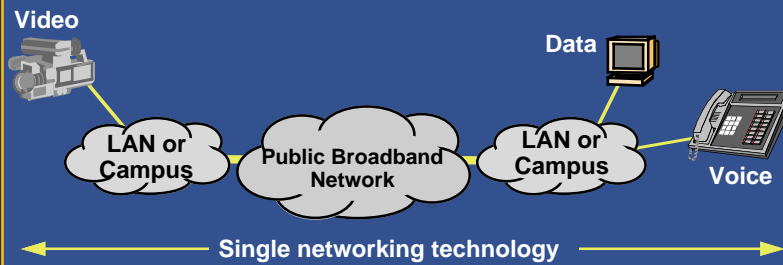
1. Partnership Goals & Benefits
2. FORE & Nortel: Leading the ATM Networking Convergence
3. FORE ATM-based Customer Applications
4. The Reality of ATM: Check-points and Considerations

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ATM-focused networking through the LAN & WAN



Seamless ATM networking from desktop-to-desktop

- Supports existing and future applications
- Reduces capital and operating cost

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Providing industry-best integrated solutions for ATM networking...

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- ATM WAN & carrier grade switching
- First to deliver carrier-grade SVCs
- Best-in-class voice over ATM
- ATM evolution for legacy services
- ATM LAN & ATM WAN access networking
- World-wide leader in ATM CPE
- Best-in-class LAN ATM features
- ATM integration for legacy LAN devices

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← **End-to-end solutions through partnership** →

The Nortel - FORE Systems ATM Networking Advantage

- Seamless ATM networking to the desktop
 - enabled by common software:

ForeThought & ForeView -

integrated into Magellan software,
and across the *ENTIRE* network

- Advanced ATM features - SVCs, signalling, traffic management
- True interoperability and full feature *transparency*

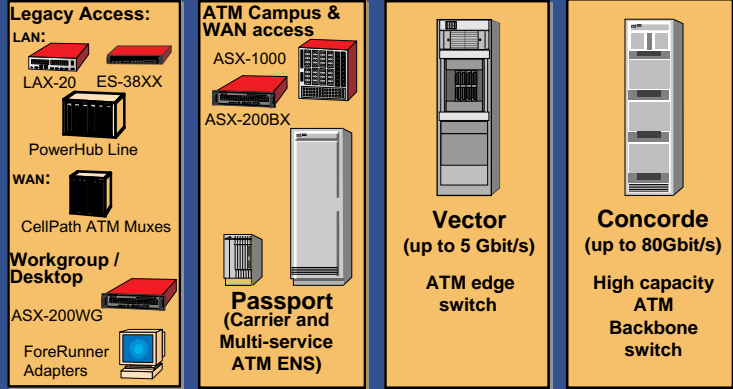
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Nortel / FORE ATM Portfolio

ForeThought / ForeView Software



End Users

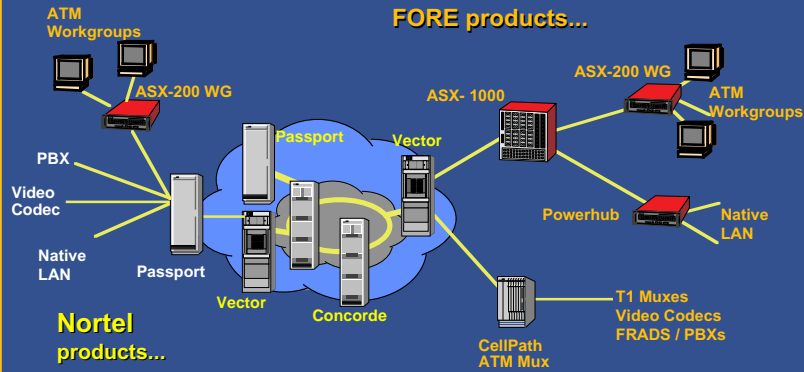
Service Providers

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ATM Networking Solutions



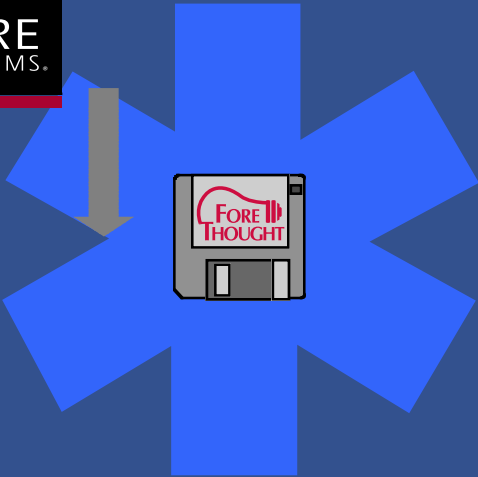
Nortel products...

FORE products...

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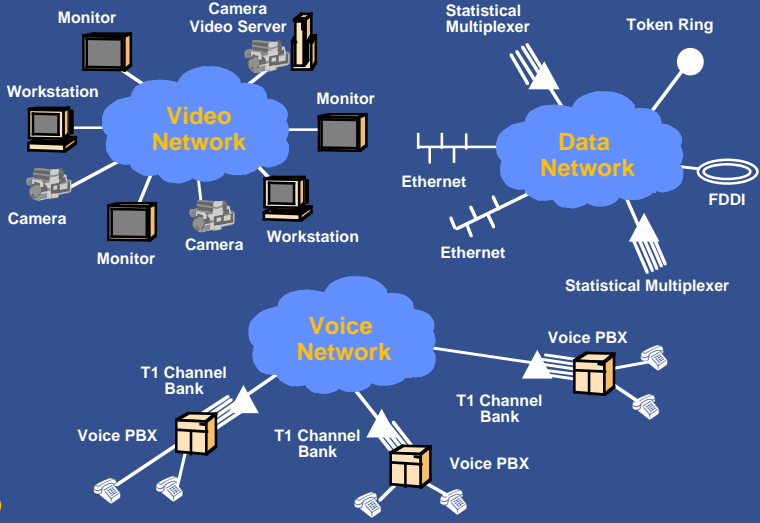
- Enterprise-wide communication
- Seamless operations and service delivery
- Standards-based portfolio with proven interoperability

All Roads Lead To ATM



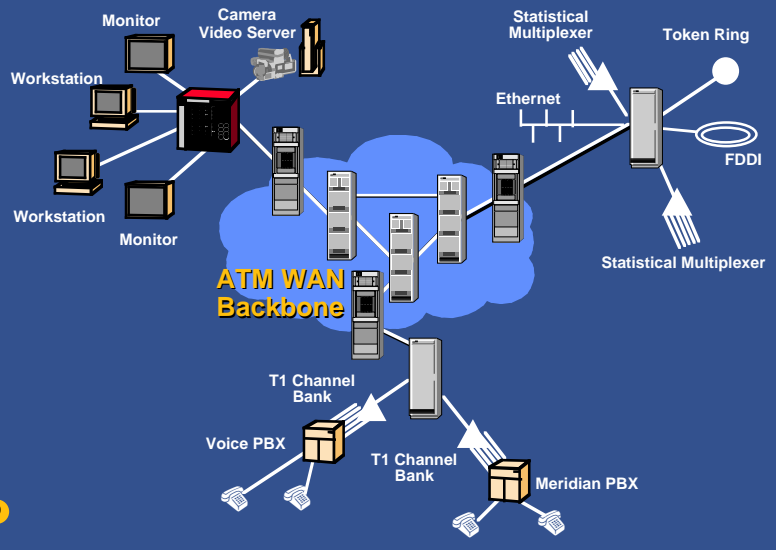
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Today's Typical Network Approach



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The FORE-Nortel ATM Networking Advantage



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The Benefits of ATM

- Improves performance of existing applications
- Integrates voice, video and data networks
- Enables new applications
- Easily accommodates future growth

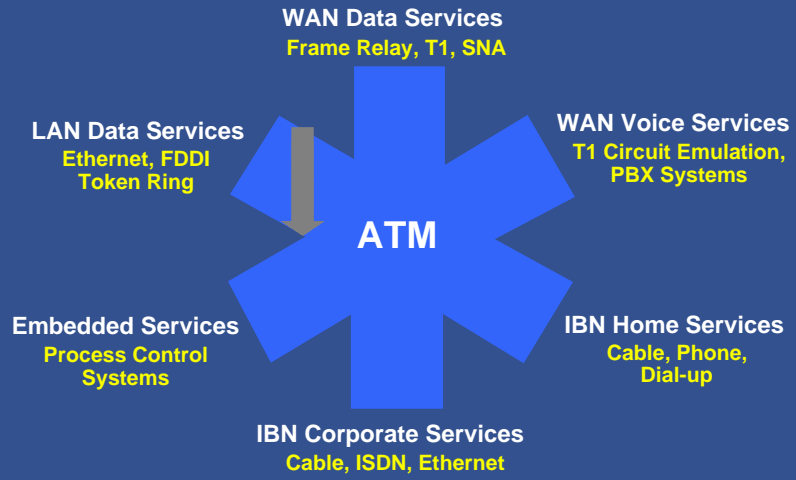
**ATM increases productivity
and saves money**

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ATM – The Convergence

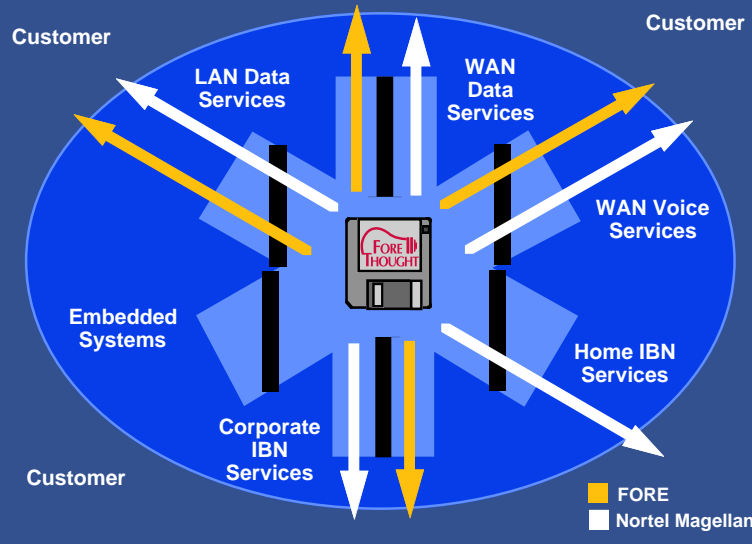


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FORE Systems & Nortel – Driving The Convergence



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ForeThought Partners (The FORE-Nortel Advantage)



LAN Data Services

Cabletron
Hewlett Packard
Auspex
Tricord
ODS
Allied Telesyn
Madge Networks
Data General
Maximum Strategy
EMC

WAN Data Services

ADC Kentrox
Premisys
Sprint
NTT
Ameritech
SwissTel

WAN Voice Services

Mitel
ADC Kentrox
Premisys

Home Integrated Broadband Services

Microsoft/TCI
Southwestern Bell
Hewlett Packard
General Instrument

Corporate Integrated Broadband Services

Allegheny Health,
Education, and
Research Foundation

Embedded Systems

Avid
Silicomp
QNX
LanQuest

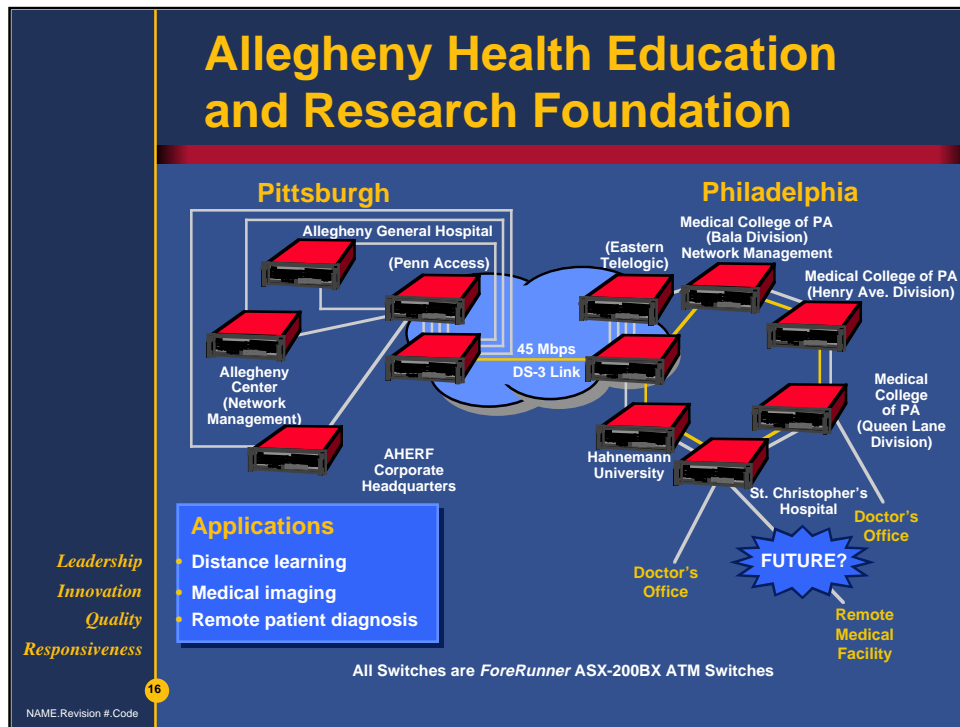
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FORE ATM-based Customer Applications

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Business Problem/Opportunity

- Need for training/education across many hospitals
- Need for multiple expertises at each hospital

Limitations of previous solution

- Minimal remote learning
- Each hospital has a few areas of expertise

Key requirements for new networks

- Large, dedicated bandwidth
- High quality real time video (multicast)
- Guaranteed QoS

US Government ATDNet

Applications

- Cross agency collaboration
- Video conferencing
- Supercomputing
- Data modeling
- File transfer
- Imaging

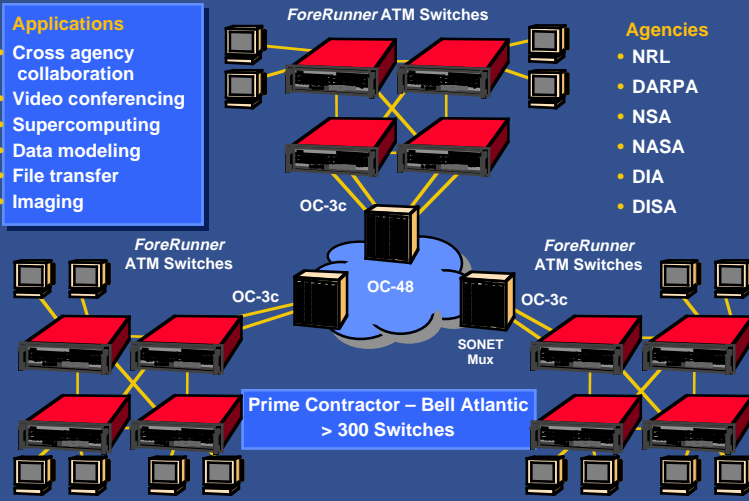
Agencies

- NRL
- DARPA
- NSA
- NASA
- DIA
- DISA

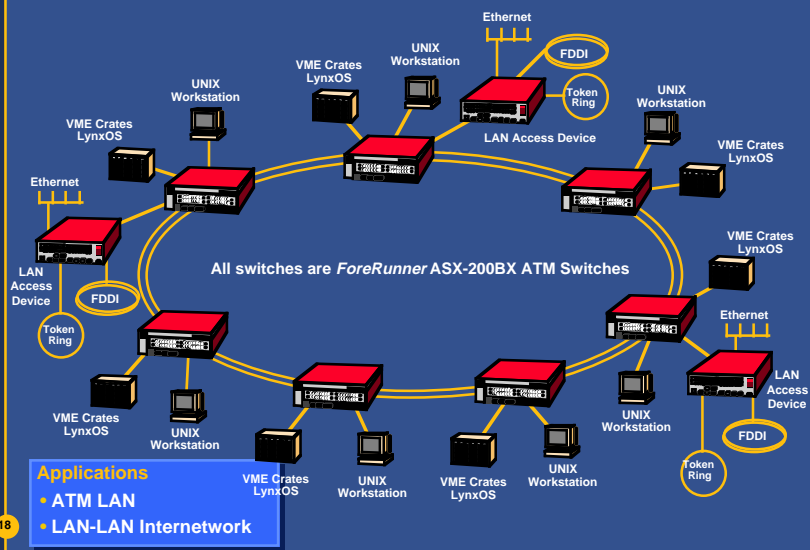
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European Synchrotron Radiation Facility



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Monterey Bay Aquarium Research Institute (MBARI)

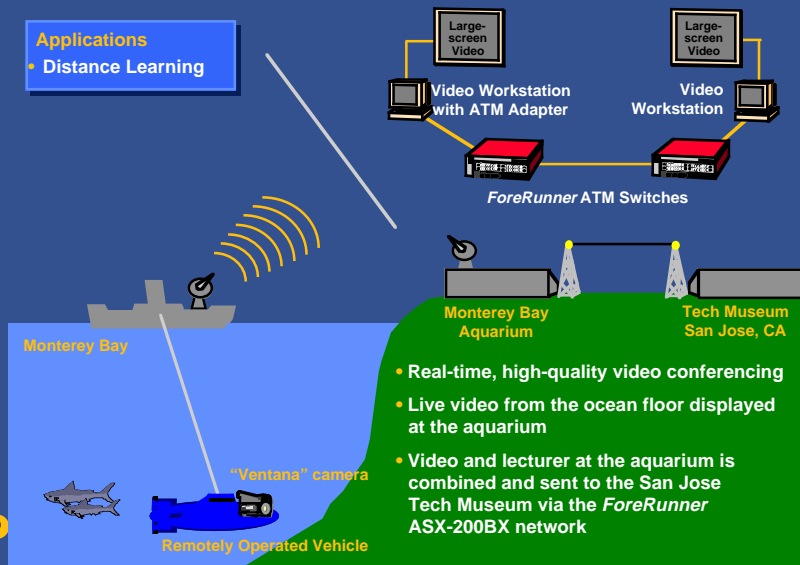
Applications

- Distance Learning

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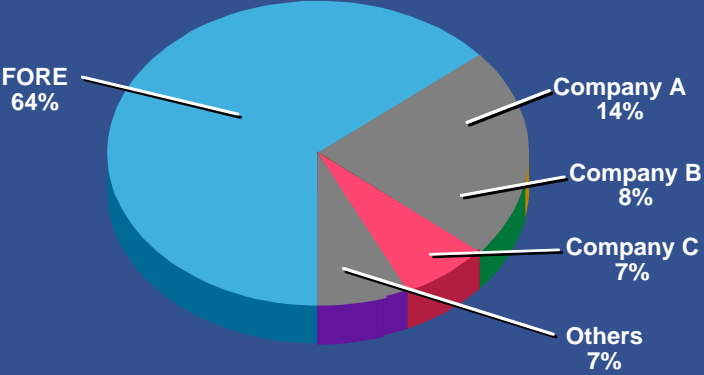
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FORE Systems – The ATM CPE Market Leader

1994-1995 Worldwide ATM Switch Market
Shares by End-User Revenue



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20 Source: Dataquest (October 1995)

The Reality Of ATM

Decision Checkpoints:

- Standards
- Interoperability
- Network Management
- Cost of Ownership

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The Reality Of ATM: ATM Forum & ITU-T Standards

Standards Parameter	FORE-Nortel	
	Status	Compliant
Physical Layer Interfaces	defined	✓
ATM Layer Specifications	defined	✓
ILMI Specification	defined	✓
LAN Emulation 1.0	defined	✓
UNI 3.0 Signaling	defined	✓

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ForeThought – The Value-Added

Features

- Bandwidth management
- “Per application” QoS
- IP multicast over ATM
- Distributed intelligence
- Intelligent VLANs at multiple protocol levels
- *ForeThought* PNNI

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The Reality of ATM: ATM Interoperability

^{Cer} FORE^TIFIED - FORE-Nortel Interoperable

DEC	AT&T	Lucent
Hewlett-Packard	Fibercom	Stratacom
IBM	Fujitsu	TRW
Cabletron	General DataComm	Bell Atlantic
Cisco	GTE	MFS Datanet
NetEdge	Newbridge	Pacific Bell
ODS		Sprint
ADC Kentrox		WilTel

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The Reality of ATM: Network Management

ForeView Network
Management Software



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ForeView Network Management

Capability

- Network discovery and mapping
- Inventory management
- Virtual circuit tracing
- Performance monitoring
- PVC and SPVC configuration

Compatability

- HP OpenView
- SunNet manager
- IBM NetView/6000
- WindowsNT
- Standalone version

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The Reality of ATM: The Cost of Ownership

Where are the Savings?

- Cost/Capacity: switch vs. router
- Cost for Services: ATM WAN vs. conventional
- Elimination of overlay networks
- Elimination of multiple links between nodes

**ATM is the most economical way to
increase network capacity and services**

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The FORE-NORTEL Partnership: The New Realities of ATM

- Standards → ATM Forum defined
- Interoperability → FORE^{Cer}TIFIED
→ *ForeThought* Partners
- Network management → *ForeView* NMS
- Cost of ownership → Demonstrable savings & improved productivity

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All Roads Lead To ATM

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Seamless...



ATM Networks

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