

Multimedia Branch Access Solutions

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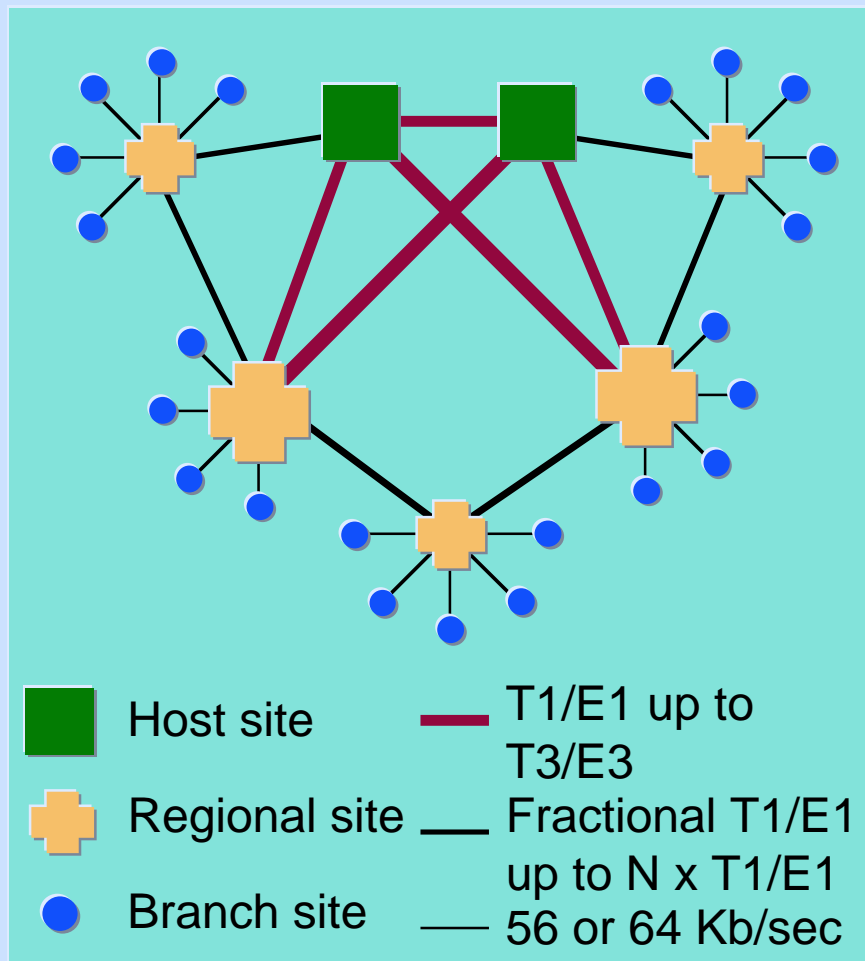
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Agenda

- **Defining Multimedia Access**
- **Multimedia Access in the Magellan Portfolio**
- **Oscar Platform and Services Description**
- **Rollout**
- **Telefónica Presentation**

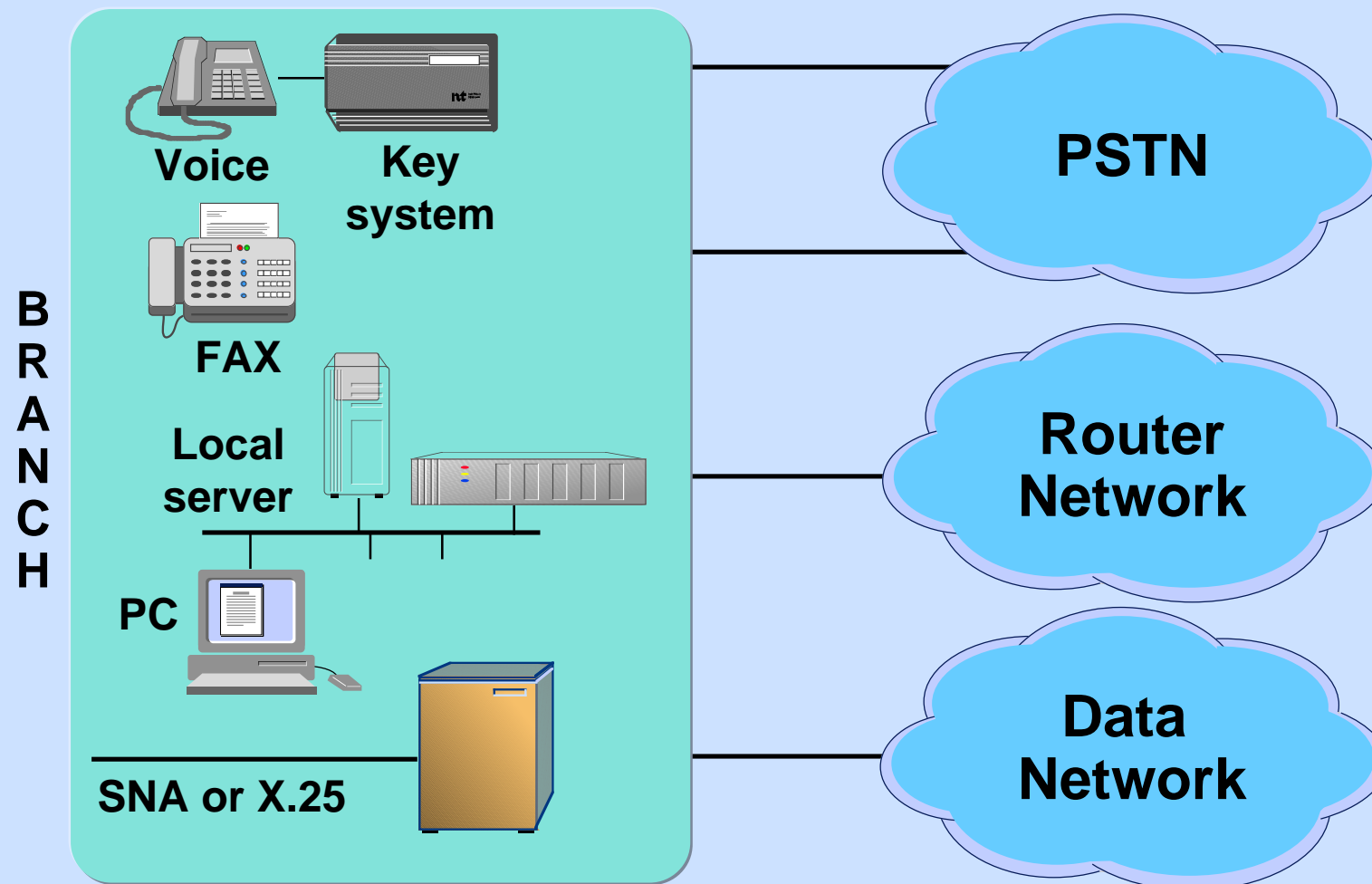
Customer Access Network Model



- **Topology**
 - many branches
 - hierarchical WAN
 - regional and host sites meshed
 - single connection to branch with dial backup
- **Branch attributes**
 - hierarchical traffic
 - less than 20 workers per branch

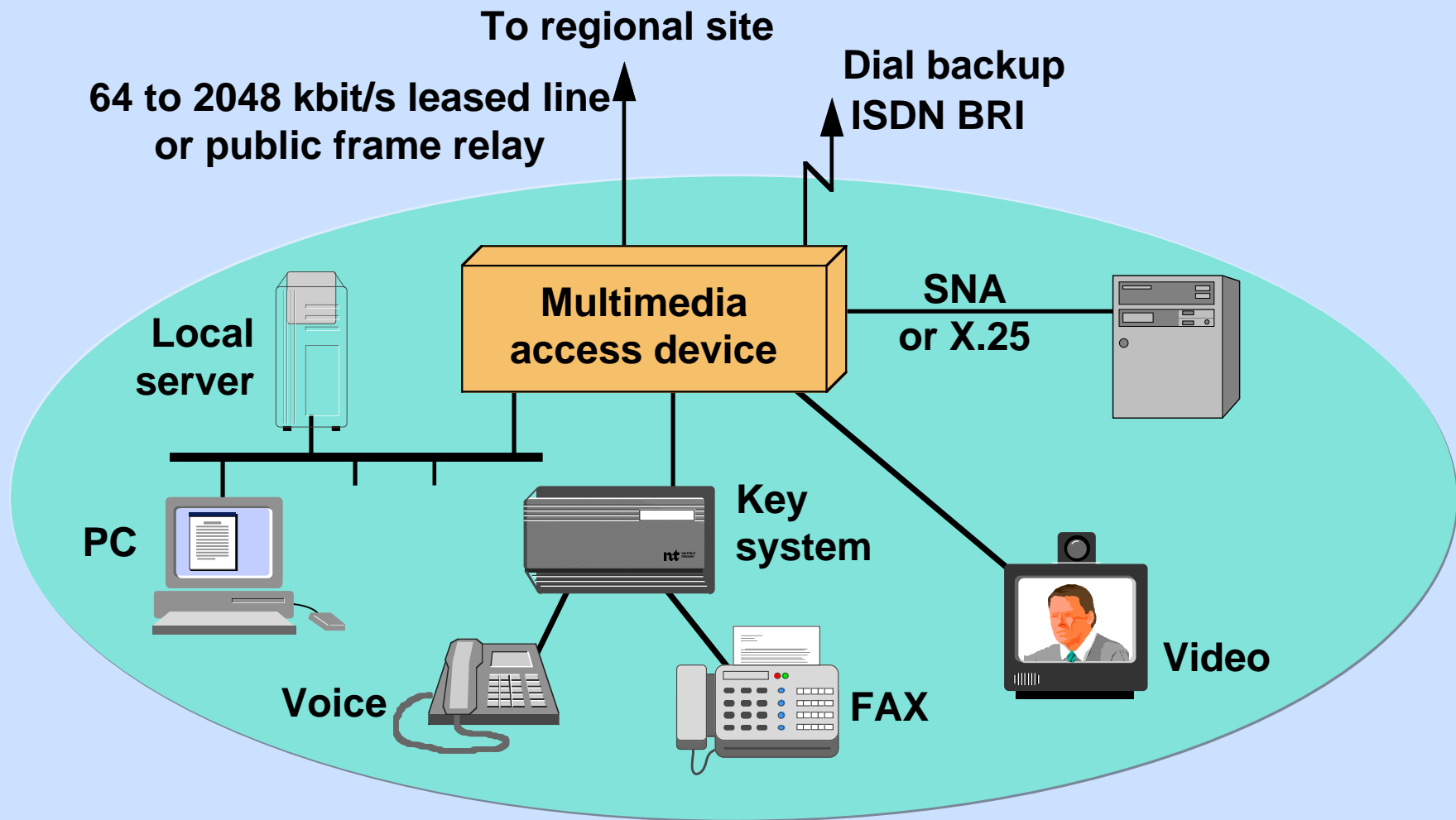
Branch access implies different requirements

Today's Branch Environment



Opportunities to consolidate traffic and reduce cost

Branch Site Requirements

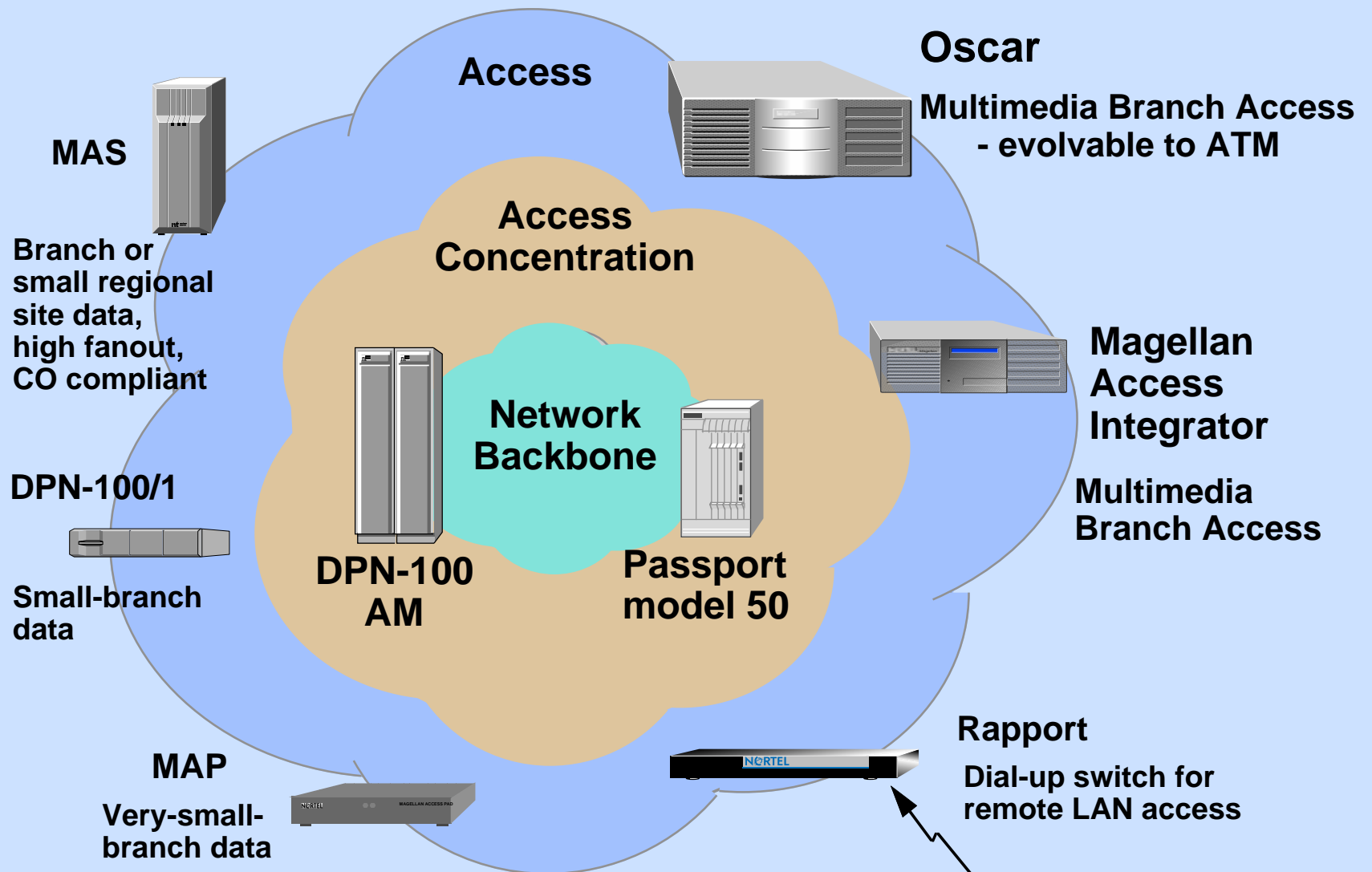


Consolidation, operational simplicity, manageability

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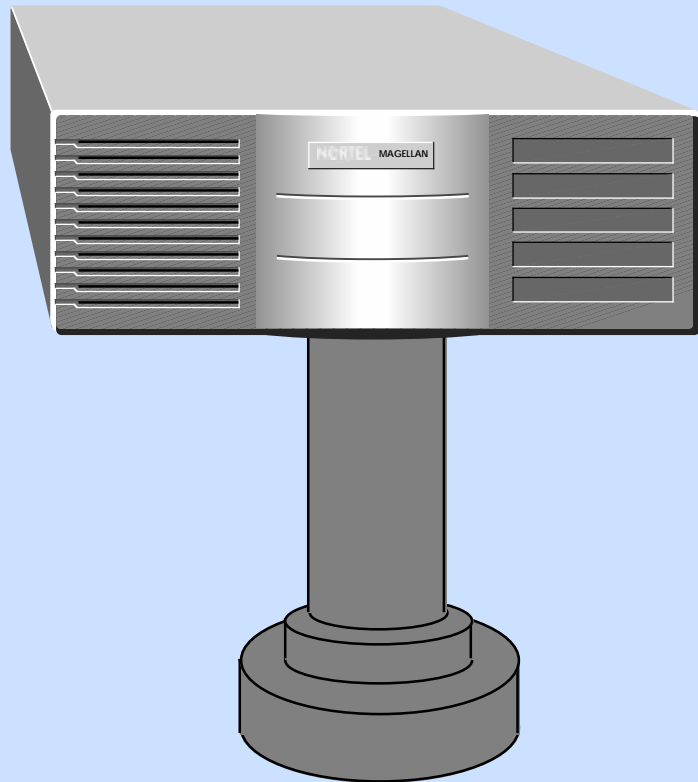
Magellan Access Products



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Introducing Oscar...



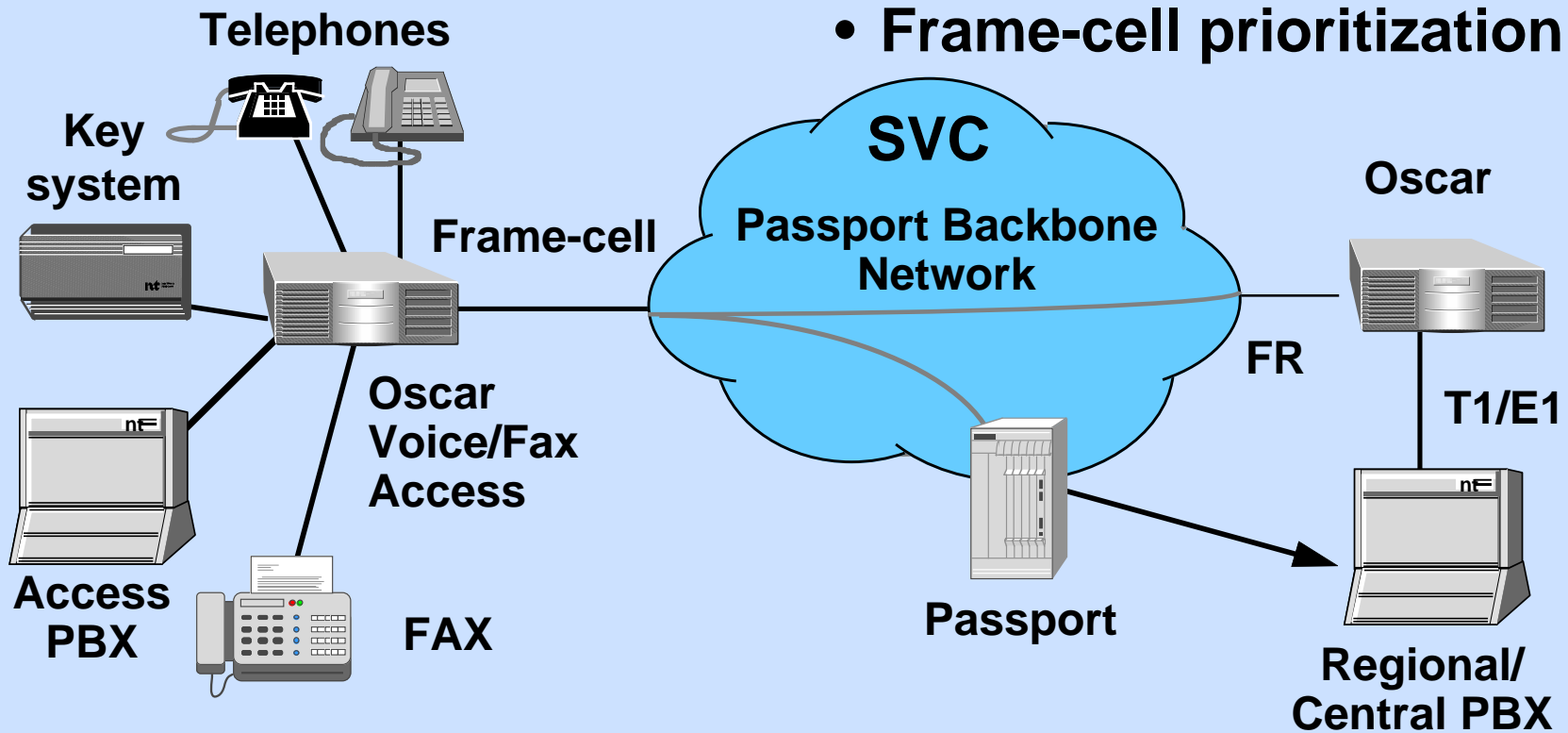
Oscar provides high value branch access for Passport networks

- **Consolidation of traffic**
- **Bandwidth savings**
- **Scaleable**
- **Low cost operation**
- **Integrated management**
- **Future proof architecture**

Extends Passport values to the branch

Oscar Voice / Fax Services

Analog or digital
voice branch equipment



- No PVCs to provision
- Avoid multiple hops
- Frame-cell prioritization

Proven voice interfaces: advanced voice networking

Oscar LAN Services

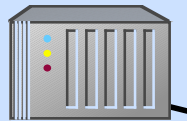
Solution for large numbers of access routers

- Scalable
- Simple configuration
- Bandwidth efficient

Branch Routers



Oscar Access Router

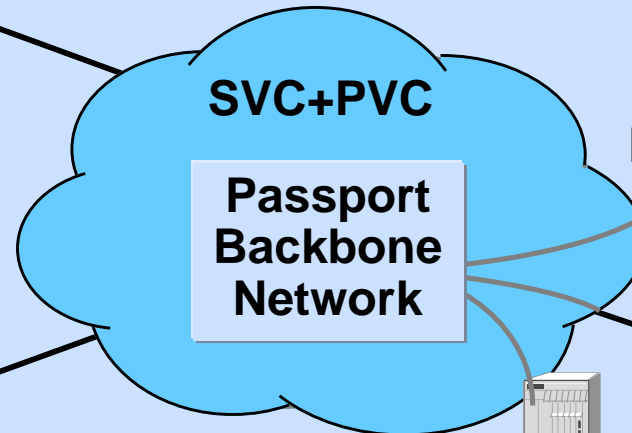
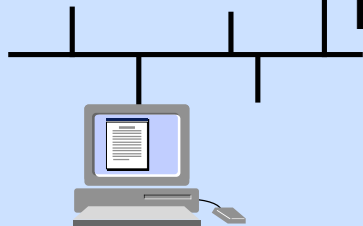


External Access Router

FR



Oscar Access Router



SVC+PVC

Passport Backbone Network

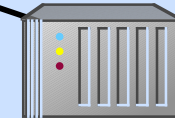
Passport ILS

Oscar Router



FR

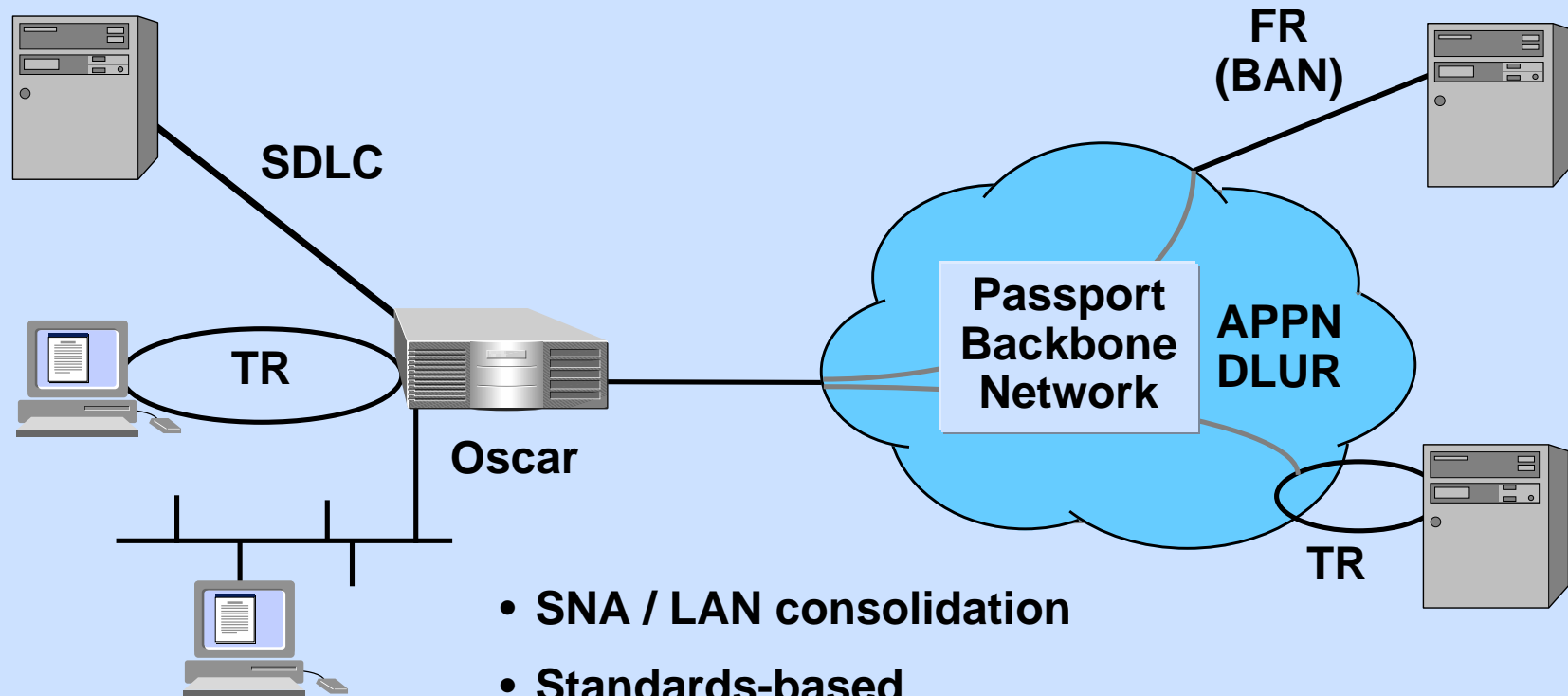
RFC 1490



External Router

Flexible LAN access solutions

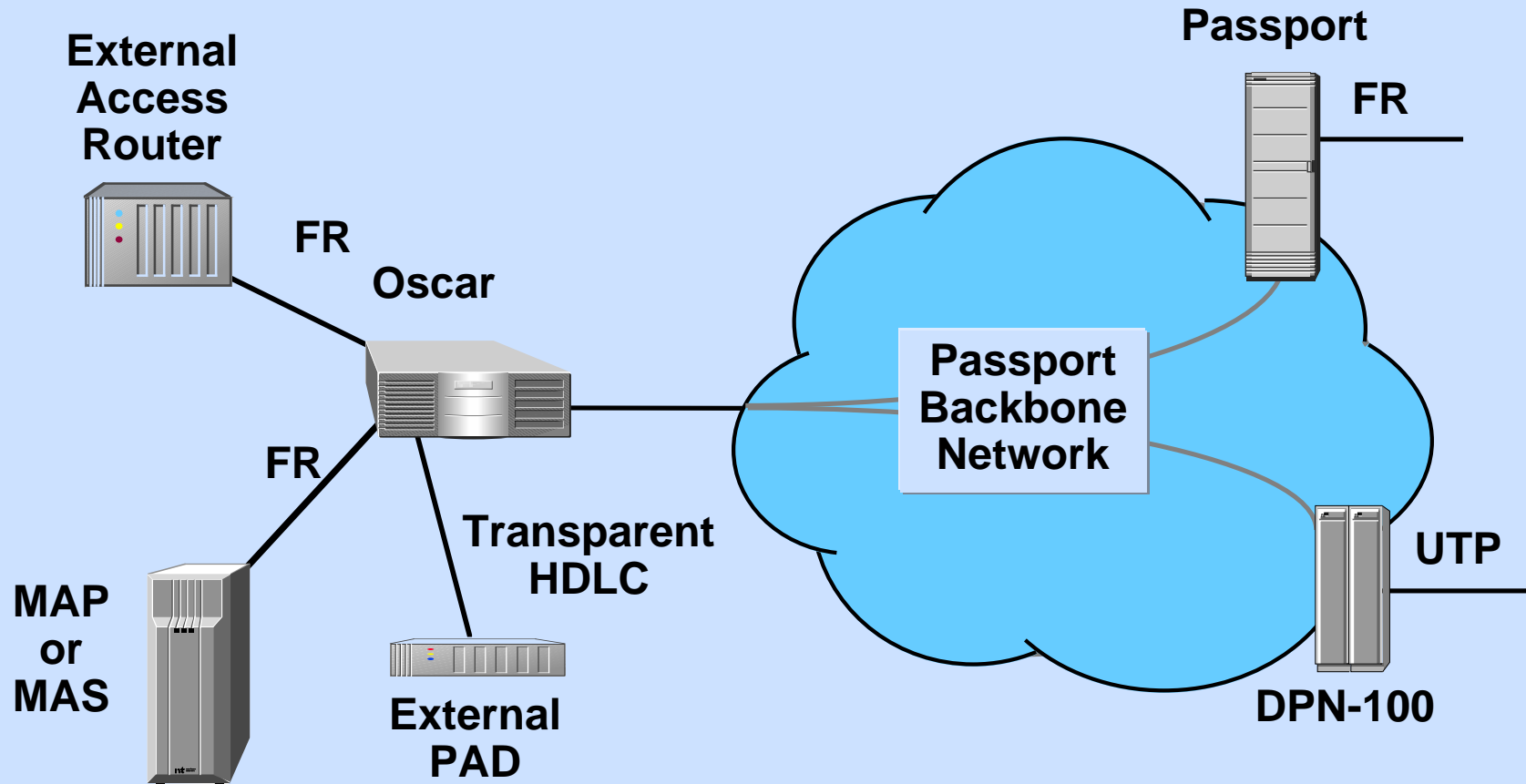
Oscar SNA Services



- SNA / LAN consolidation
- Standards-based
- No access devices at host

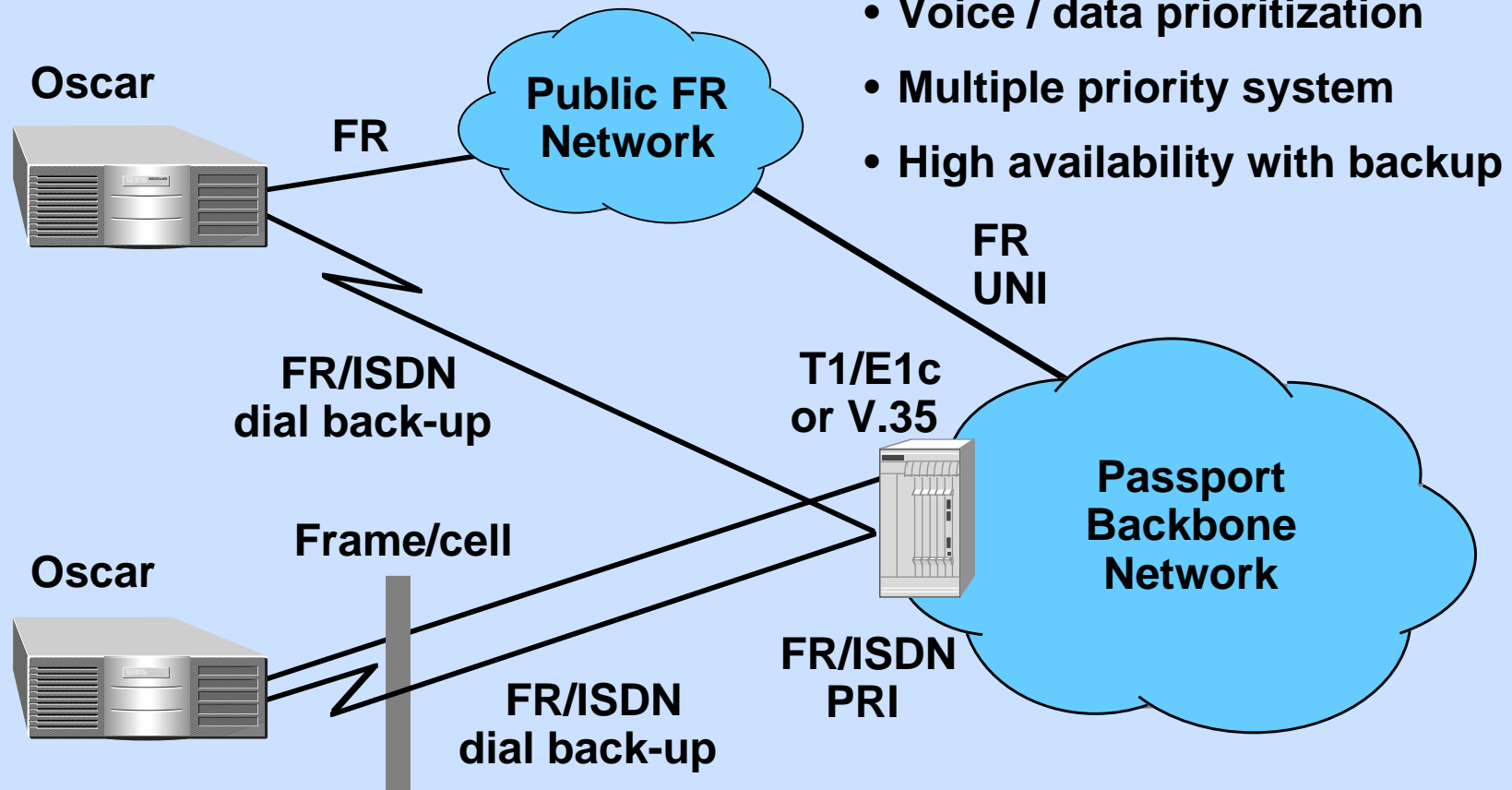
End-to-end solutions for mission critical SNA applications

Frame Relay and Transparent Data



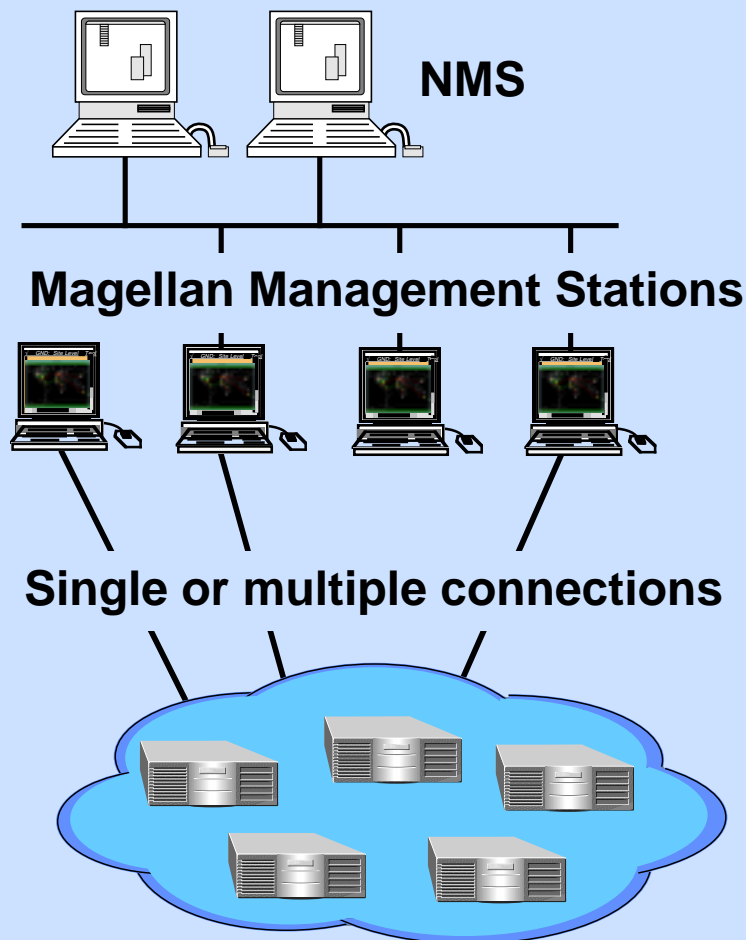
Consolidation of existing branch devices

Oscar WAN Concepts



Frame-cell for superior multimedia segmentation and delay

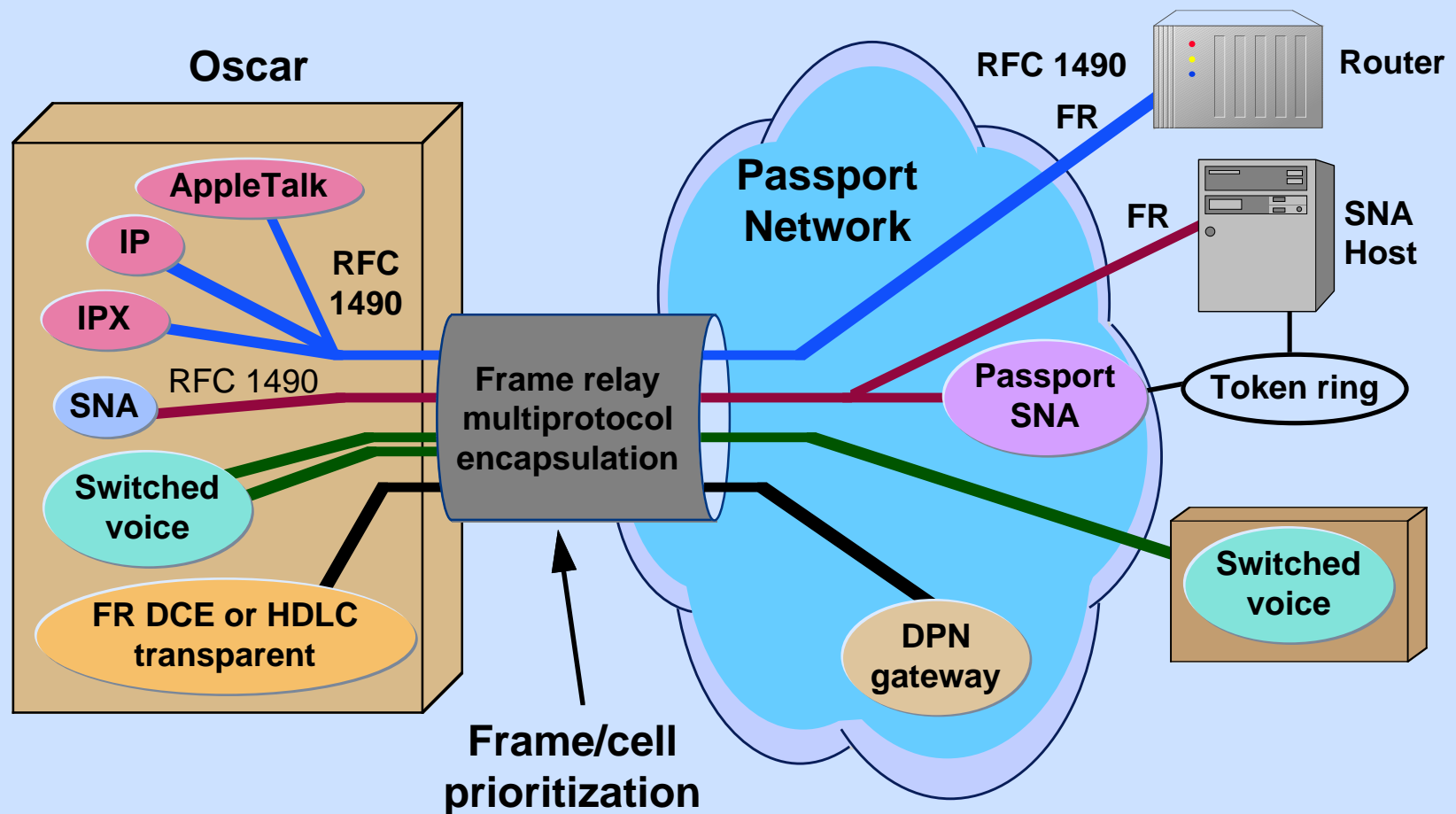
Oscar Network Management



- **Network management values**
 - scaleable to effectively manage thousands of devices
 - downloadable software and configuration
 - dual images and configuration on Oscar
 - standard SNMP management
 - integrated management of Passport, DPN-100 and Oscar
 - multi-user
 - distributed
 - high availability

Magellan NMS values extended to Oscar

Branch Service Model



Consolidation, operational simplicity, manageability

Agenda

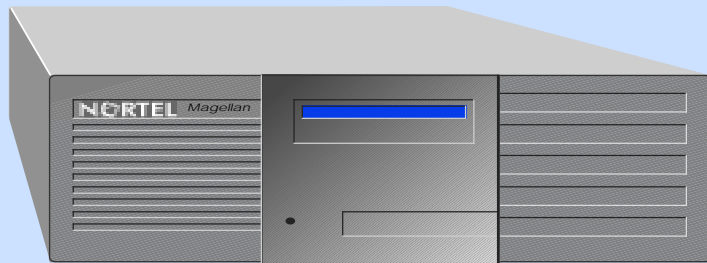
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Oscar Roll-out Plan

- **Magellan Access Integrator** now
- **Oscar (ethernet version) beta trial** 1Q97
- **General availability** 2Q97
- **Oscar (token ring) beta Trial** 2Q97
- **General availability** 3Q97

Magellan Access Integrator (MAI)

Availability 2Q96



Magellan Access Integrator

MAI provides immediate multimedia branch access for Passport networks

- **Consolidation of traffic**
- **Bandwidth savings**
- **Standards-based**
- **Proven technology**

World class product from a market leader

MAI Features

- **Analog and digital voice interfaces**
- **G.729 ACELP voice compression**
- **Fax demodulation**
- **Ethernet LAN**
- **Frame relay DCE and network link**

Oscar Summary

Oscar extends Passport values to the branch:

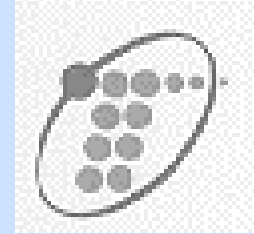
- **Consolidation of traffic**
- **Bandwidth savings**
- **Scaleable**
- **Low cost operation**
- **Integrated management**
- **Future proof architecture**

Voice, fax, video, LAN, SNA and data consolidation

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Telefónica Introduction



Ms. Rosa Bragado,

**Manager, TTD Planning
and Development**



TTD Multimedia Service
DESCRIPTION

TTD.- Planning & Development
Department

Agenda

- *Multimedia Service Definition*
- *Telefónica Data Network Infrastructure*
- *Multimedia Service Analysis*
 - *Customer Environment*
 - *1996 Solution*
 - *Voice, Data & Management Requirements*
 - *Access Mechanism Requirements*
- *Evolution to ATM*
- *Oscar platform.- TTD collaboration*

Multimedia Service.- Definition 1

The Service:

Is An Integrated Communication Service For Closed User Group Based On The Virtual Private Network Concept

The Goal:

Is to Offer Corporate Voice, Data & Video

- PABX Interconnection*
- LAN Interconnection*
- FR*
- Legacy Data*
- Video*

Multimedia Service.- Definition 2

The Network:

Multimedia Network based on a proprietary ATM solution moving towards standard ATM

Integration Element:

Single Integration Element As A Customer Premises Equipment

Telefónica Data Network Infrastructure.-1

- ***TESYS (Basic Service)***

(Telefónica Technology)

- *Ports: 51.199*

- *Customers: 3500*

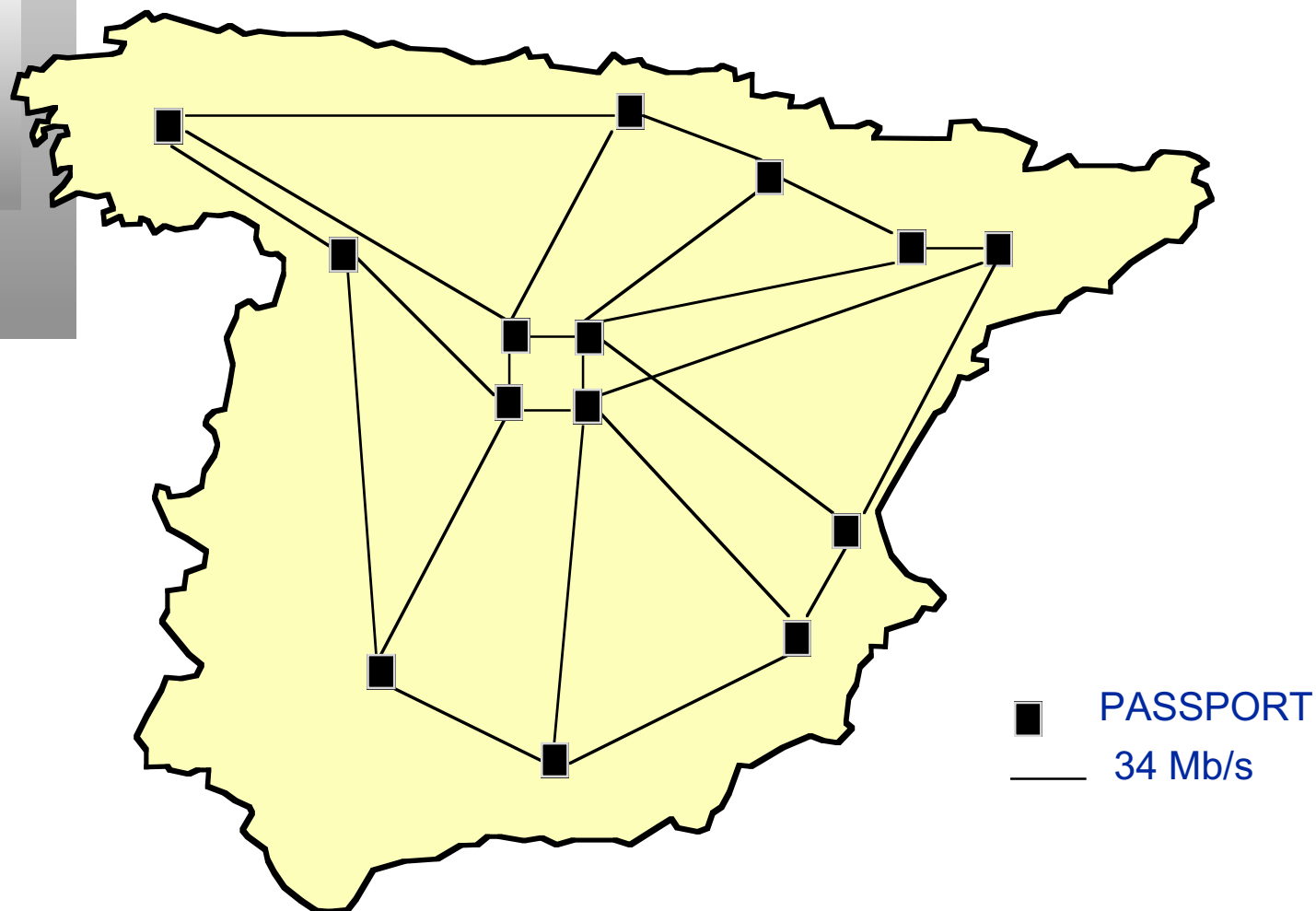
- ***RED UNO (Large Customers Service)***

(Nortel Magellan Technology)

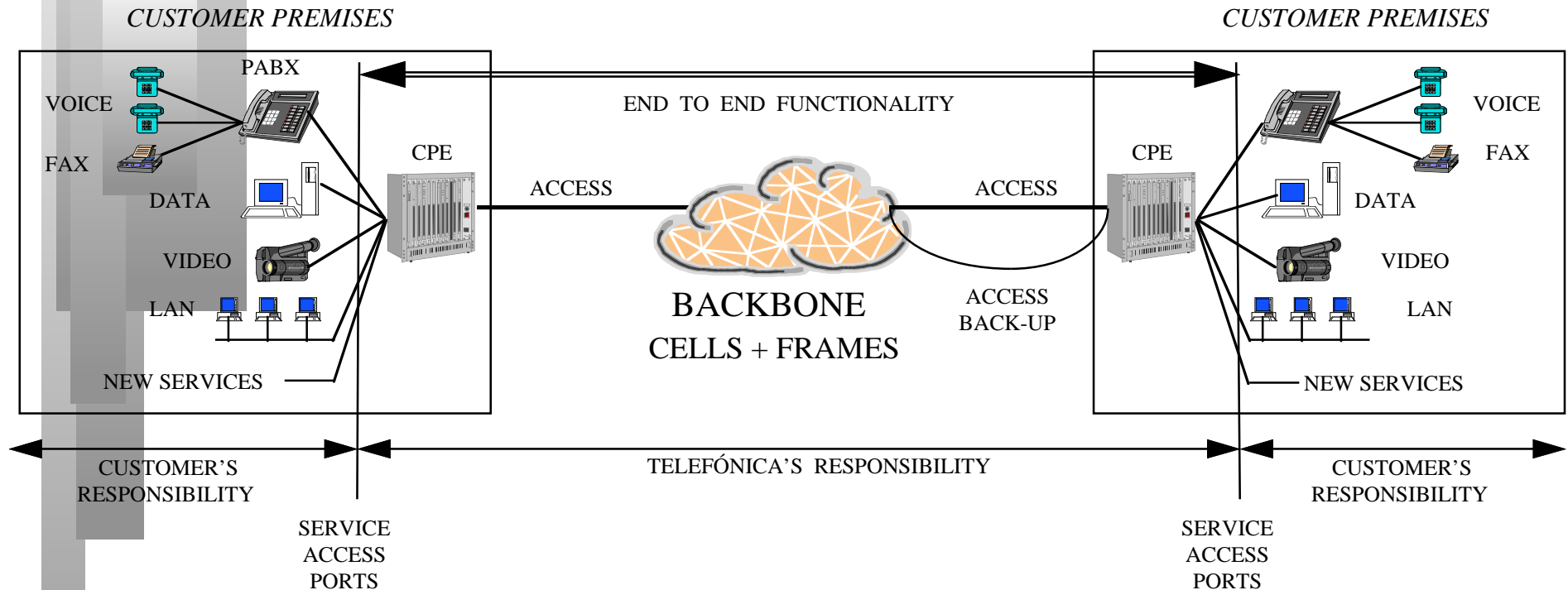
- *Ports: 33.143 (930 FR)*

- *Customers: 300*

Telefónica Data Network Infrastructure.-2



Multimedia Service Analysis



- SINGLE ACCESS TO A BACKBONE NETWORK
- TOTAL BANDWIDTH MANAGEMENT
- PERMANENT MONITORING
- MAINTENANCE

Customer Analysis.- Customer Size

SMALL CUSTOMERS:

- Branches with homogeneous interconnection (**mesh connection**)
- Central Site & Remote Branches (**Star connection**)

LARGE CUSTOMERS:

- Hierarchical interconnection

Customer Analysis.-Branch size

- *SMALL/MEDIUM SITES.-*

Low Bandwidth Requirements

(From 64 Kbps to 512 Kbps)

Inhomogeneous

(Different Functional Requirements)

- *BIG SITES.-*

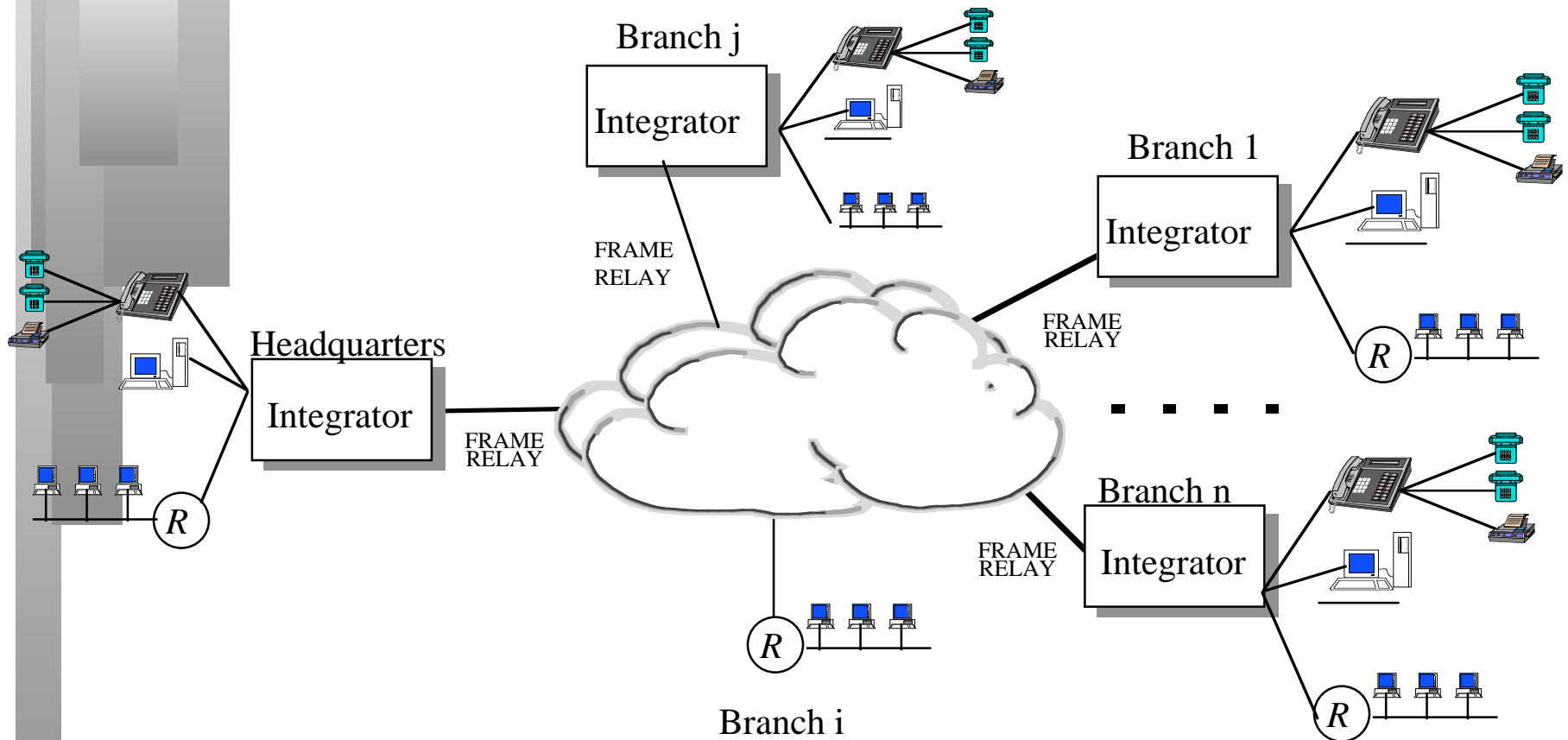
High Bandwidth Requirements

(From 512 Kbps to 34 Mbps)

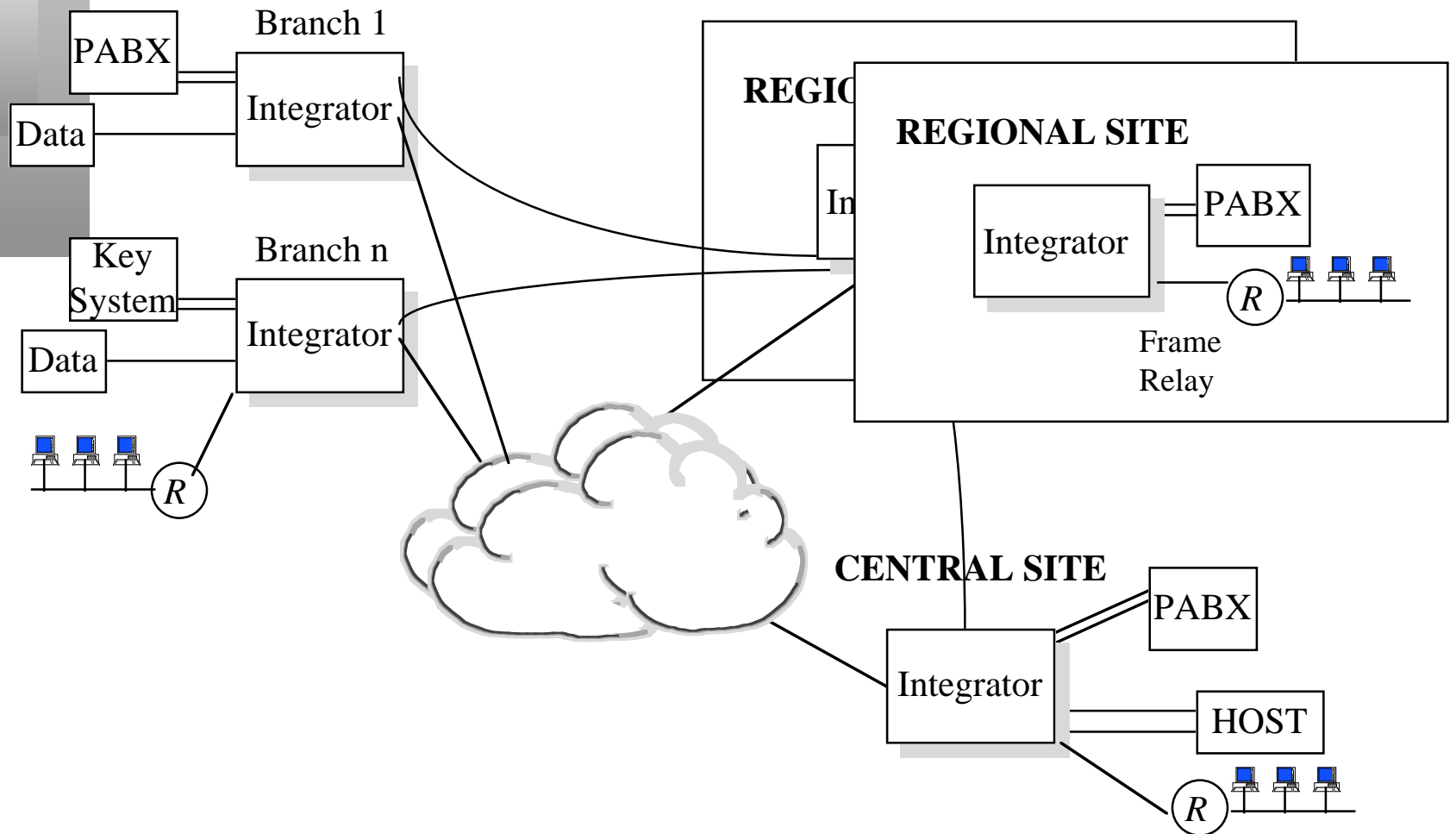
Homogeneous

(Similar Functional Requirements)

Customer Scenario.-Small/Medium Customer

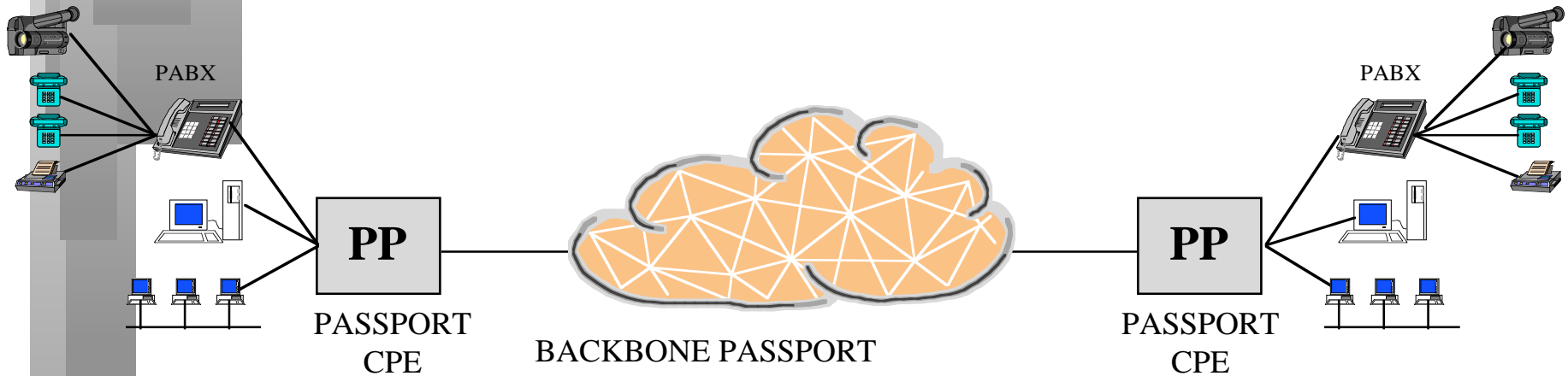


Customer Scenario.-Large Customer



1996 Solution.- Large Customers Main Offices

- DIGITAL PABX.
- LARGE DATA ENVIRONMENT.



PASSPORT DEPLOYMENT IN CUSTOMER PREMISES:

- HIGH PERFORMANCE.
- IMPROVED FUNCTIONALITY.
- NATIVE ATM (CLOSE FUTURE).

Voice Requirements

Voice Switching: *Backbone network acting as a
Virtual Tandem PBX*

Signalling: *Digital CCS (Q.SIG, ISDN)
CAS*

Analog E&M, FXS, FXO

Interconnection Types:

Digital-Digital

Analog-Digital

Analog-Analog

Unique Numbering Plan

Voice Compression

Data Requirements

- TRANSPORT SYNCHRONOUS &
ASYNCHRONOUS PROTOCOLS
- FRAME RELAY PVC & SVC
- LAN INTERFACES

Management Requirements

MANAGEMENT SYSTEM FOR THE INTEGRATOR EQUIPMENT

Same As for Other Magellan Equipments (NMS)

Data Collection Management: Accounting & Statistics

VPN MANAGEMENT

The Customer Should be able to Manage The Multimedia Service via the ServiceMonitor

Access Mechanism

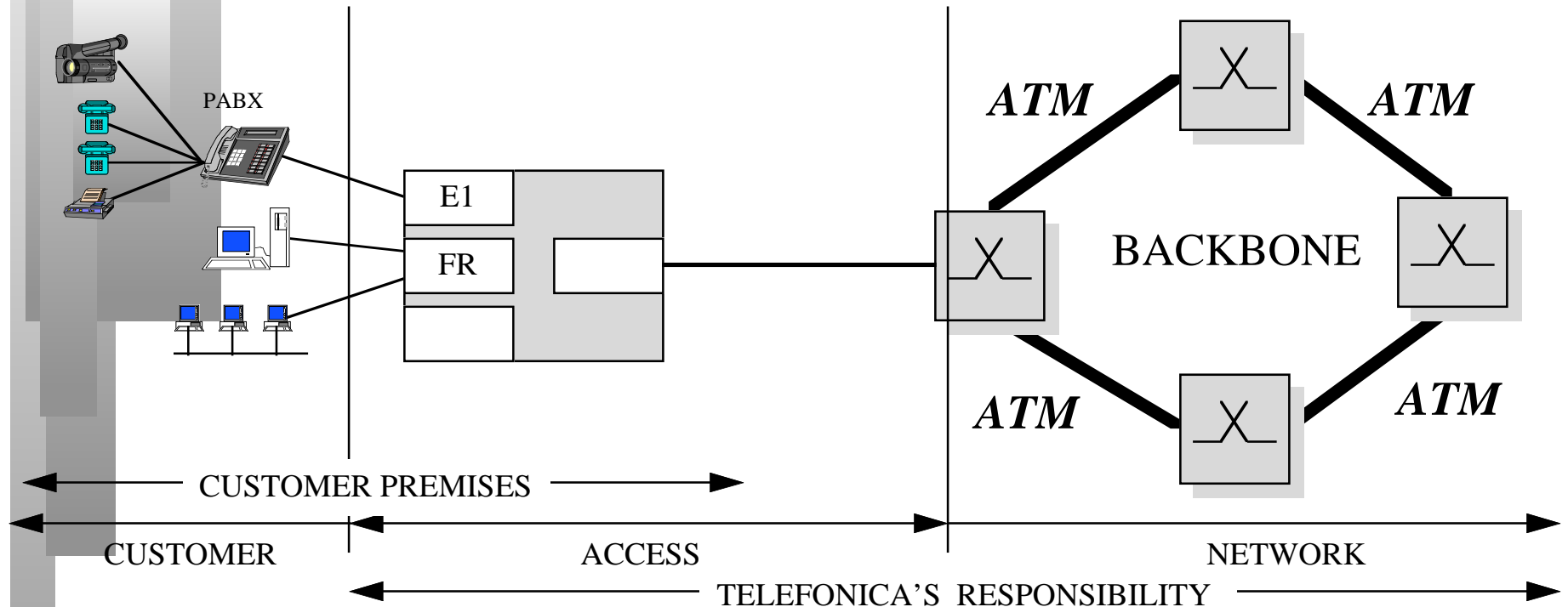
Alternatives

- *End to End Leased Lines*
- *Public Network Access Line*
- *ISDN main connection*

Added Functionality

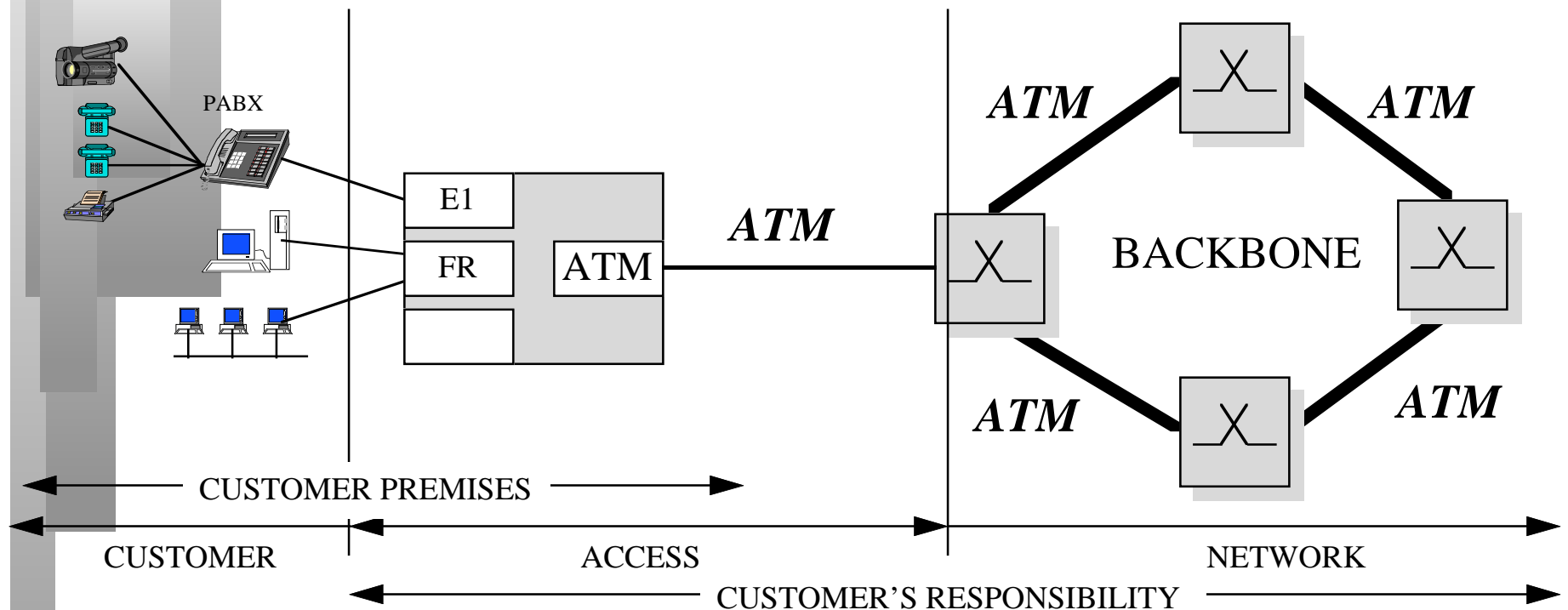
- *ISDN Backup*
- *Bandwidth on demand as a complement
for any of the possible access types*

Evolution to ATM: Phase I.- ATM Backbone



- *NO CPE CHANGES.*
- *IMPROVED PERFORMANCE.*
- *LARGER ECONOMIES OF SCALE.*

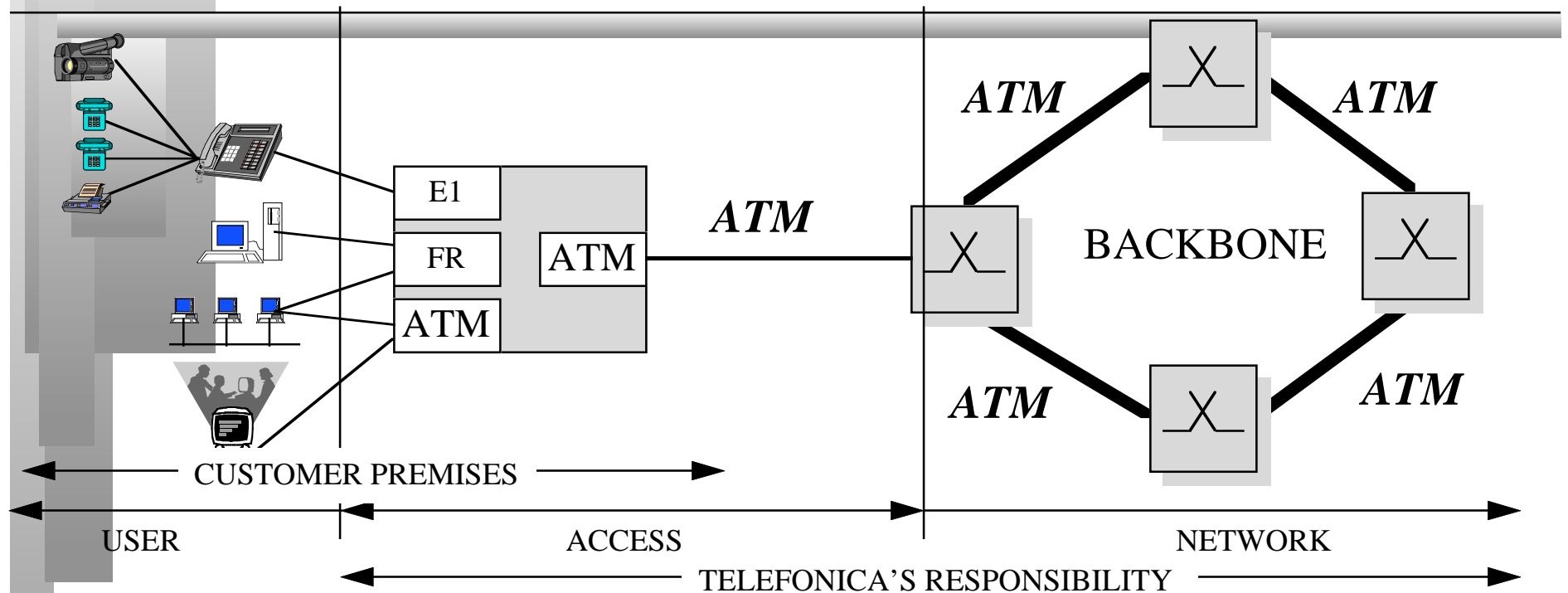
Evolution to ATM: Phase II- ATM Access



- *ADDITIONAL CARD IN CPE.*
- *HIGHER ACCESS EFFICIENCY.*

Evolution to ATM:

Phase III- ATM to the Desktop



- *ADDITIONAL CARD IN CPE.*
- *FRAME RELAY IS THE PREFERRED ACCESS BELOW 2 MBPS.*
- *CELL RELAY SERVICE.*
- *ATM LAN EMULATION*

Oscar Platform.- TTD Collaboration

- *Requirements Definition*
- *Trials participation*
- *Workshop/Meeting*
- *Feedback*