Ascend

Navis
Network Management
for
New Public Network
Service Delivery

ASCEND

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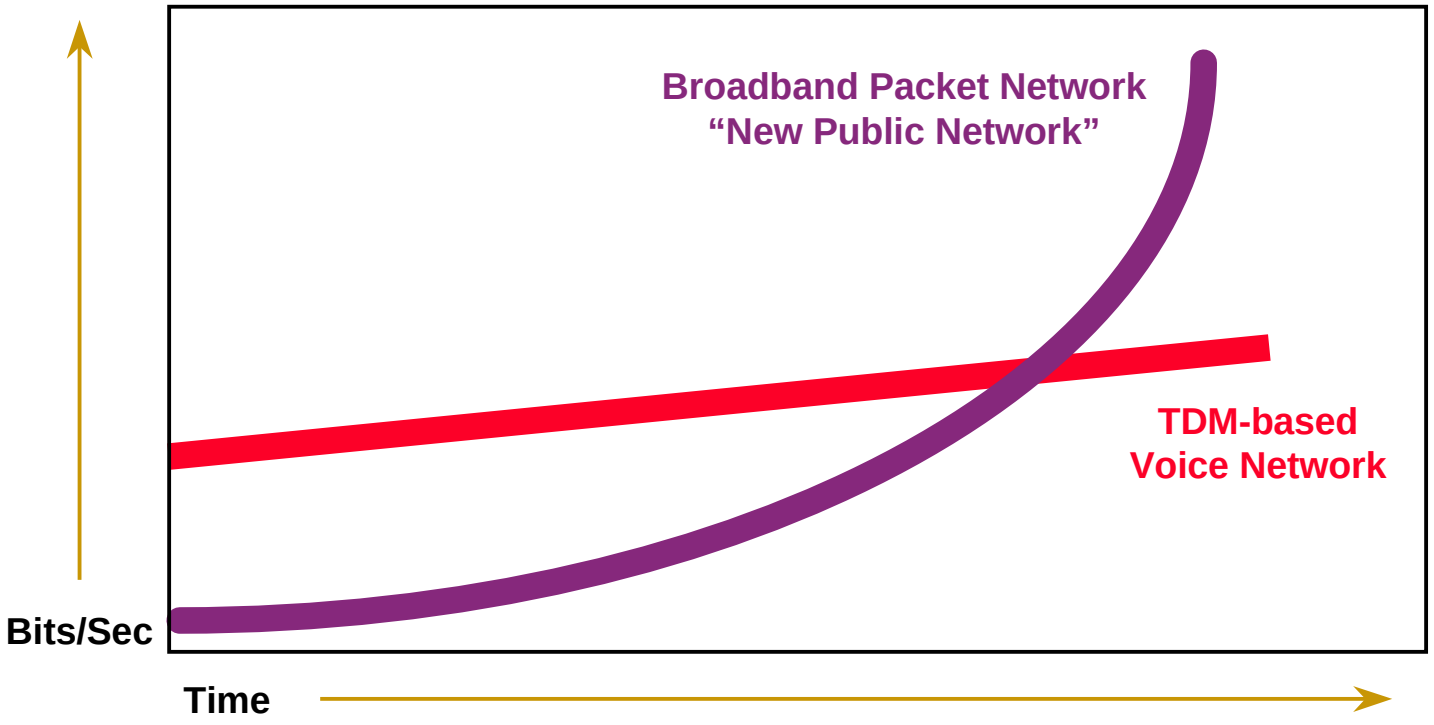
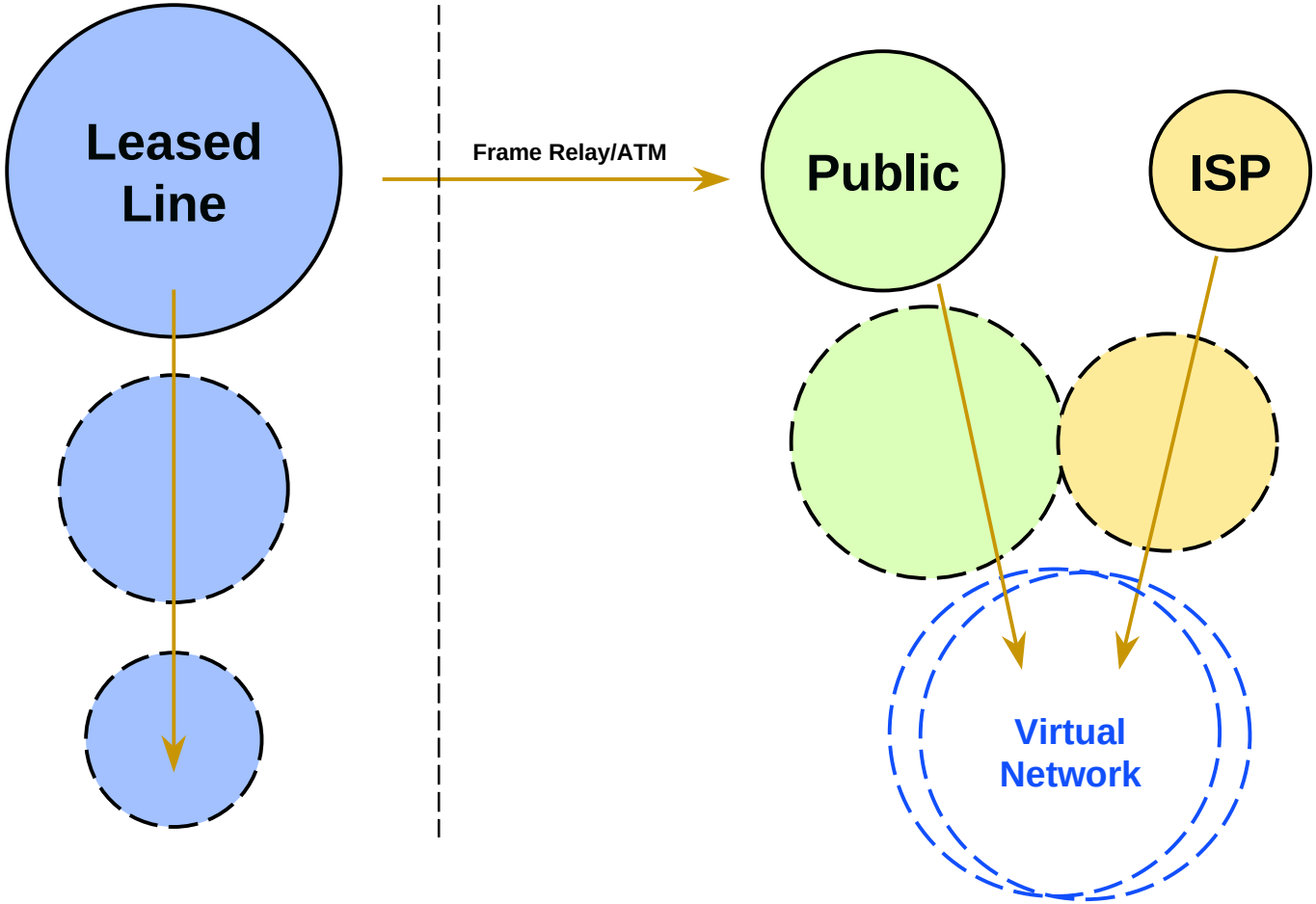
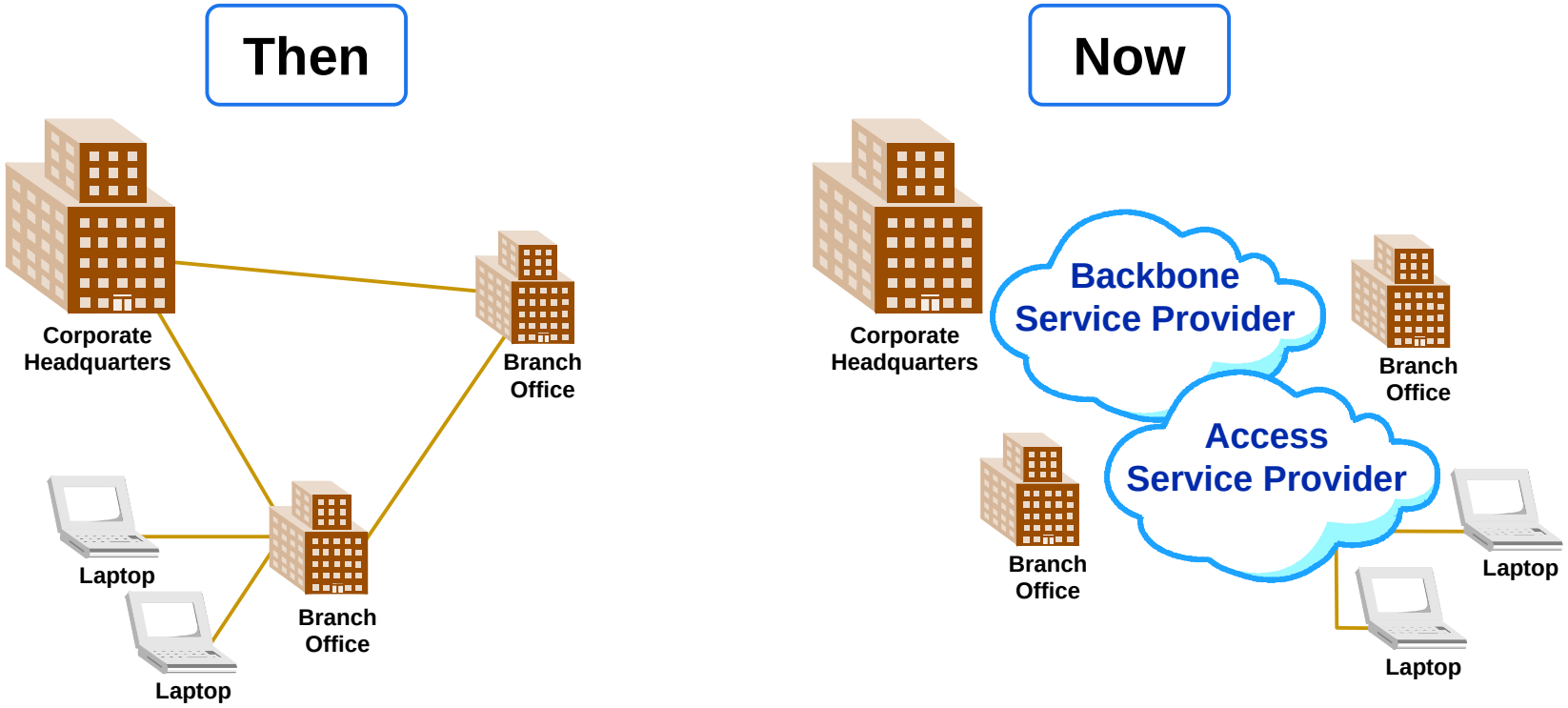
The New Public Network



Evolution of Wide Area Nets



Migration to Public Networks



Many forces are driving the shift to public networks:

- Only service providers can afford the large infrastructure and operations management investments
- Public networks provide universal access, worldwide
- Enterprises want to focus on core competencies

The New Public Network Benefits the Enterprise

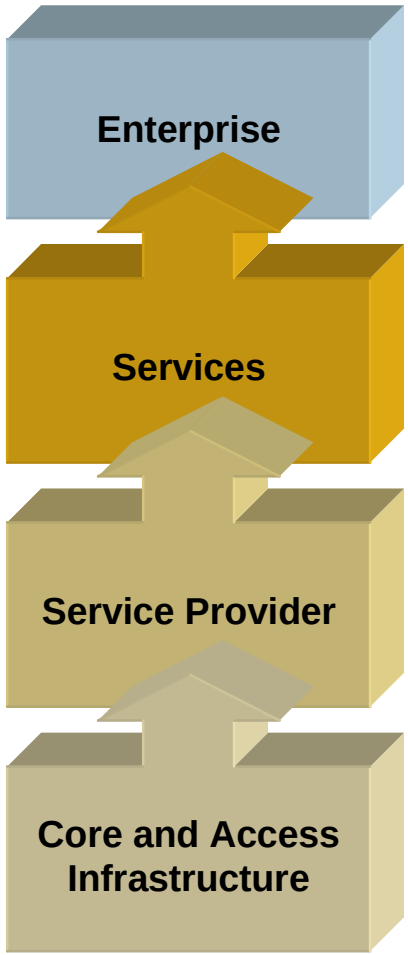
- **Offers ubiquitous access via dial or virtual leased lines**
- **Delivers flexible and low-cost bandwidth**
- **Integrates multimedia traffic: data, voice, video**
- **Secures traffic transport and management access**
- **Delivers extreme reliability with predictable and consistent Quality of Service (QoS)**

Enterprises will employ network data delivery if:

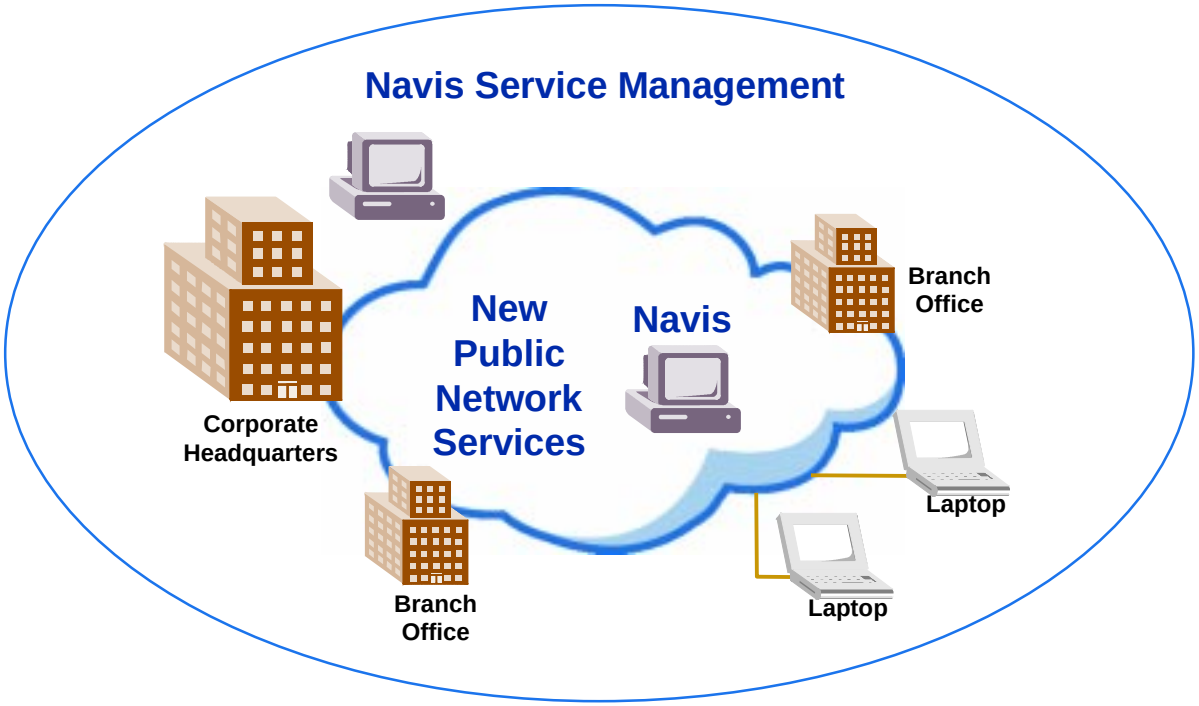
- A service portfolio is offered that addresses their traffic profiles, business operations and cost points
- MIS managers can maintain a degree of control
- Traffic and management access are secure

The New Public Network Challenges the Service Providers

- **Increased service provider competition**
- **Providers moving to service differentiation:**
  - New services with varied price levels to meet different markets: VPNs, classes of quality, customer network management, multimedia delivery, bandwidth on demand
  - Underlying technologies become enablers: dial, xDSL, Frame Relay, ATM, IP, SONET
  - Services may be provided to enterprises via traditional carriers or new carriers
- **Service providers need to share network information: 24-hour, cost-effective, secure access**
- **The services must scale**
- **Value-added service offerings that generate profitable revenue**

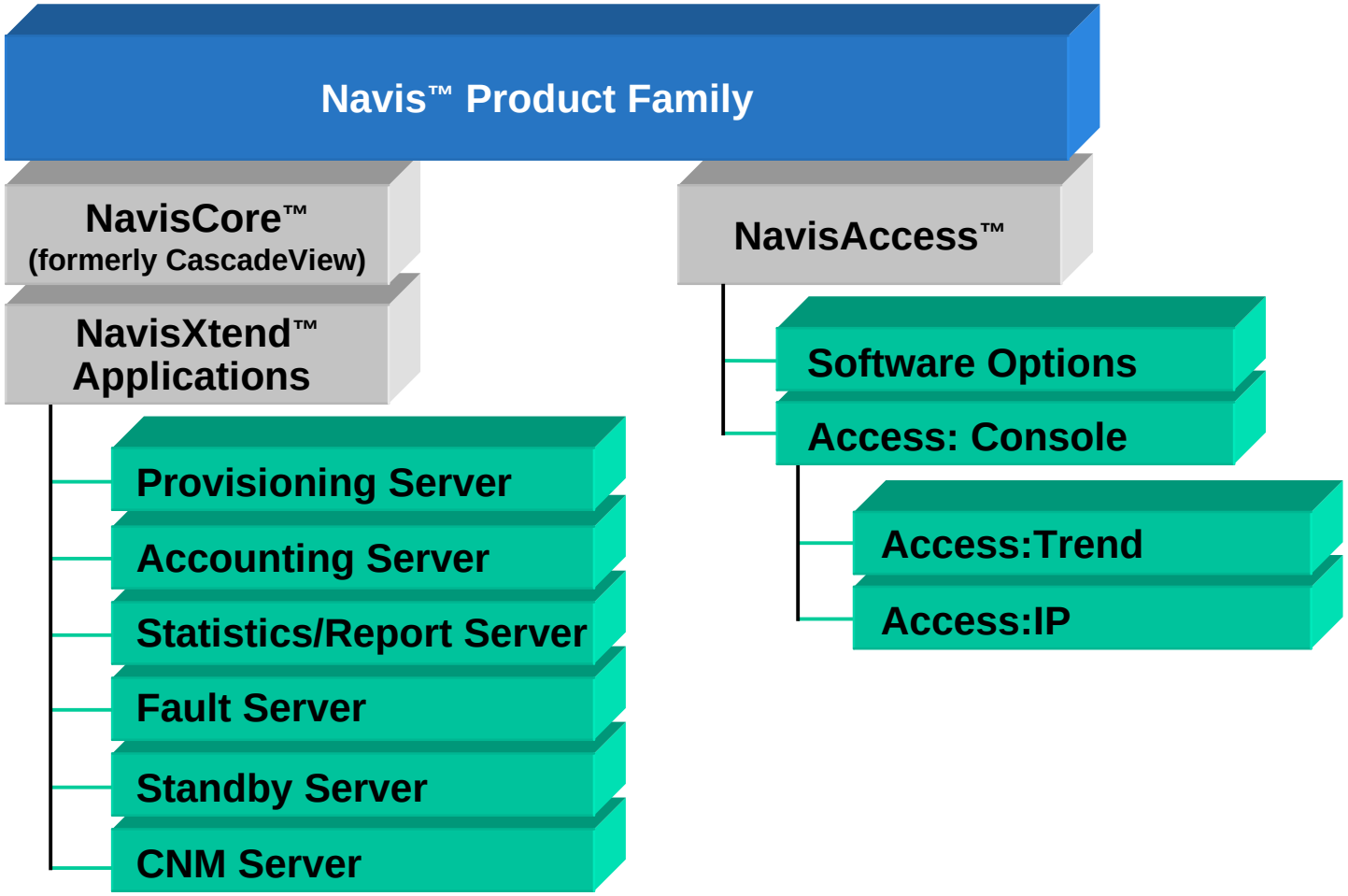


Service Management Defines the Winners

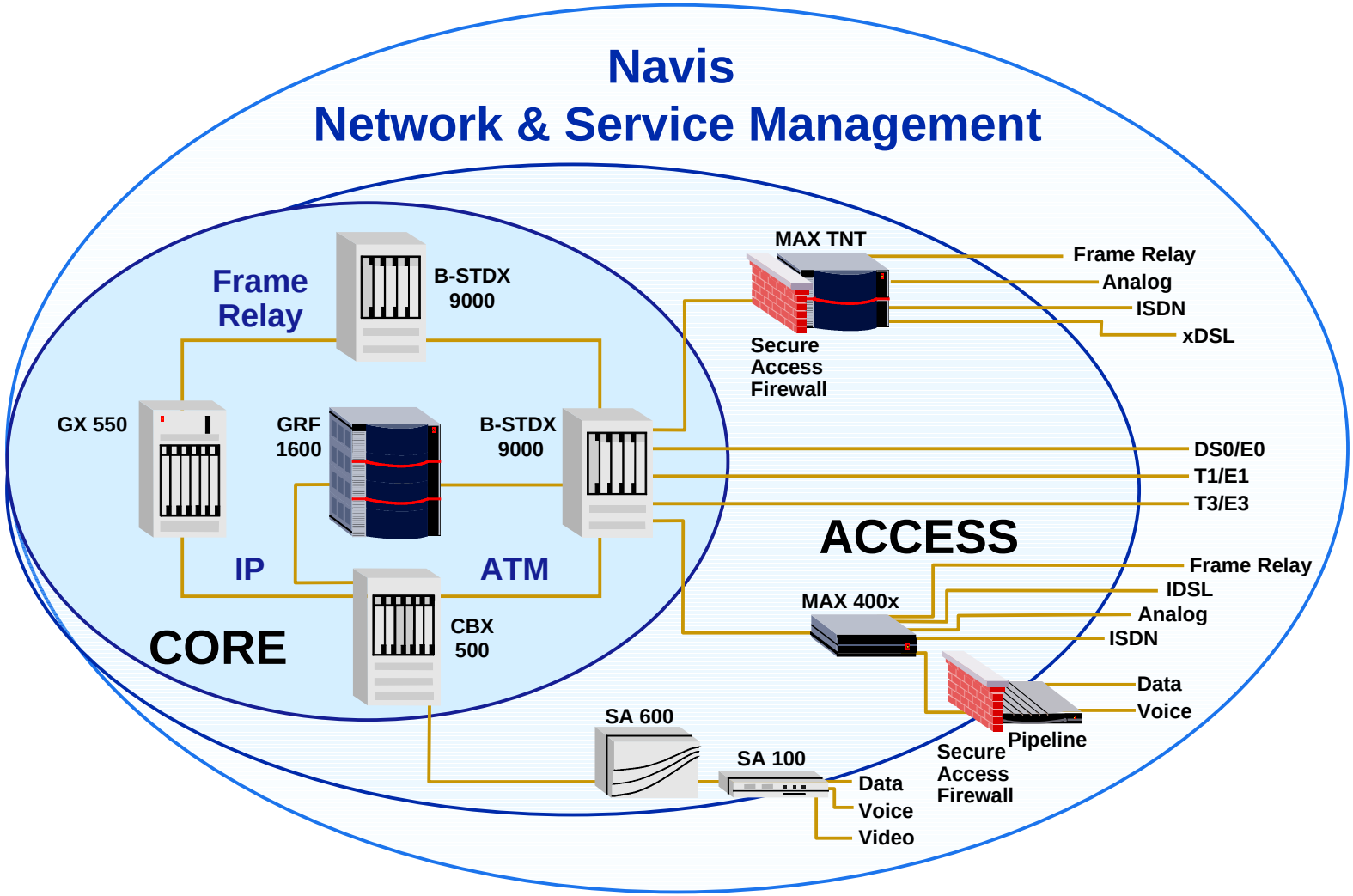


- Service providers must deploy value-added services quickly and profitably
- Enterprises must have private control over the services
- Ascend's Navis architecture delivers service management

Navis Service Management Family



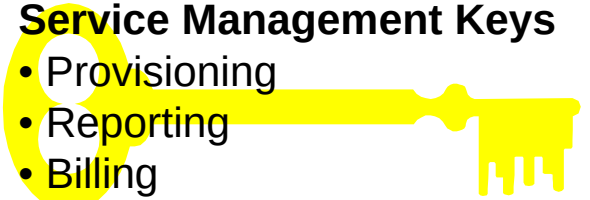
Integrated Services Management



Delivering the NPN: New Service Offerings

- **Navis Service Management enables the service provider to deploy new services, such as:**
  - Priority services: dial and transport
  - Virtual private networks, including tunneling and WAN capacity
  - Flexible bandwidth
  - Managed, secure connections
- **Navis Service Management enables the service provider to deliver wholesaling of dial ports and WAN capacity to other service providers**
- **Navis Service Management enables service deployment: CNM, scaling, end-to-end control, cost-effective operations**

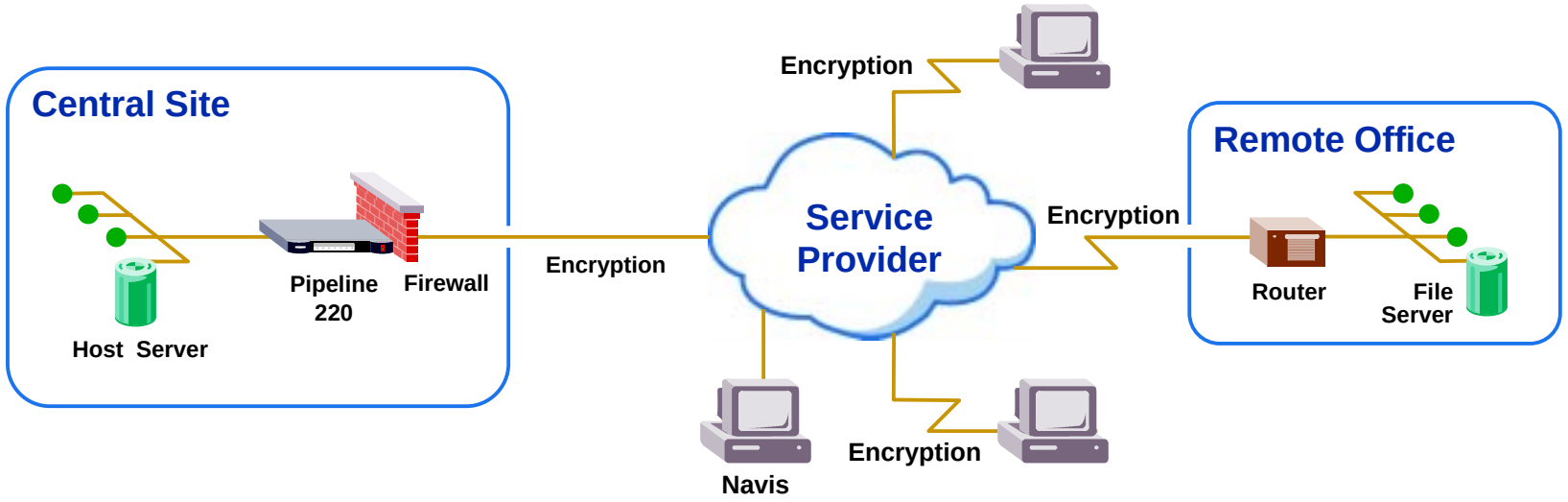
Navis Delivers New Service Management Keys



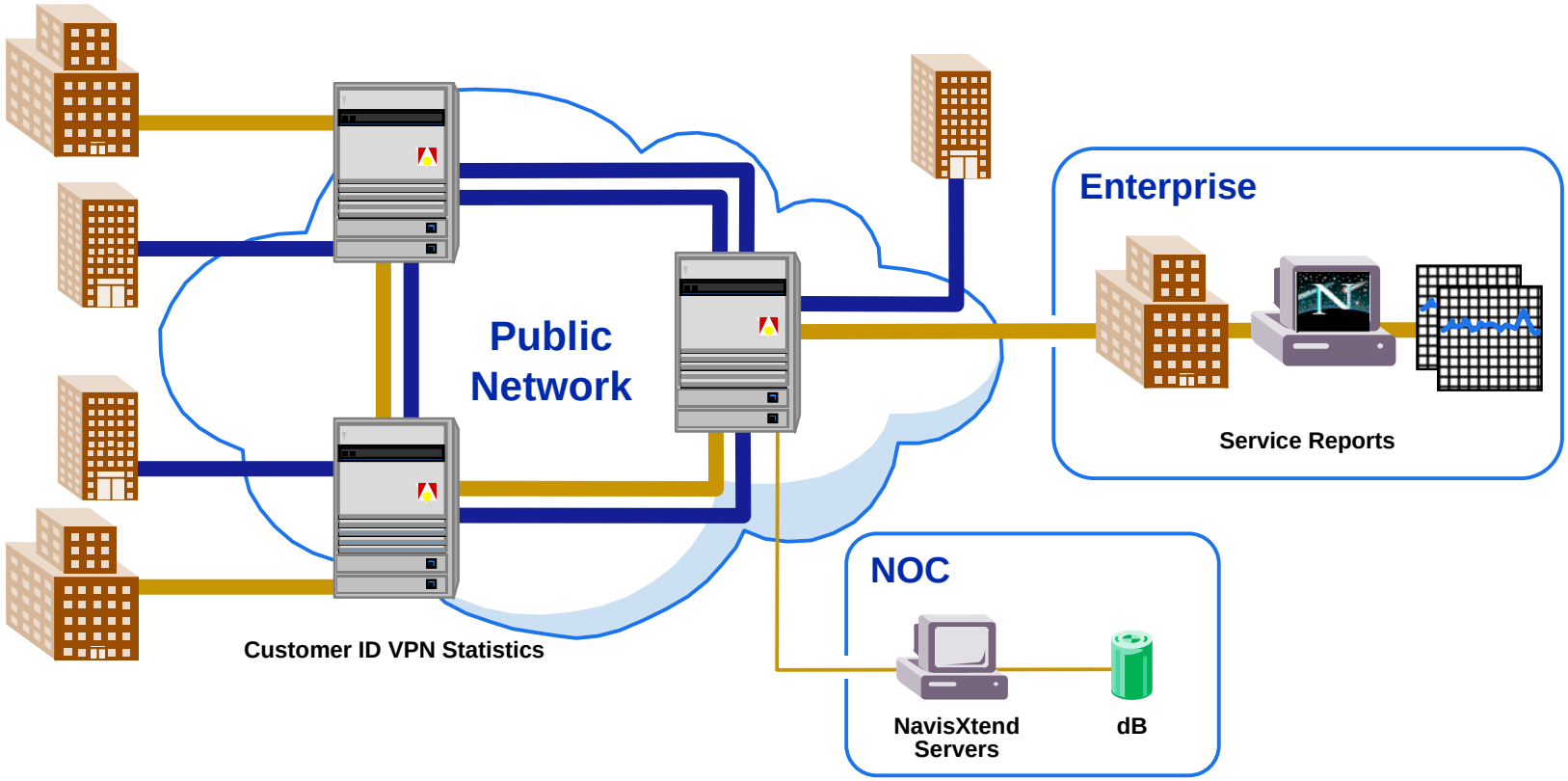
- Provisioning
- Reporting
- Billing
- Security

Navis Delivers:
VPN Tunneling Services

- **Secure connections**
  - IPSec
- **Provisioning via RADIUS**
  - Point-and-click configuration with Navis
  - Visualize tunnels through the network
- **Performance, fault monitoring and trending**
- **Service related billing**

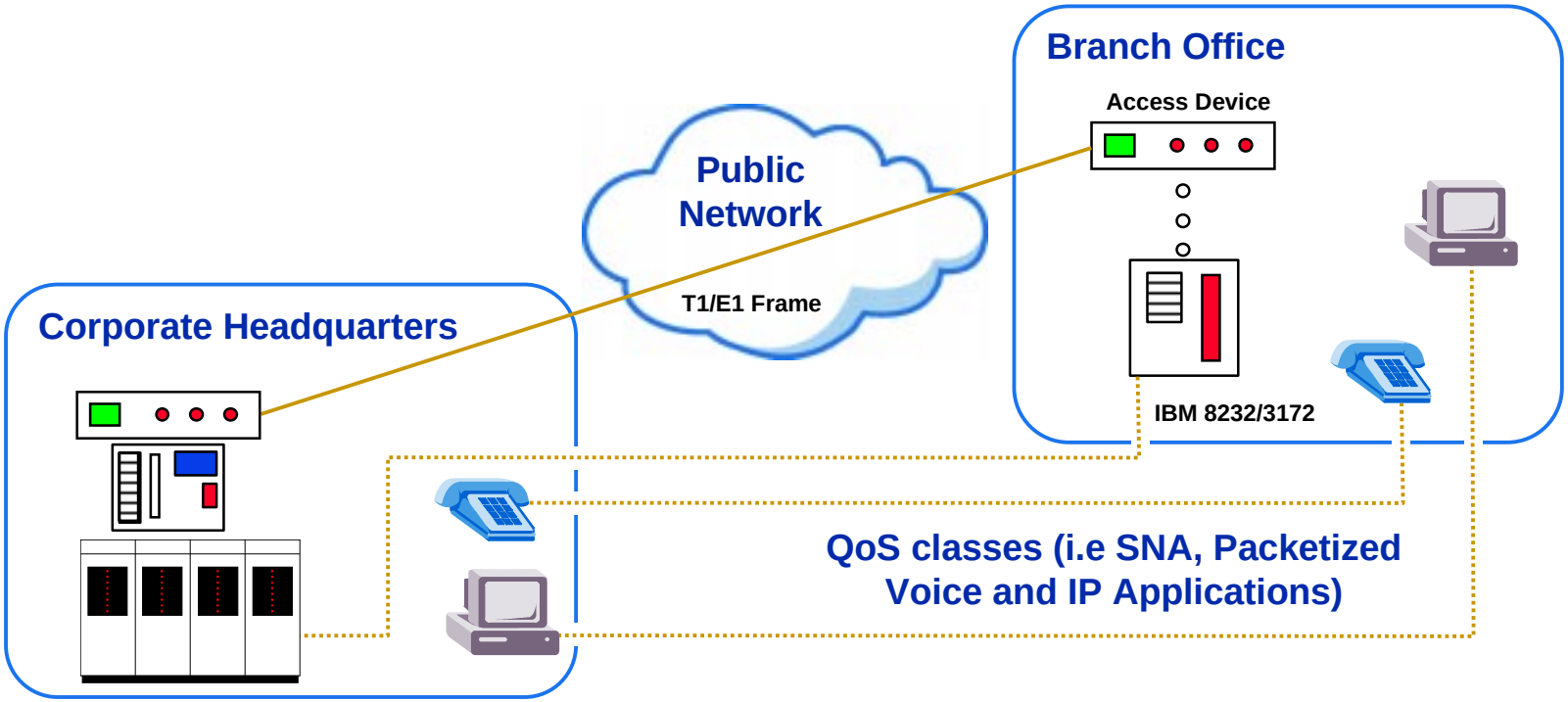


Navis Delivers: VPN WANs



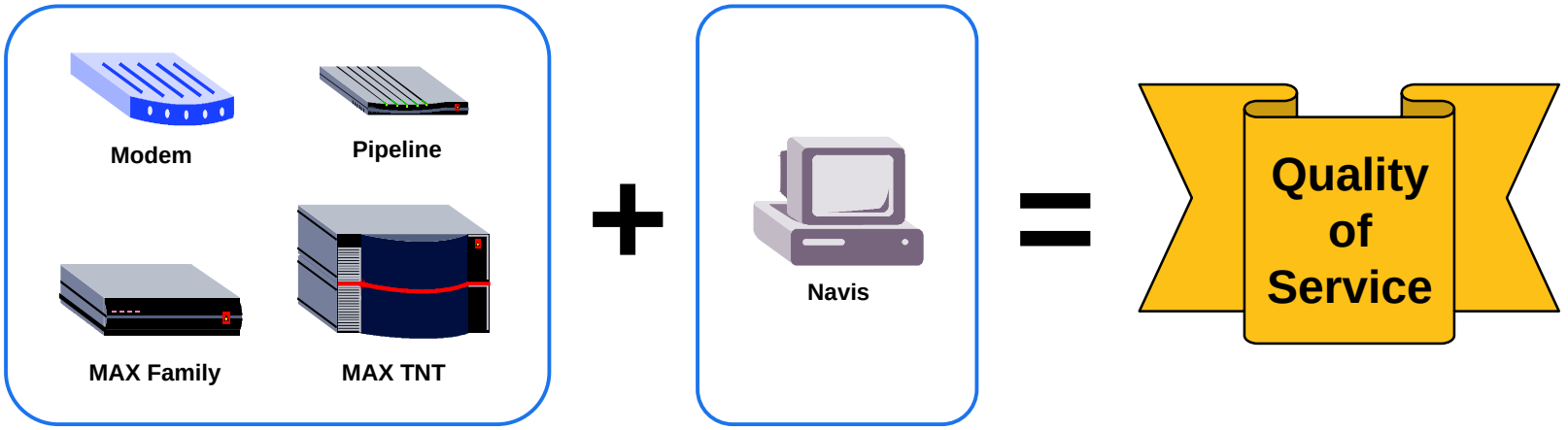
- Private WANs over the public network
- Provisioning monitoring, accounting via VPN and customer ID – access, reports and bills to customers
- QoS control: security, priority re-route, SLA

Navis Delivers: Classes of WAN Service



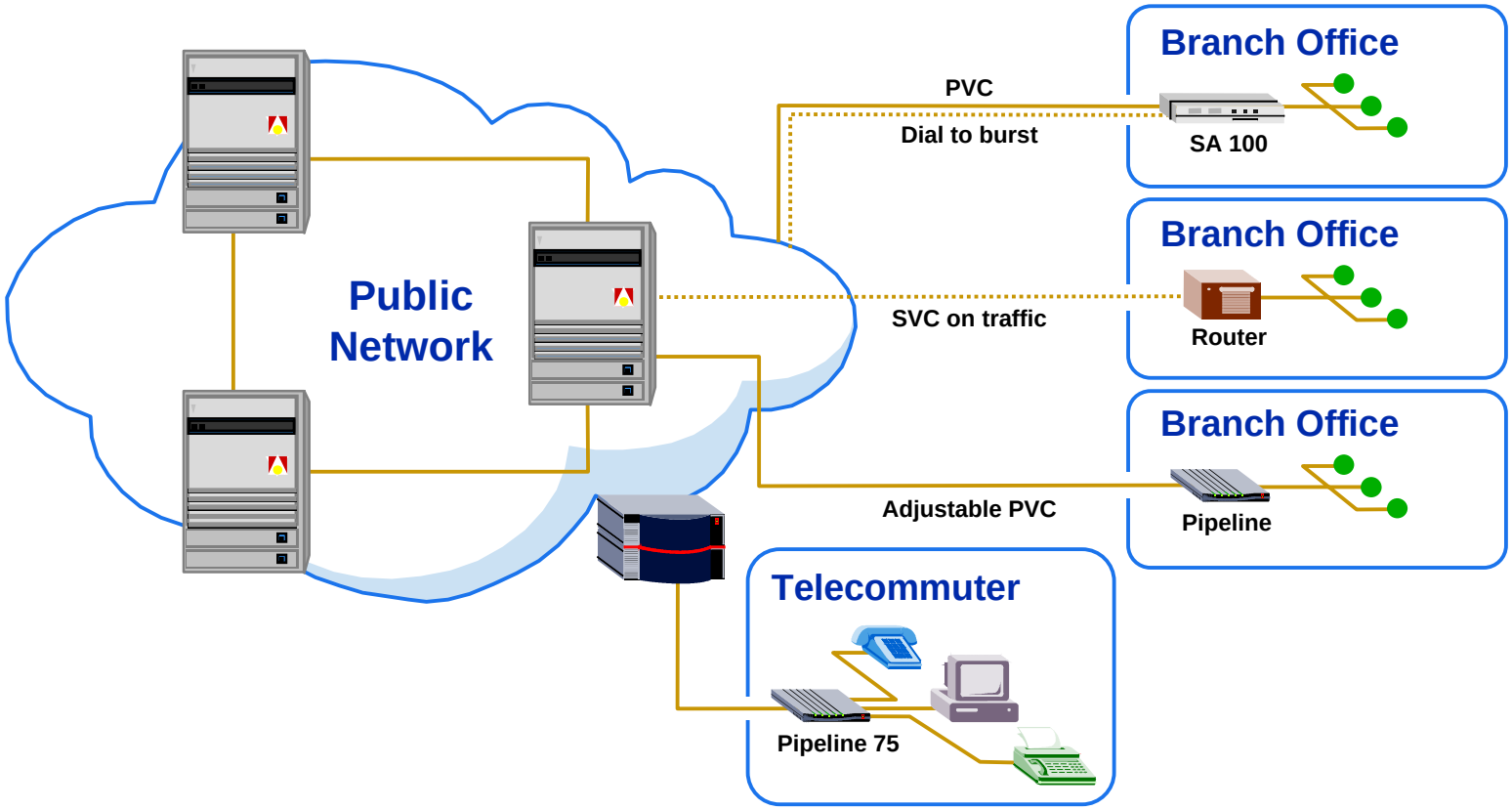
- Classes of services based on throughput, traffic type, availability, etc. for Frame Relay, ATM and IP to meet different market segments
- Provisioning, monitoring and accounting via Navis

Navis Delivers: Classes of Dial Service



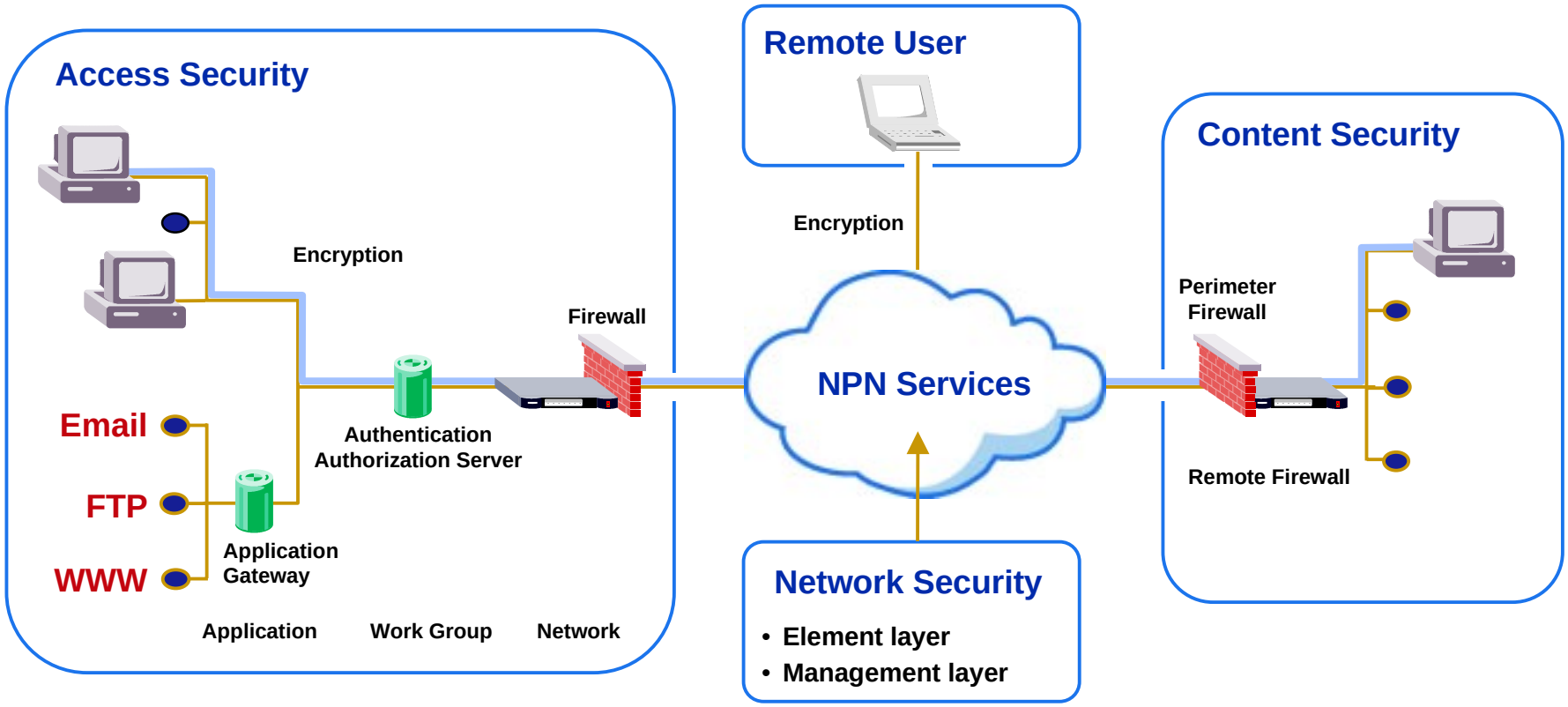
- **Services**
  - Analog (9.6k-33.6k)
  - High-speed analog 56K
  - ISDN 64K/128K
  - xDSL
  - Frame Relay
  - Guaranteed answer
  - Low latency
  - Unlimited access
- **Navis delivers QoS**
  - Provisioning
  - Security
  - Real-time performance monitoring
  - Historical trending information
  - Events, fault monitoring
  - Service related views
    - Distributed workgroup
    - CNM for client verification

Navis Delivers: Flexible Bandwidth



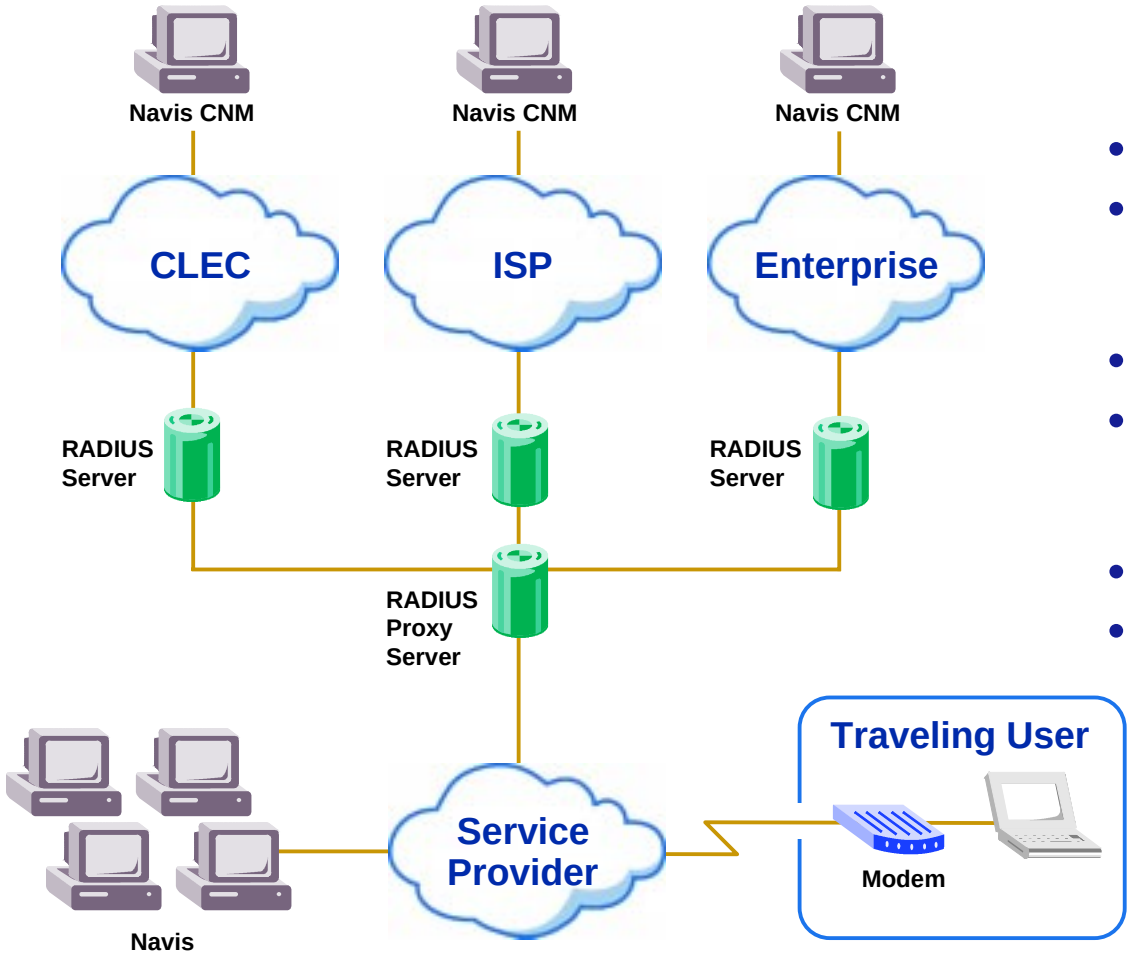
- Bandwidth as the enterprise needs it: dial, PVC, SVC
- Provisioned as a service offering
- Billing for PVCs and SVCs

Navis Delivers: Managed Secure Connections



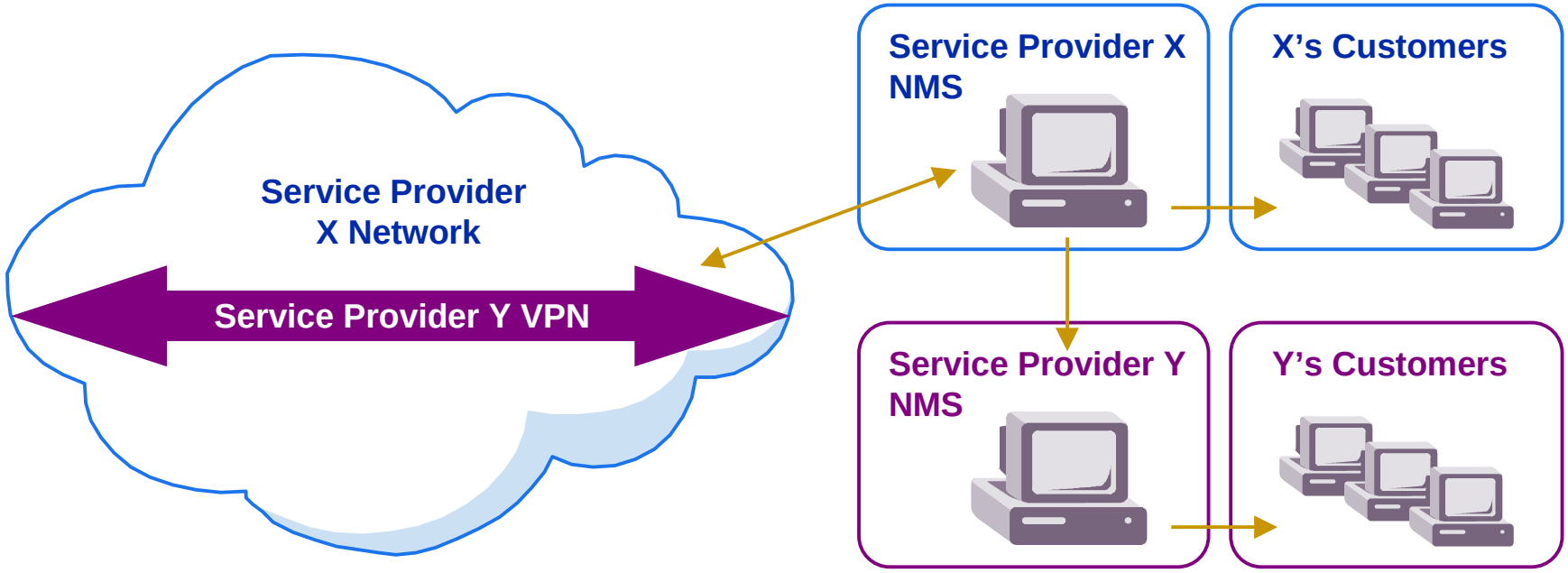
- Security as a new service offering
- Managed via Navis: configure, monitor, reports
- Secure data transport and management access

Navis Delivers: Access Port Wholesaling



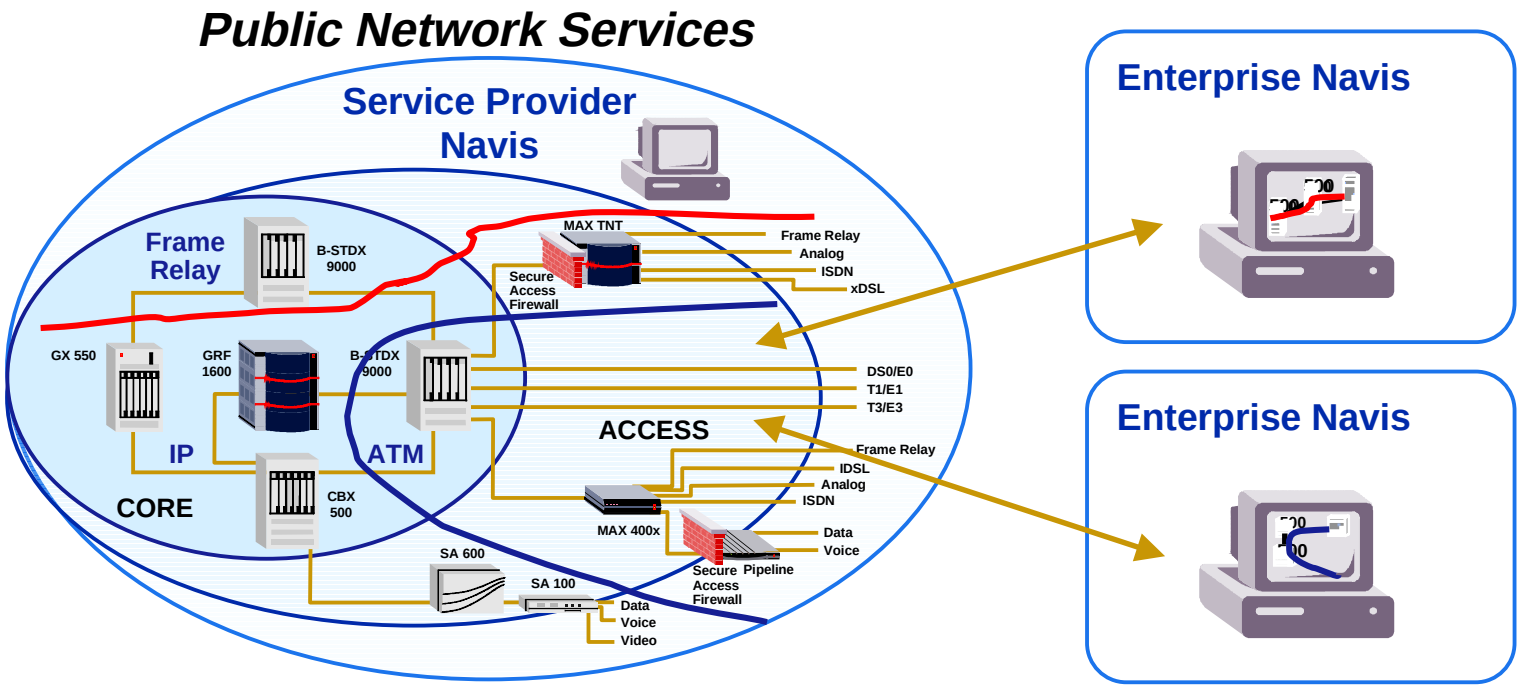
- **Provisioning**
  - Via RADIUS
  - Multiple QoS on ports
- **Security**
- **Service monitoring**
  - Client verifies services via Navis CNM
- **Billing**
- **Performance**
  - Real-time and historical
- **Fault monitoring**
- **Transparent to users**

Navis Delivers: Capacity Wholesaling



- Partition capacity into customer VPNs with QoS
- Provisioned, monitored and billed via Navis
- Secure at switch, application and access levels
- CNM control for tiers of customers

Delivering the NPN: Private Control



- **CNM information to the enterprise**
  - Real-time service views vs. SLA contract
  - Historical trending for capacity planning
- **Secure access**
  - Detailed level on CNM control: by end user, tasks, information
  - IPSec, SSL, encryption, permission control, firewalls
- **Cost-effective Java standards**

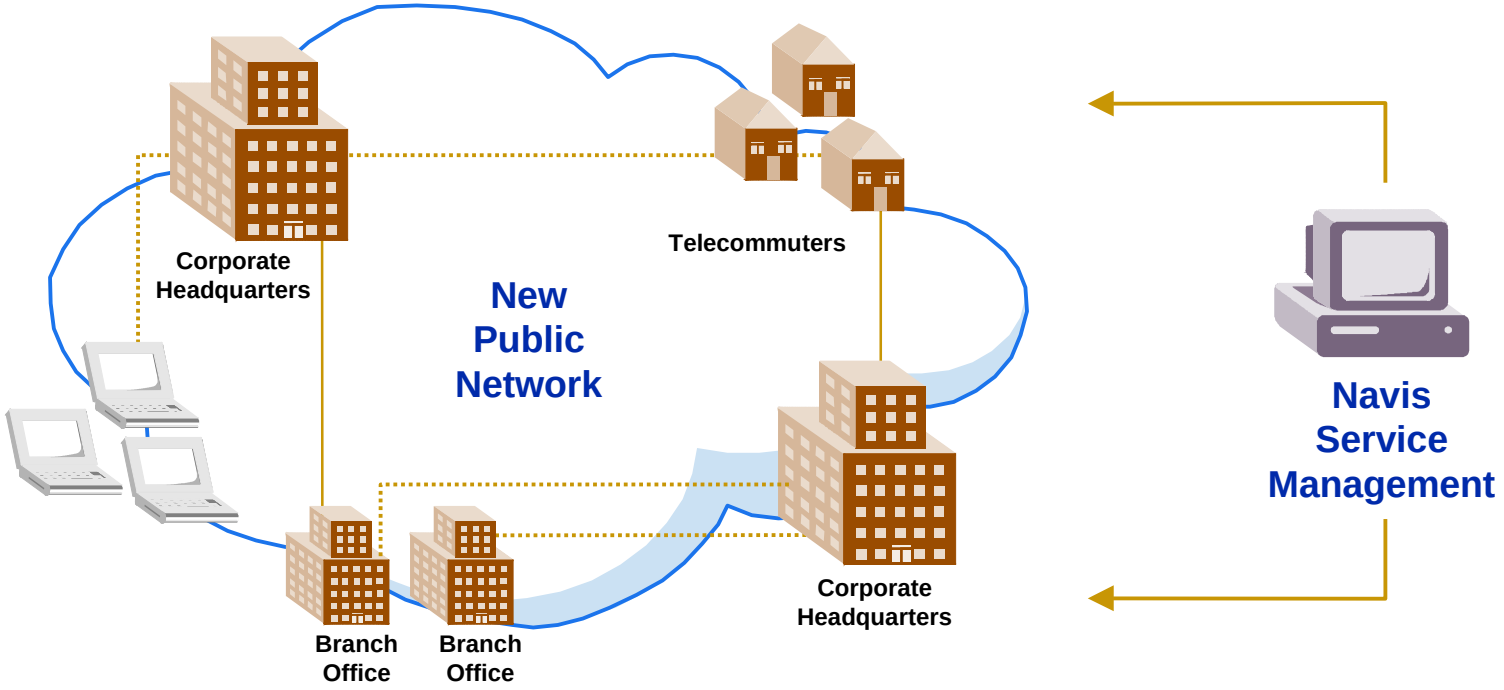
Delivering the NPN: Profitable Service Delivery

- **Automate management tasks to reduce overhead**
  - Provision circuits in 15-20 seconds (vs. 15-20 minutes)
  - Proactive response to limit SLA paybacks
- **Speed response times to reduce network downtime**
  - View aggregate data for an N to 1 reduction in information load
  - Correlation of events reduces alarm information tenfold
- **Reduce management traffic demands on the network**
  - Tailored collection of statistics reduces management traffic up to 75%
  - 4:1 compression ratio on accounting and statistics records
  - Push-based technology reduces SNMP polling traffic tenfold
- **Leverage existing management infrastructures**
  - Integration with existing order entry systems increases productivity fivefold
  - Integration with existing trouble ticketing systems eliminates training costs and double entry of data

Delivering the NPN: Enabling Service Scaling

- **Services, management and networks that scale**
  - Network traffic performance
  - Controls on management traffic overhead
  - Concise trouble-shooting information
  - Client/server architecture
  - Partitioning for enterprise VPNs and carrier VPNs
  - Access to information: operators and enterprises

Delivering the NPN: End-to-End



- Service-based provisioning
- Service-based reporting
- Service level billing
- Customer-based focus

The Navis Advantage

- **Navis enables service providers to deploy cost-effective, profitable new services, quickly:**
  - Allows for flexible service creation to meet varied markets
  - End-to-end network control: Provisioning, Reporting, Billing, Security
  - Delivers scalability
  - Delivers CNM
- **Allows enterprises to benefit from real-world services:**
  - Allows for tailored service programs to meet WAN demands
  - Allows independent monitoring of service quality
  - Secures both data transport and management access

Summary

- **The market drivers for the New Public Network are in place**
- **Service management is the key to enabling widespread deployment**
  - For the service provider: fast deployment of profitable new services
  - For the enterprise: private views, security, services that meet business needs
- **Ascend's Navis delivers service management: priority services, VPNs, flexible bandwidth, secure connections**
- **Ascend is the only vendor prepared to deliver end-to-end service management**