



Cisco IOS® MPLS Management Business Overview

Enabling Innovative Services

February 2004

Agenda

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- Cisco Announcement
- Introduction
- MPLS Management
- Summary

Announcement: Cisco IOS MPLS Enables Innovative Services

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**Business Applications:
Voice, Video, Data, Storage**

- **MPLS Embedded Management**
- **Cisco Info Center VPN Policy Manager 3.1**
- **Cisco CNS NetFlow Collection Engine 5.0**
- **Cisco CNS Performance Engine 2.1**

**Comprehensive
End-to-End
Management
Suite**

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Agenda

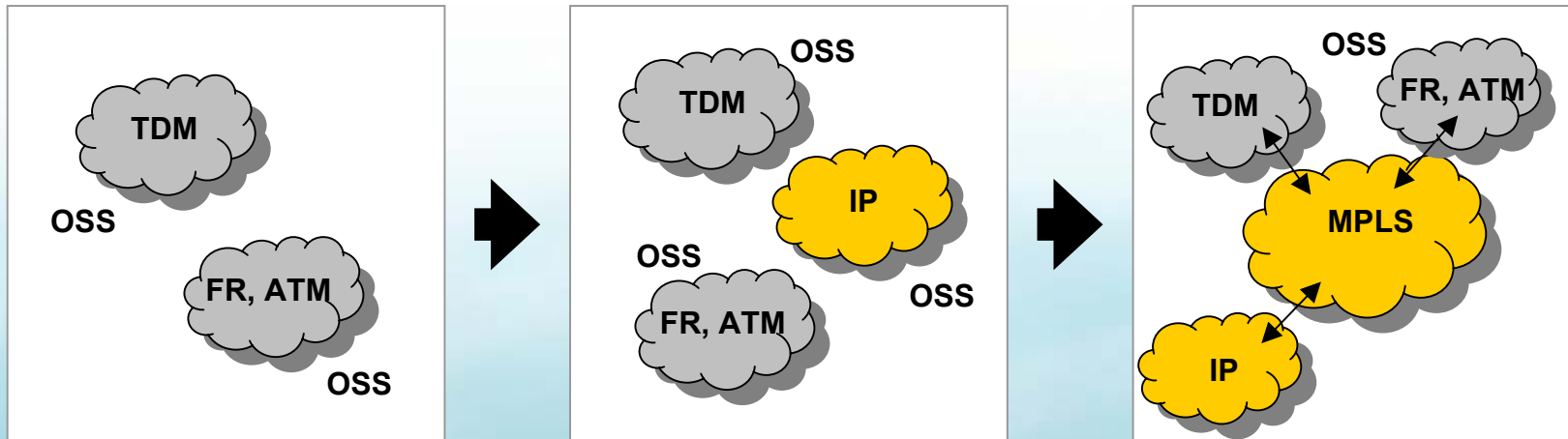
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- Cisco Announcement
- Introduction
Problem, business drivers, opportunity
- MPLS Management
- Summary

Service Provider Problems

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- **Operational Efficiencies**

Increase management automation and availability

- **New Services Provisioning**

Enable competitive differentiation and customer retention through profitable bundled services

- **Disparate Networks**

Manage and consolidate traditional and emerging networks

Service Provider Drivers

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**Profit
Growth**



Innovative Services



**Network
Consolidation &
Convergence**

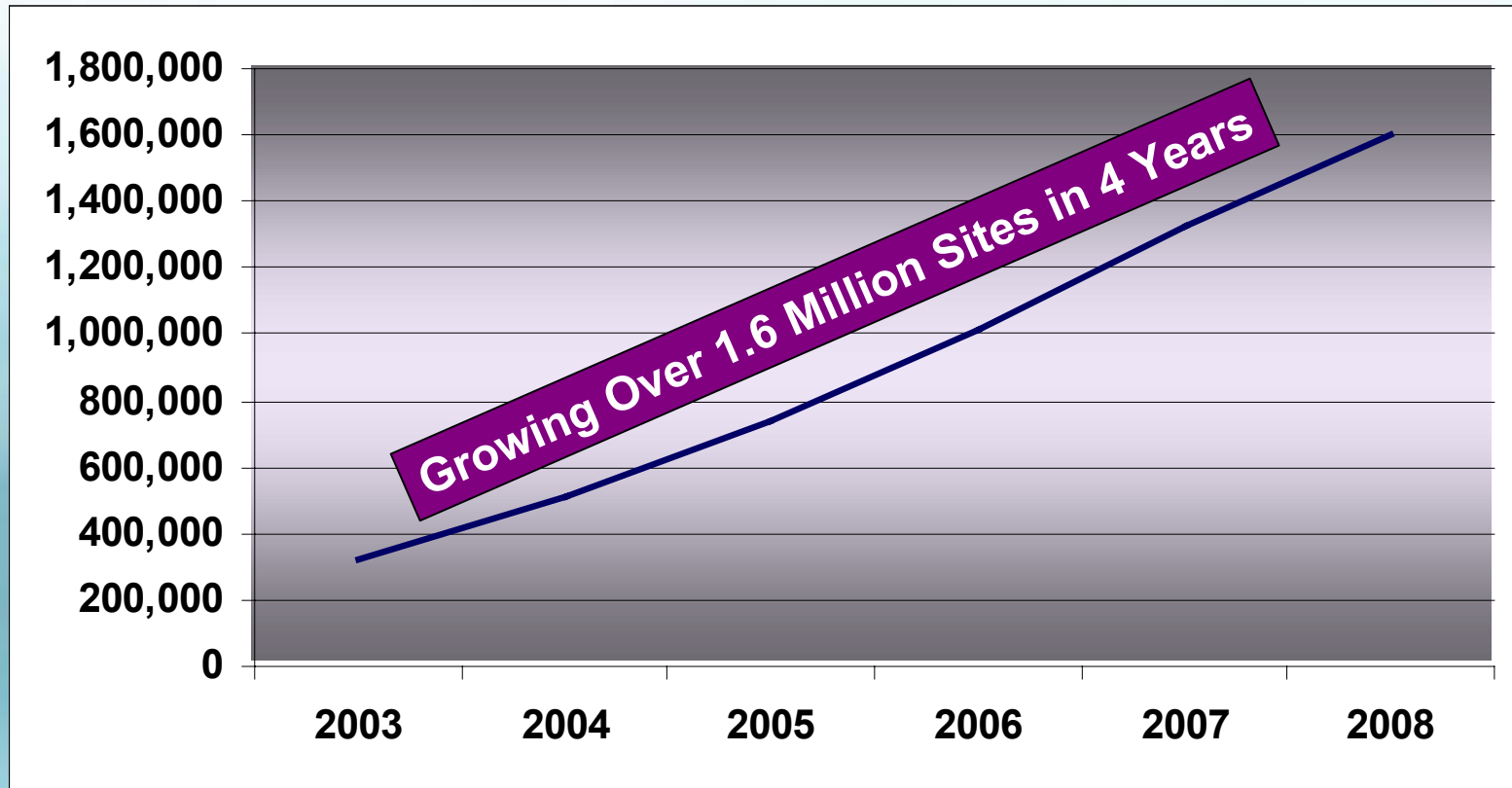
**Flexible Integrated
Management**



Service Sites are Increasing

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Worldwide Total MPLS VPN Service Sites

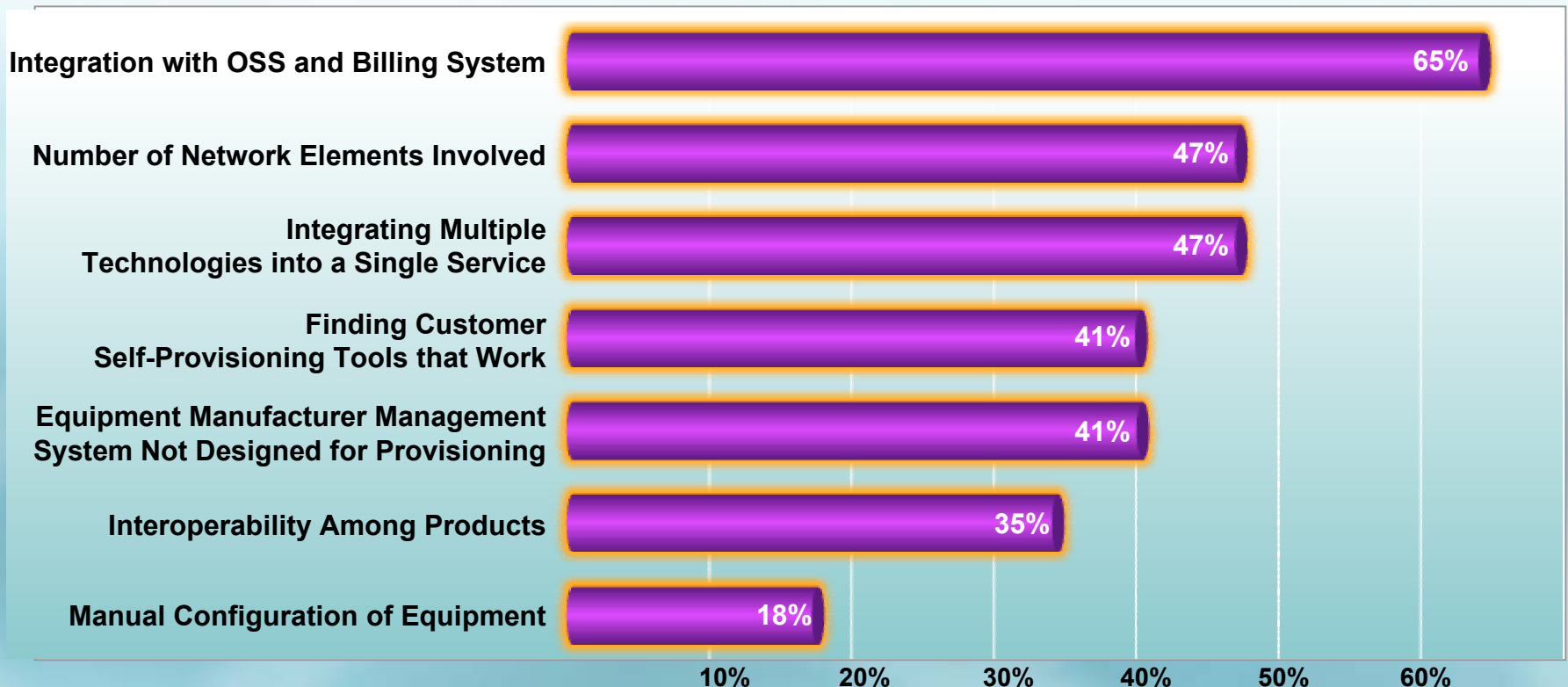


Source: Ovum 2003

MPLS Service Provisioning Challenge

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Challenges in VPN Service Provisioning

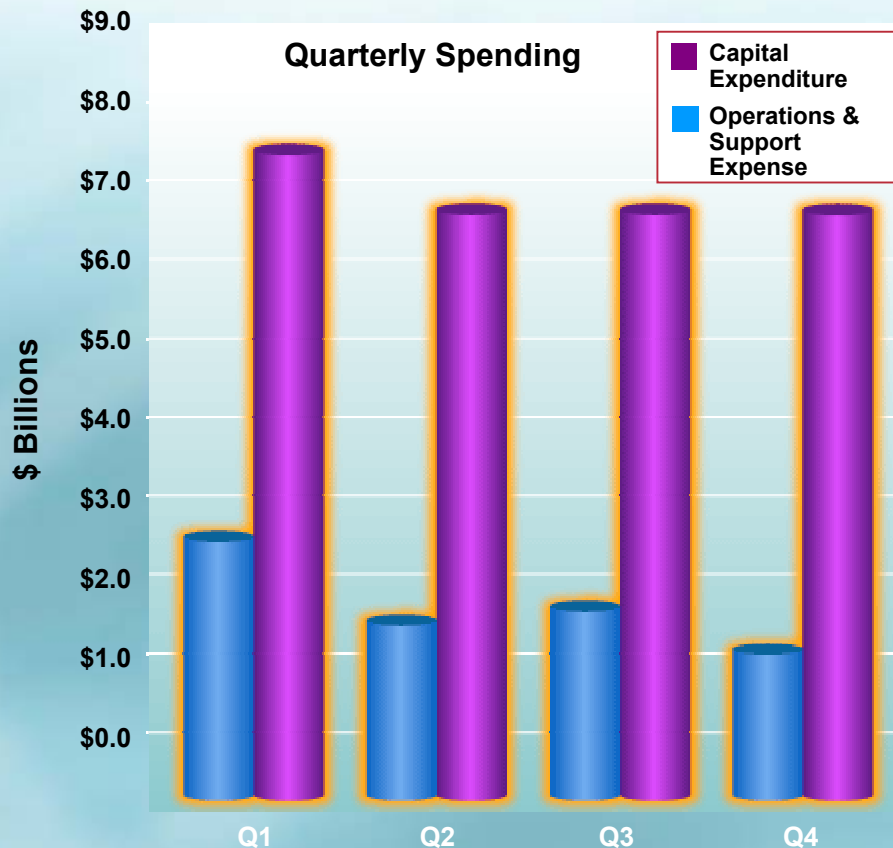


Source: Infonetics, 2003

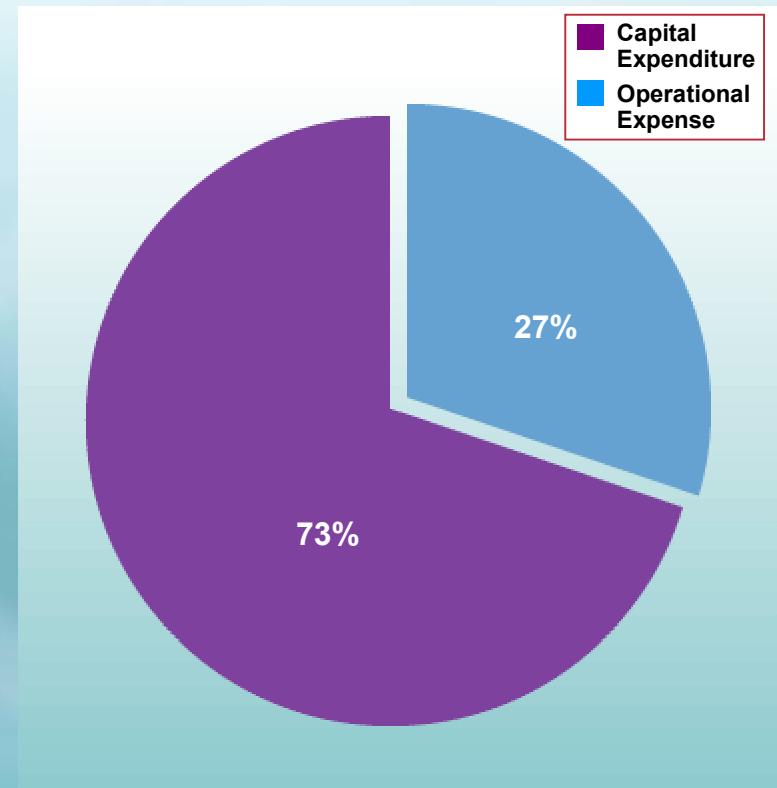
Reducing OpEx with Network Management

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- CapEx typically follows the economy
- OpEx is consistent



- Typical ratio of a Tier 1 carrier CapEx vs OpEx spending
- OpEx efficiencies have higher profitability and a higher ARPU



Source: Frost and Sullivan, 2002

Misconfiguration Leads to Downtime

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Productivity Loss

- Number of employees affected x hours out x burdened hourly rate

Revenue Loss

- Direct Revenue Loss
- Compensatory payments
- Lost future revenue
- Billing losses
- Investment revenue losses

Cost of Downtime

Damaged Reputation

- Customers
- Suppliers
- Financial markets
- Business Partners
- Careers lost

Impaired Financial Performance

- Revenue Recognition
- Cash Flow
- Lost discounts (accounts payable)
- Payment guarantees
- Credit rating
- Stock price

Other Expenses

- Temporary employees
- Equipment rental
- Overtime costs
- Travel expenses

The Need for Service Assurance

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- 70% of downtime cases affect revenue, while 29% affect productivity¹
- Average revenue loss to downtime is \$28,500/hour¹
- 40% of enterprises delay launching new applications due to network performance concerns²
- 55% of enterprises only know about some of their network traffic²
- 59% of enterprises simply add bandwidth to ensure application efficiency²

¹ Source: 2003 Infonetics Research Study "Cost of Enterprise Downtime"

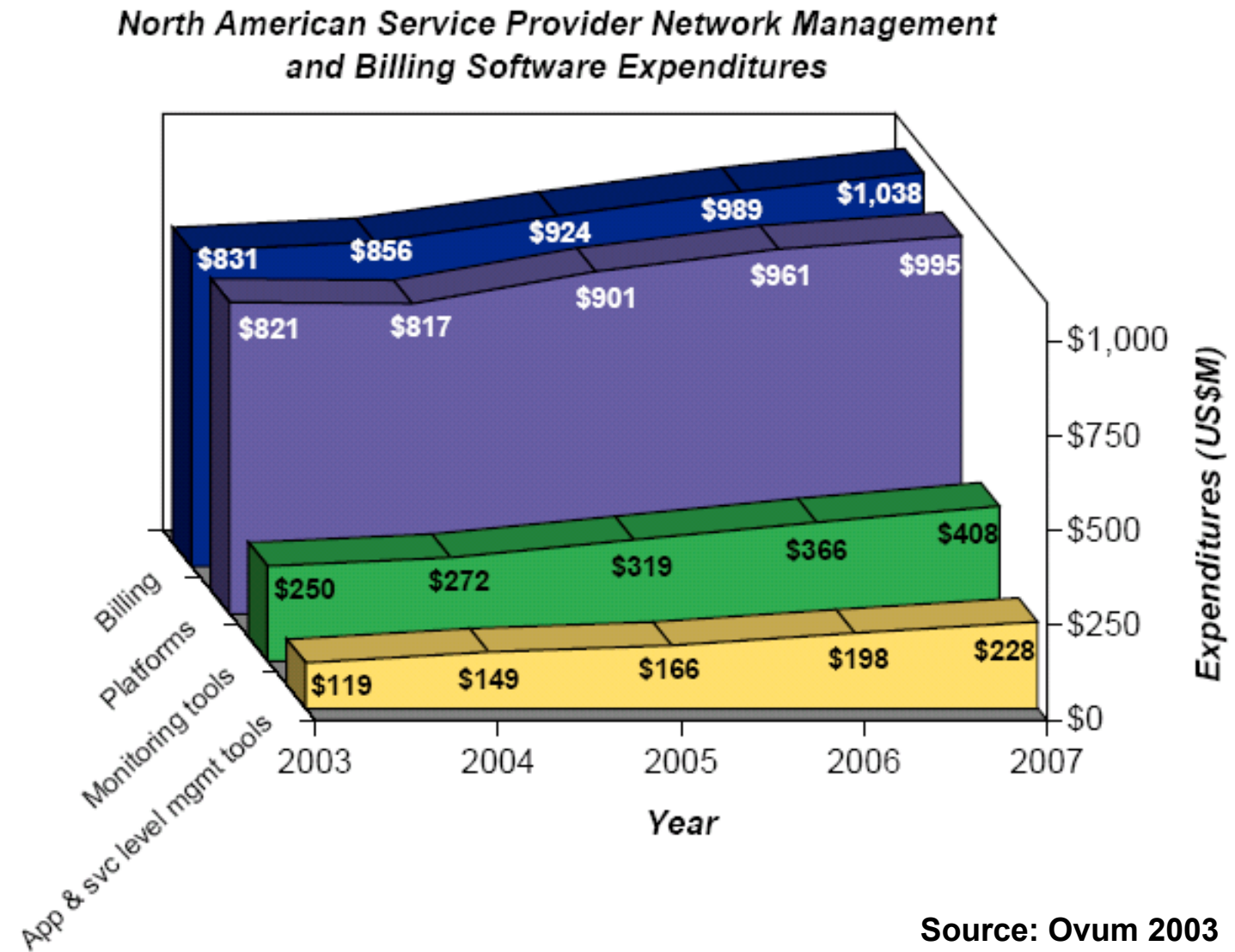
² Source: 2003 Network World Application Performance Market Study

Sector	Cost/Hour	% Due to Network	Outage vs Degradation
Energy	\$1,624	23%	72% vs 28%
High Tech	\$4,167	8%	15% vs 85%
Healthcare	\$96,632	41%	33% vs 67%
Travel	\$38,710	10%	56% vs 44%
Finance	\$28,342	22%	53% vs 47%

Source: The Costs of Enterprise Downtime, 2003, Infonetics Research

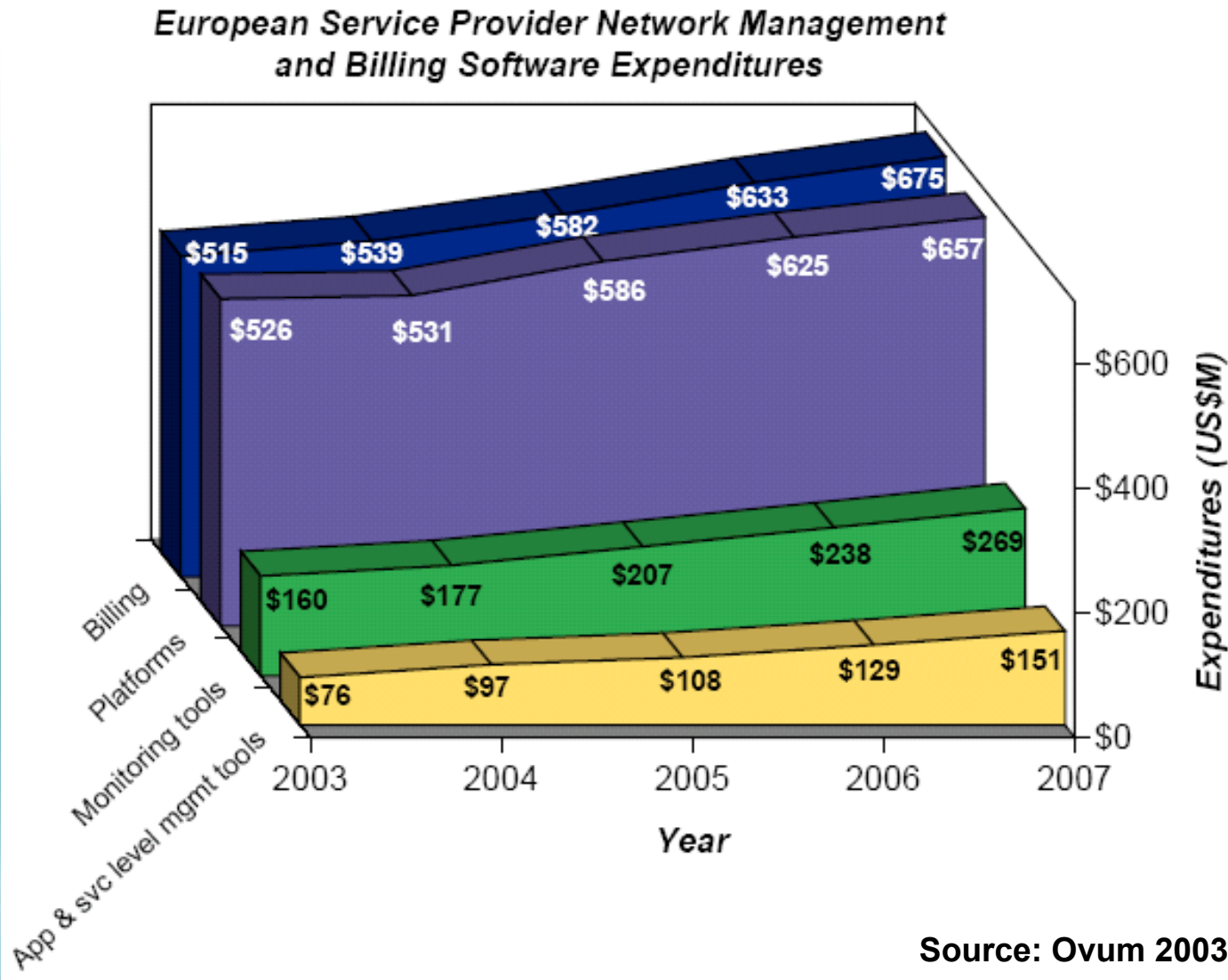
Network Management: Revenue Opportunity (US)

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Network Management: Revenue Opportunity (Europe)

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Network Management: Revenue Opportunity (Worldwide)

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2007 Worldwide End-User Expenditures (US\$)

Platforms, frameworks, and element managers	\$2.45B
Monitoring tools	\$1.24B
Application and service level management tools	\$969M
Total	\$4.66B

Source: Infonetics 2003

The Business Goal

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Voice



Video



Data



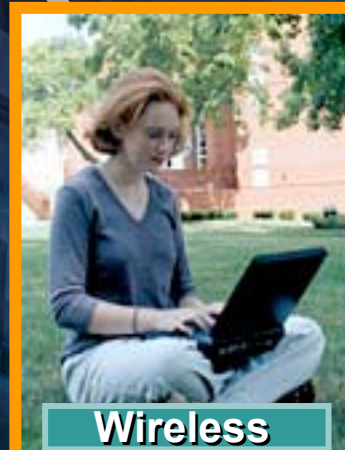
Storage



**Management of Innovative
Services for Converged
Networks**



Wired



Wireless

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Key Network Management Attributes

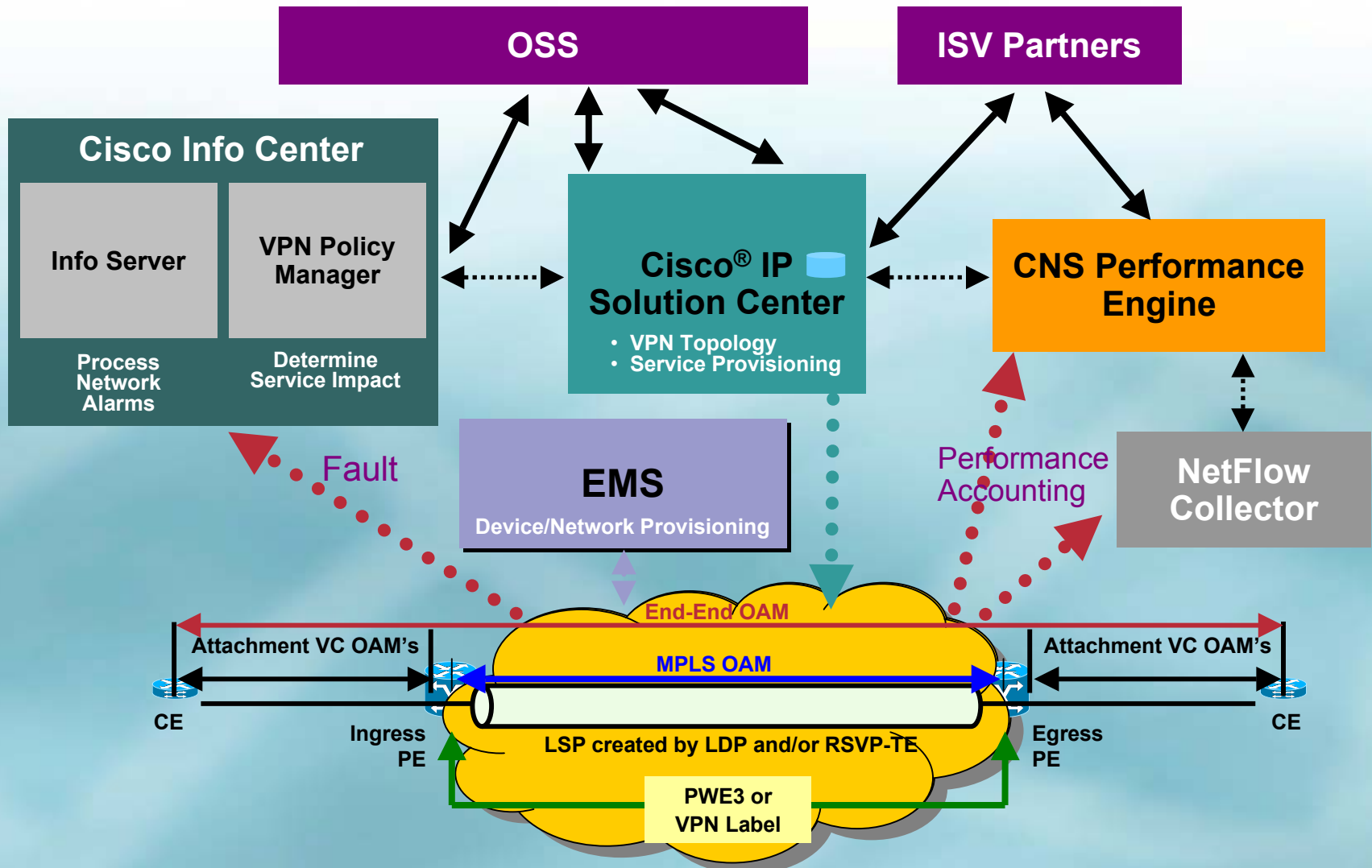
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Customers need:

- **Fault management**
- **Configuration**
- **Accounting**
- **Performance**
- **Security**

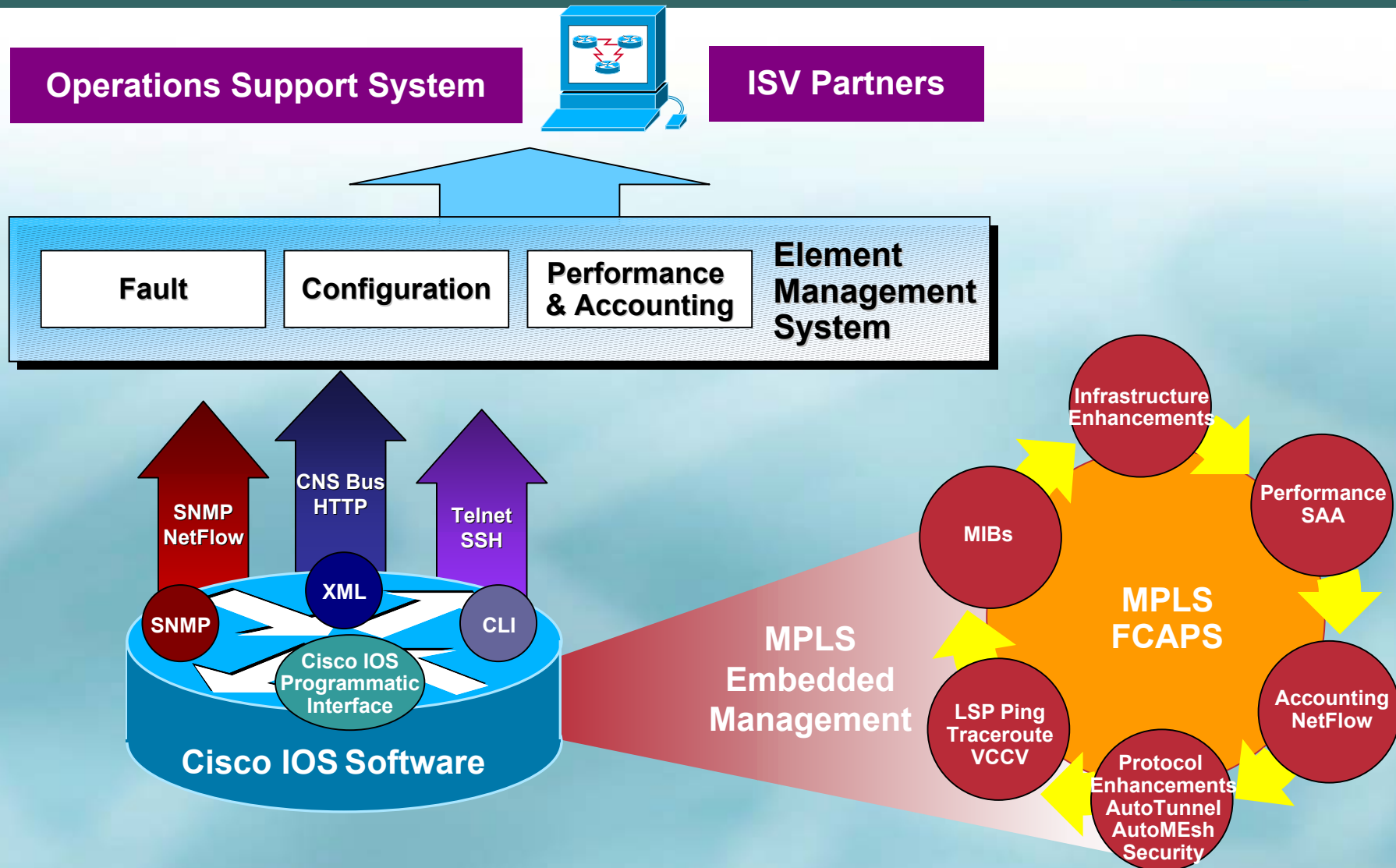
MPLS Management Life Cycle

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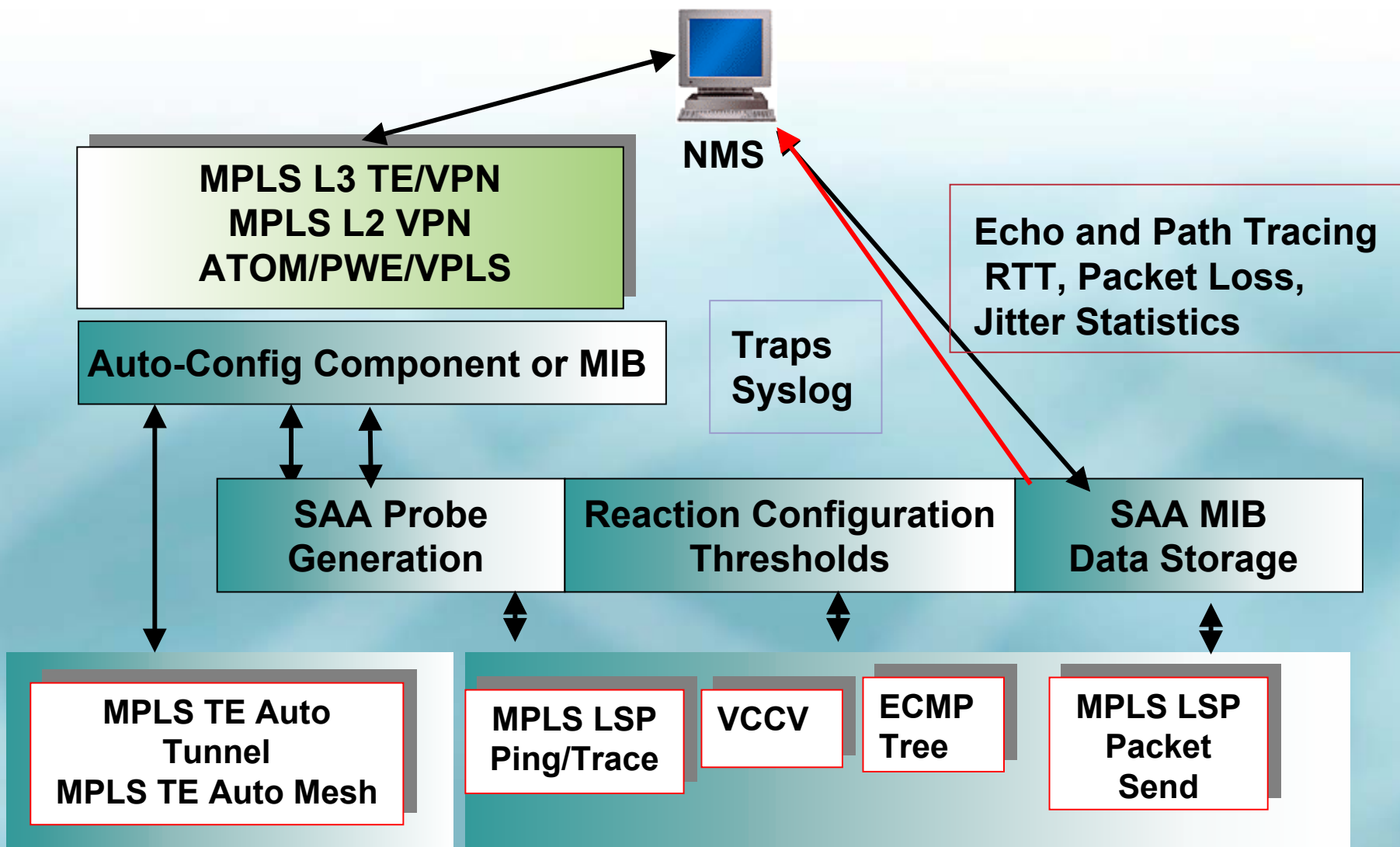
MPLS Management Architecture

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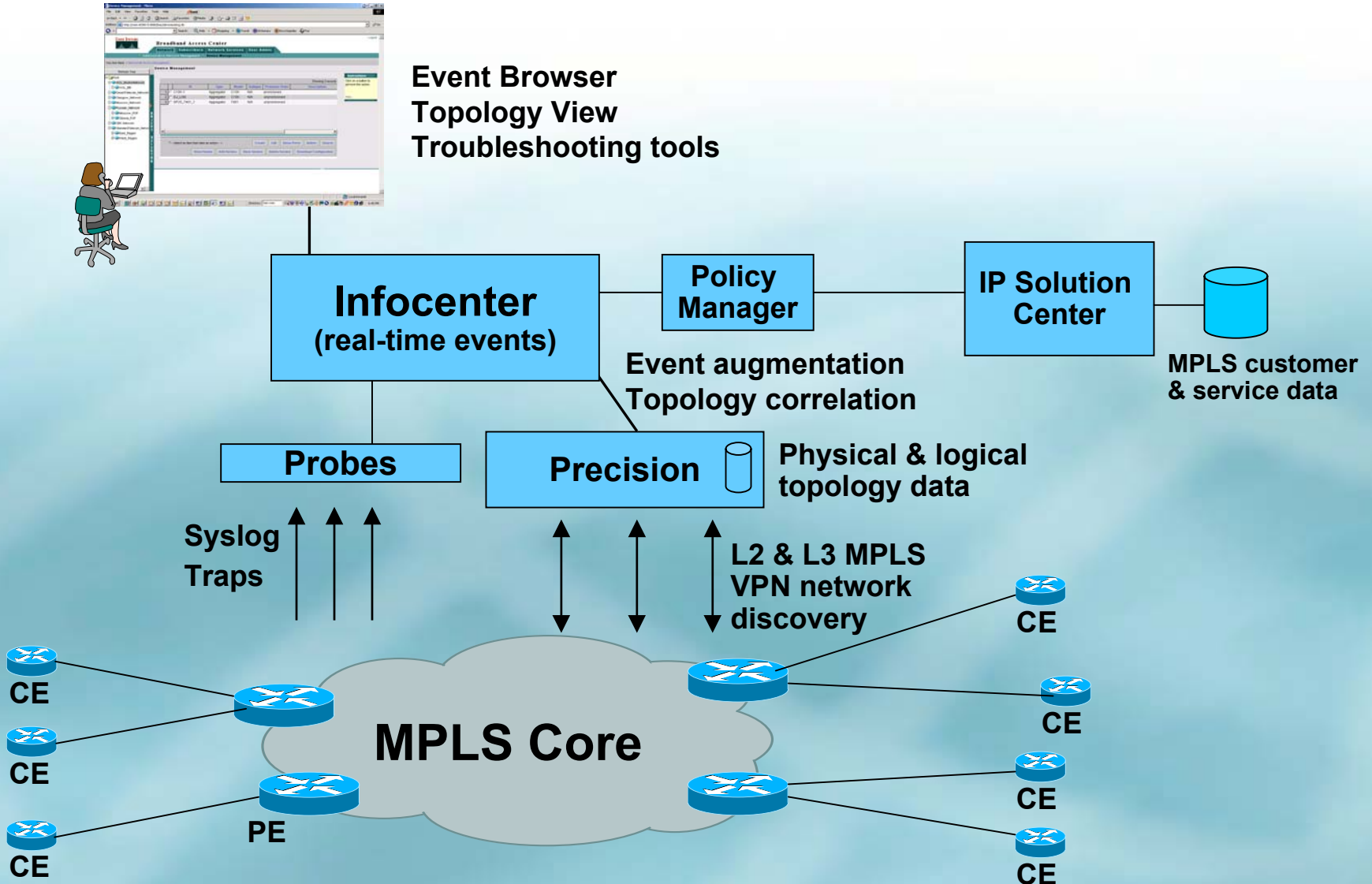
MPLS Embedded Management and Monitoring

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Cisco Info Center

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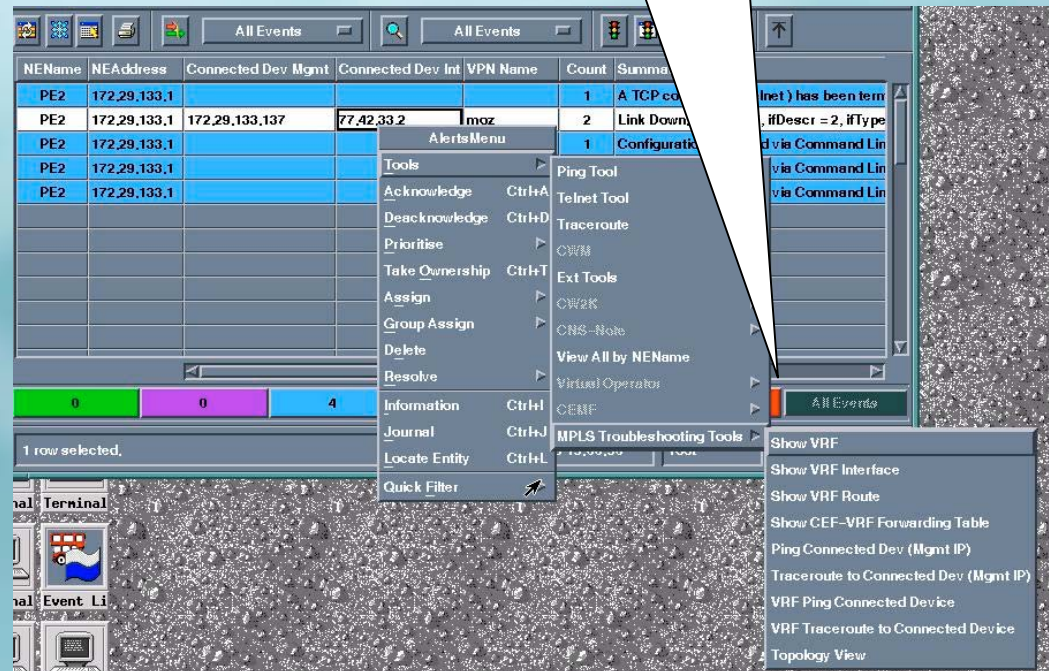


Cisco Info Center: VPN Policy Manager 3.1

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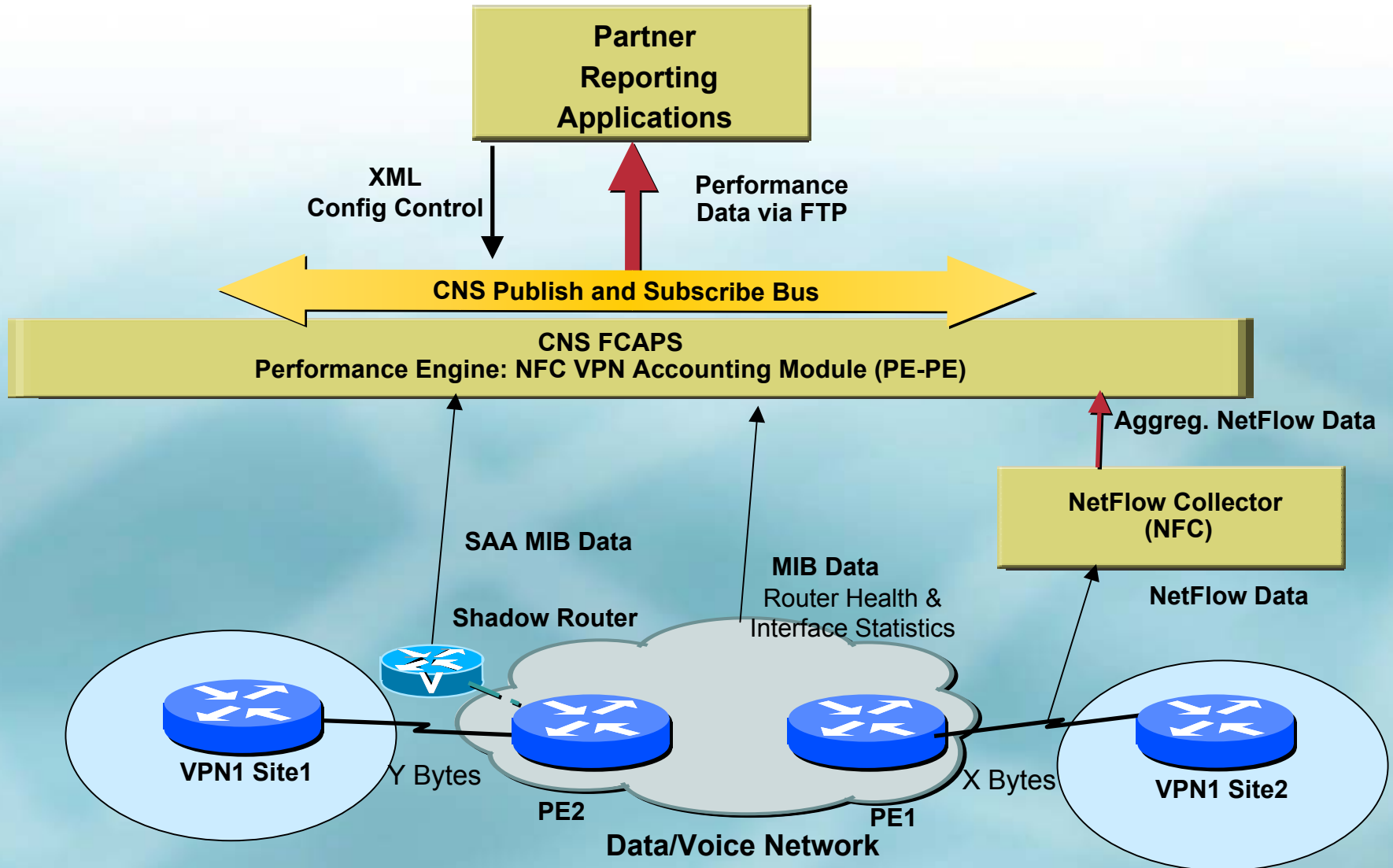
- Cisco Info Center VPN Policy Manager (Cisco Info Center and IP Solution Center integration) correlates network events to affected services
 - CIC VPN Policy Manager available today
- Cisco Info Center VPN Policy Manager 3.1 offers:
 - New Cisco Info Center VPN Policy Manager DSA developed
 - New Cisco Info Center VPN Policy Manager policies developed
 - Device/Interface/Sub-interface MPLS VPN subscriber correlation
 - MPLS troubleshooting tools

Cisco Info Center MPLS Trouble Shooting Tools



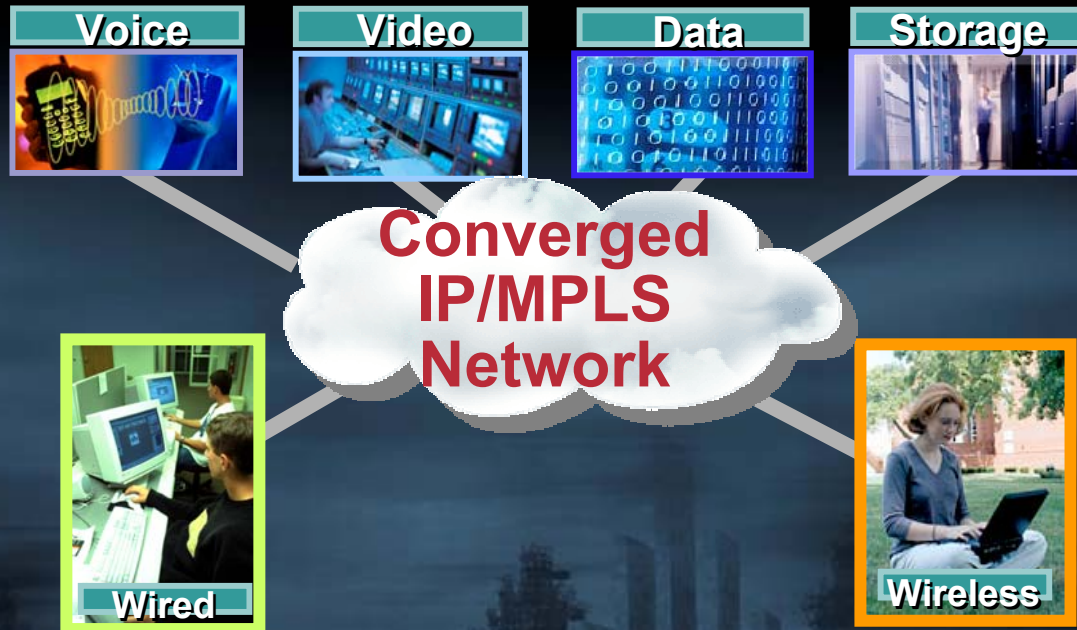
Cisco CNS: NetFlow Collection Engine 5.0 & Performance Engine 2.1

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Summary: Flexible, Intelligent, Integrated MPLS Management

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- Cisco IOS® MPLS Management suite of standards-based tools and technologies enables service providers to increase the overall reliability, availability and serviceability of MPLS networks and services.
- Simplified provisioning and automated troubleshooting lower total cost of ownership (TCO) and boost productivity.
- The integrated suite for network and service management provides an end-to-end, flexible and intelligent solution for business agility.

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Benefits, vision, leadership

Service Provider Benefits

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- **New service opportunities**

Automation for easier rollout of innovative services

- **Simplification & cost reduction**

Error/fault/attack detection and rapid diagnosis for quick recovery and identification of performance degradation to reduce MTTR and improve availability

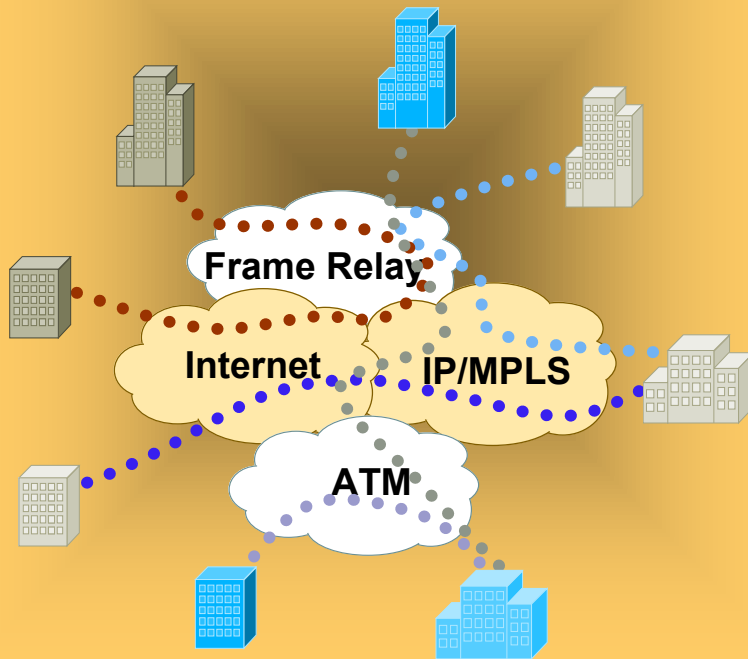
- **Investment protection**

Standards-based open architecture for integration and end-to-end management

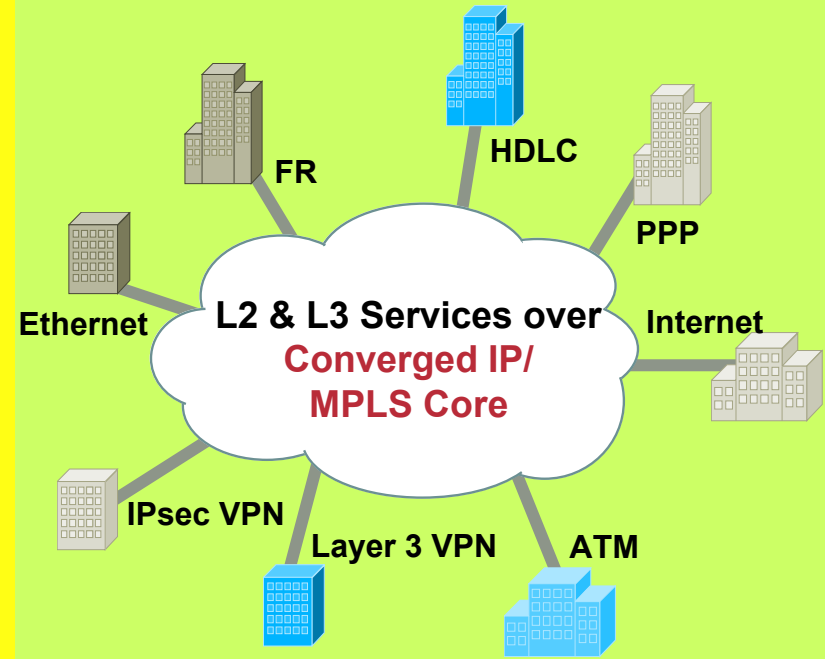
Customer loyalty & satisfaction with service level agreements (SLAs)

Vision

Today:
Many Services,
Many Management Tools



Future:
Many Services, One E2E
Integrated Management Suite



World-Class Customer Support

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- **2,000** Technical Support Professionals
- **1,600+** Support Engineers* (400 CCIEs) on 24x7
- **630+** Depots and **10,000** Field Engineers in **120** countries*
- **85,000+** Assisted cases/ month
- **321,000** Customer issues resolved/month
- **75%** TAC Web resolved: of **25%** assisted, **64%** were web-initiated
- **98%** Material availability
- **92%** Orders submitted online, **55%** “no touch”
- **60%** Change orders submitted online

* Internal & Outsource Partners

Customer Advocacy Mission

Accelerate customer success with Cisco through innovative services and world-class people, partners, process, and tools.



Cisco Leads in the MPLS Market

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Americas

EMEA

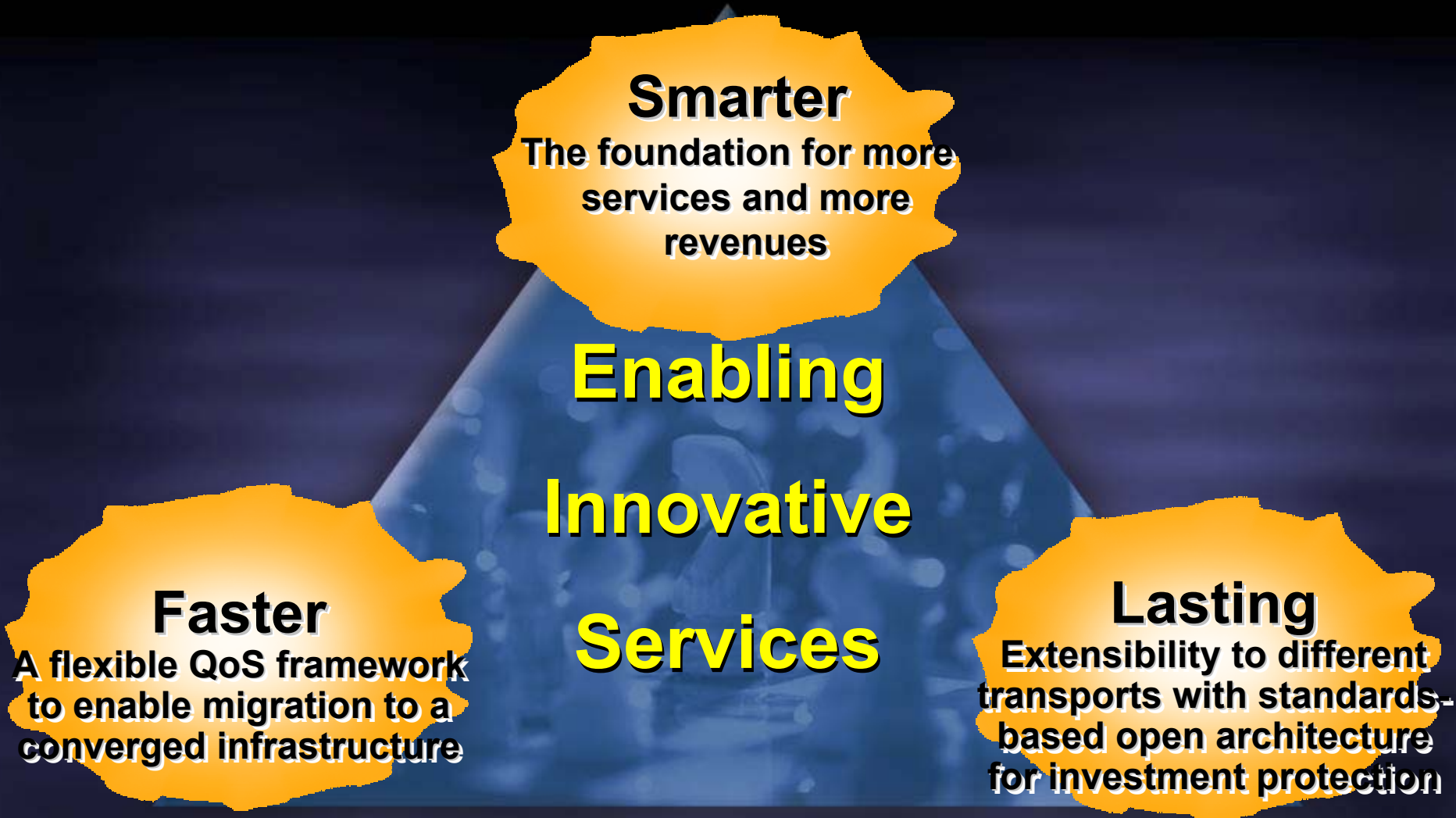
AsiaPac/Japan

Over **200** Customers (MPLS Core & L2/L3 Edge)



Cisco IOS MPLS

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Cisco Systems: Worldwide MPLS Leader

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- **Undisputed technology & market leader**
- **Premier MPLS innovator**
- **Industry's most complete end-to-end solution**
- **First proven solution with the world's largest installed base**
- **World-class customer support**

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