

MPLS VPNs: The End of the Beginning

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AT&T Vice President

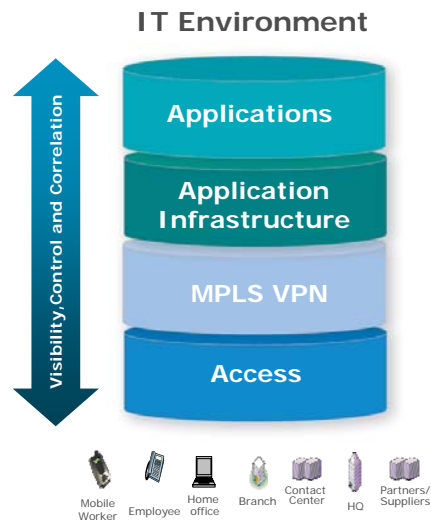
MPLSCon May 2006



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Vision of Enterprise Networking

- Dynamic virtualized IT Environment
- Simplified to the IT organization and end users
- Visibility and control of services delivered
- Application delivered as Service over IP



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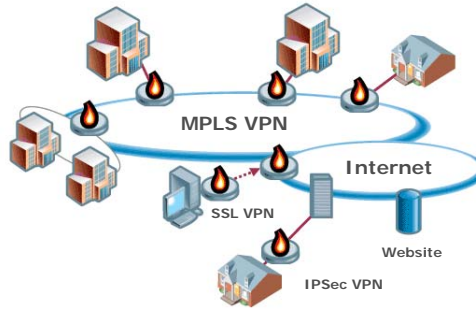


MPLS VPN:

The End of the Beginning

MPLS VPNs are moving into main stream driven by the value delivered to enterprises

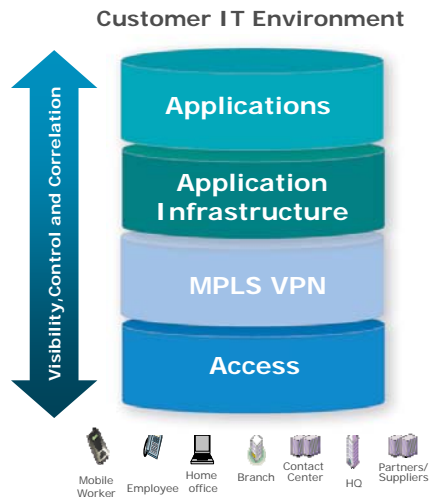
- **Cost control and savings** through scalability, access aggregation, moves/changes, application convergence and simplified management
- **Simplified disaster recovery** and web-based operations
- **Reliable performance, security and QoS** for applications
- **Shows agility** thru rich features and multiple access technologies and support of Intranet, extranet, remote access
- **Future-proof platform** where new applications being developed



Now it's time to move to the next level!



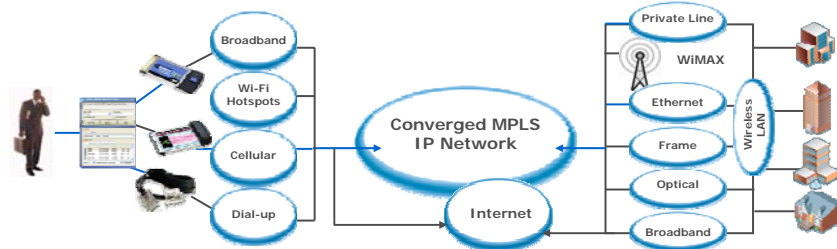
Evolving MPLS-Based VPN to the Next Level



- **"Anywhere" VPN**
 - Mobile and fixed line access integration
- Intelligent Network-Based Services
 - Multicast
 - Dynamic routing
 - Network-based Security
- Application-aware environment
 - Application Infrastructure
 - Application Management
- Converged applications
 - Services Over IP



Mobile and Fixed Line Access Integration "Anywhere VPN"



Today: Remote access from wherever you are with a comprehensive solution including dial, WiFi, broadband, cellular, and point-to-point with Single Client

Future: Customers can add higher speeds and move between wireless and wireline seamlessly for both voice and data

Wireless/Wireline Convergence "Anywhere VPN"

Bundling

PHASE ONE:

Mobility Features:
Connected Pricing,
Designated Number,
Service Level Agreements

Feature Integration

PHASE TWO:

Enhanced/ Differentiated
Functionality for Cellular
through VoIP Integration

Seamless

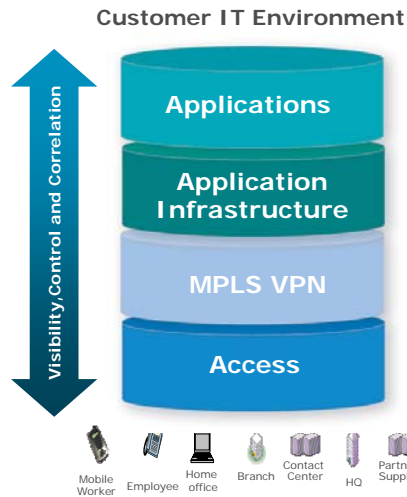
PHASE THREE:

Integrated Cellular / Wi-Fi /
VoIP Devices with
Automated Hand-Offs and
Seamless User Experience

Technology Enablers

- Scaled Deployment of Voice-Ready WLANs
- Mobile IP with higher speeds, Quality of Service, fast roaming
- VoIP Platform Extension to Cellular
- Availability of Multi-Mode Devices
- IMS standard

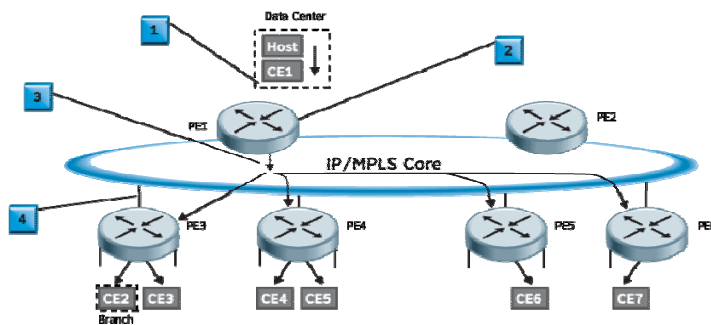
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Multicast VPN

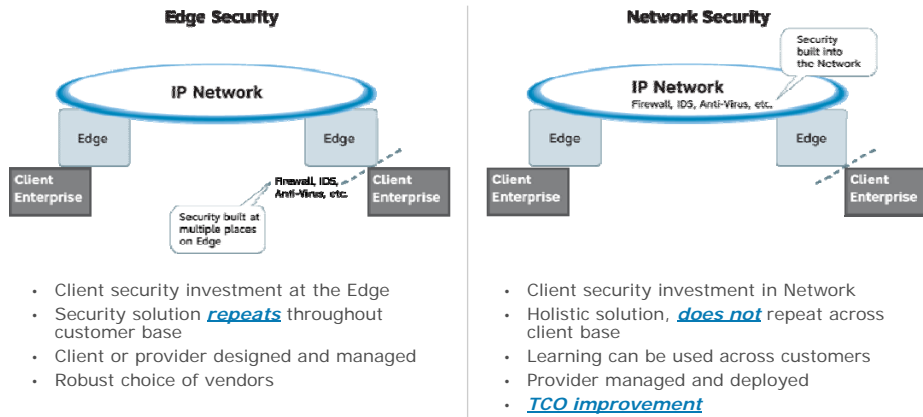
Intelligent Network-Based Services



Multicast VPN Features

- Scalable multicast operating in customer environment
- Replication for remote sites occurs in the network
- Saves bandwidth at the Source location
- Capability always present for multicast enabled sites

Edge & Network-based Managed Security Intelligent Network-Based Services



- Client security investment at the Edge
- Security solution *repeats* throughout customer base
- Client or provider designed and managed
- Robust choice of vendors

- Client security investment in Network
- Holistic solution, *does not* repeat across client base
- Learning can be used across customers
- Provider managed and deployed
- *TCO improvement*



Dynamic Routing Intelligent Route Service Control Platform (iRSCP)

What is iRSCP?

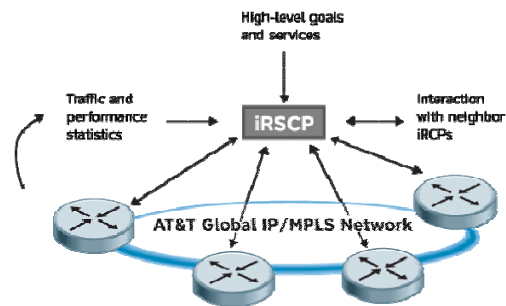
- Like the Network Control Points in the voice network-enables centralized control of routing architectures
- A new adjunct network technology that operates in the IP Routing Control Plane
- Enables "Intelligent Routing Controls" for both internal and end-customer applications
- Enables features/functions that can't be accomplished with traditional routing protocols alone

What applications does iRSCP support?

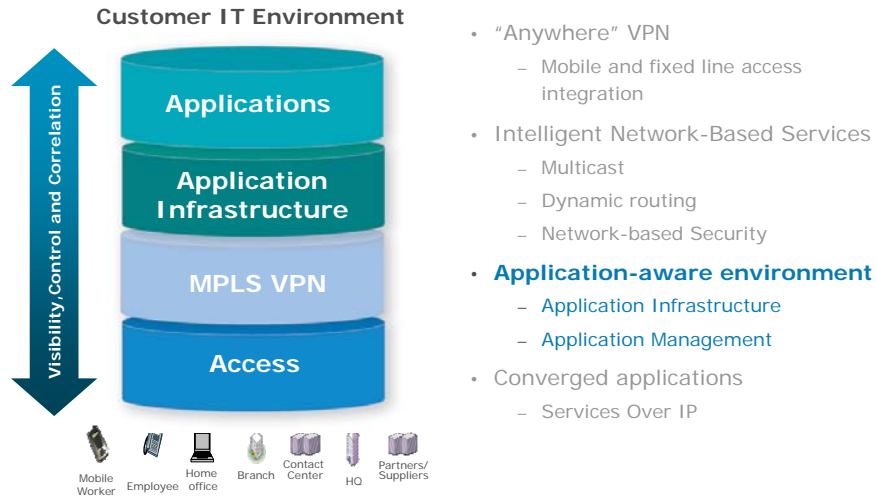
- Security - DDoS Mitigation, Packet Scrubbing,
- VPN - arbitrary and dynamic reachability requirements, flexible routing architectures
- Zero DPM - minimizing impact of Planned Maintenance

Key Benefits

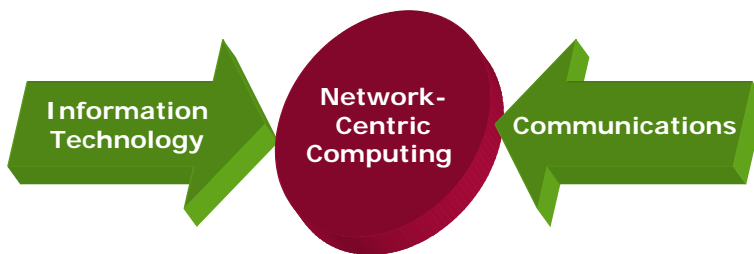
- Customized services that better meet your IP needs



Evolving MPLS-Based VPN to the Next Level



Application Infrastructure: Convergence and Shifting Boundaries

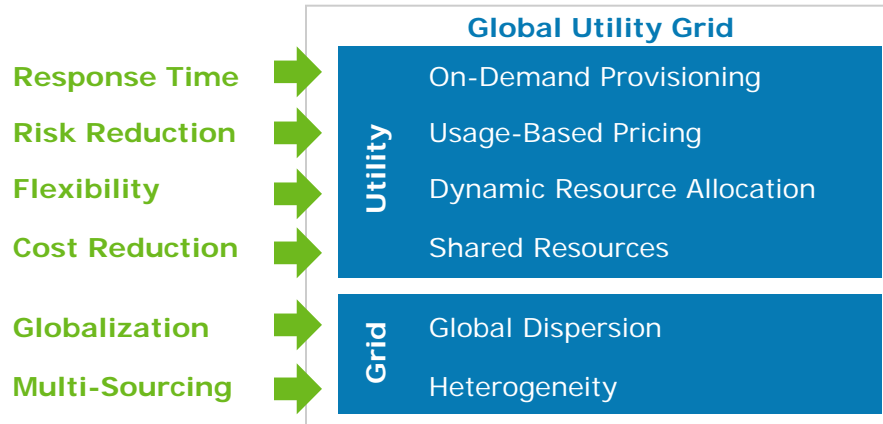


- **Utility** and **pay-per-use** business models
- **Virtualization** for consolidation and flexibility
- **Application** orientation
- Seamless **mobility** and **services** over IP
- **Ultimate End-State: Global Utility Grid**

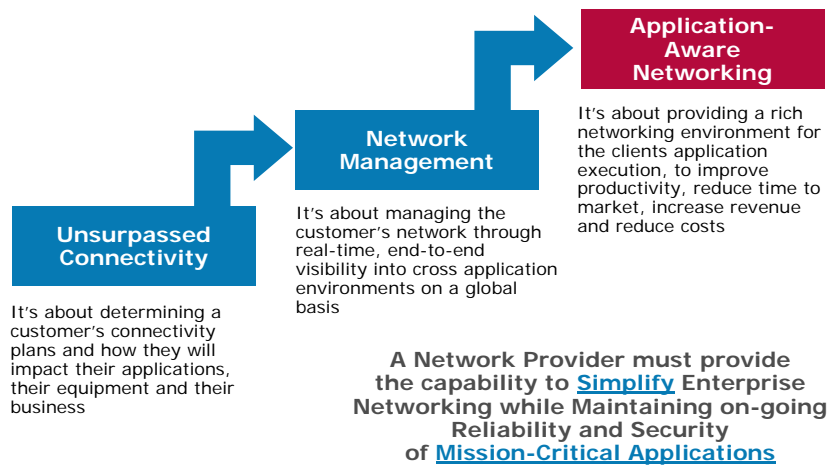


Application Infrastructure Moves to Global Utility Grid

Application-Aware Environment

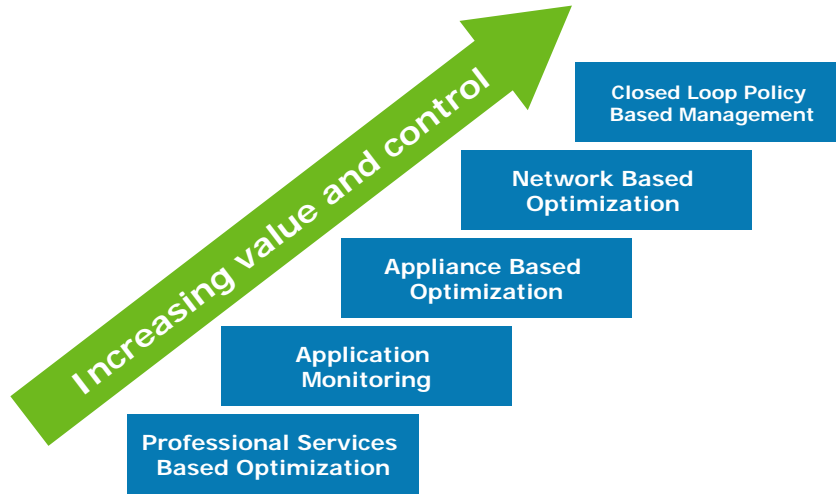


Application Performance Management: "The Networking Game is Changing"



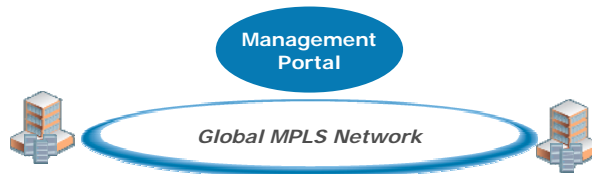
Application Performance Roadmap

Application-Aware Environment



Application Visibility, Control, Policy Management

Application-Aware Environment



Service-oriented architecture

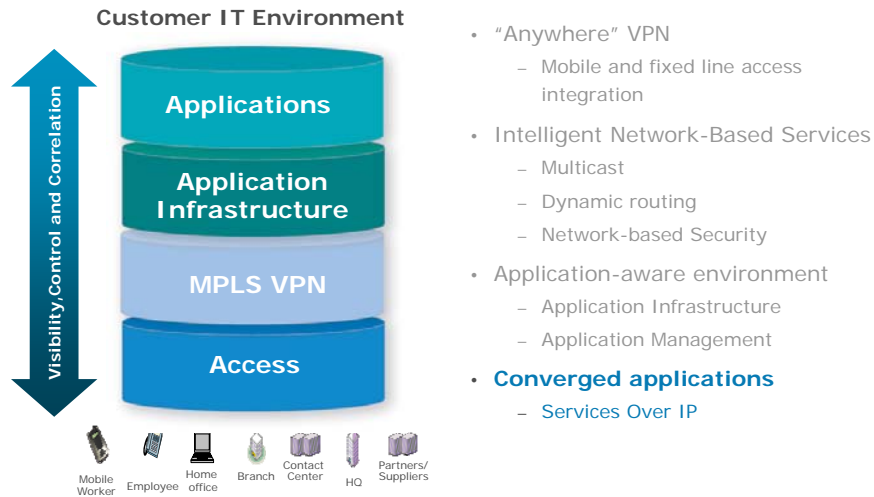
- Control and correlation
- Real-time application discovery
- Advanced, adaptive infrastructure
- Personalized applications for users
- Premises and Network based applications management
- Closed loop actions to resolve problems
- Application level SLAs

What does it do?

- **Unites** application and network layers
- **Translates** application requirements into executable network functions
- **Abstracts** data and correlates data into actionable items
- **Adapts** existing network capabilities to meet new application demands



Evolving MPLS-Based VPN to the Next Level



Converged Applications via Service over IP

Dynamic Network Applications

- Multi-modal
- Ubiquitous
- Device independent
- Intelligent and integrated

Delivered in New Ways

- Predictive
- Personalized
- Global
- Highly Secure

Delivering New Efficiencies

- Improved business performance
- Enhanced corporate agility
- Increased operational control
- Strengthened security



The Next Generation of Convergence is About Collaboration Converged Applications

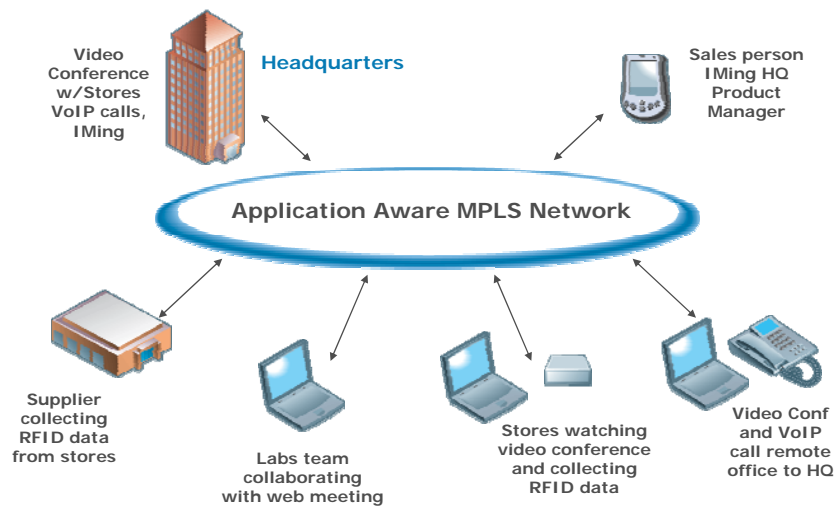
Web Services & Service Oriented Architecture Will Define Collaboration

Now		Next
Voice	➔	"Click to Call" from any application
Email	➔	Access to and from any device
Instant Messaging	➔	Presence will drive productivity & customer satisfaction
Unified Communications	➔	Single point for all communications: VM, Email, Fax, Automated Attendant, Call Control Policy
Conferencing	➔	Increased richness, flexibility and device support
Media	➔	Repurposing digital assets / learning Personal Communications / On demand
Document Collaboration	➔	Auto sync, Group Share, Dynamic



What's on the Horizon...Transaction Convergence

One **Application Aware** Network for **Intelligent, Coordinated** Transactions



AT&T

Driving Enterprise Networking to the Next Level

Integrated SoIP

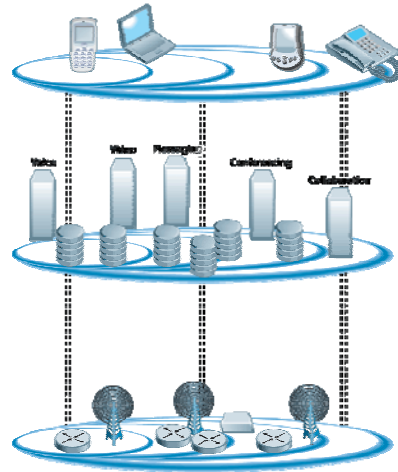
Designed with point and click convenience for ease of operations and protection against technology obsolescence

A Portfolio of Interoperable Applications

Standards-based (SIP, SIMPLE and Voice XML, IMS) Voice, Video, Conferencing, Collaboration and Messaging applications with same features across devices

Converged IP Infrastructure

Global MPLS VPN, highly secure application aware infrastructure with industry leading performance metrics and management options



Next Gen Enterprise Networking Delivered

Delivers to Enterprise

- Feature rich MPLS based VPN platform with application awareness and network based intelligence
- Integrated wire line and wireless access and technology inter-working
- Converged applications and collaboration delivered via Service over IP
- Dynamic Application management and resource allocation capabilities

How Enterprises benefit

- Secure, scalable, reliable and simplified networking solutions and technology risk mitigation
- Cost-effective, flexible and mobile
- Reduced capital investment and on-demand capacity
- Productivity improvement via same features and converged tools for access to information and collaboration
- Better more granular, visibility, management and control over various applications and resource allocations





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