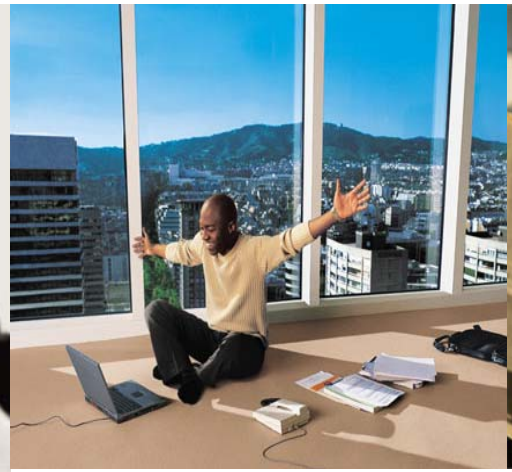
Lucent – Juniper Partnership

Delivering Unified Solutions to Service Providers


Michael Nielsen

Chief Technology Officer

Integrated Network Solutions

March 16, 2004

Lucent Technologies
Bell Labs Innovations

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Lucent - Juniper Partnership

Designed to meet Service Provider business challenges

Challenges: Service Providers must cost-effectively and flexibly grow in existing markets and build new services markets, while being more profitable.



Increase Profit in Existing Markets

⇧ Expand Revenues $$$

⇩ Reduce Operating Costs

Build High-Margin Revenue Streams in New Markets

⇧ Build New Revenue Streams

$$ Optimize Incremental Investments

Solutions: Partnership focused to address Service Provider profit and growth challenges:

- Capture revenue in new markets: add IP VPN Services, Enhanced DSL, IP Centrex, Optical IP Services across existing infrastructure.
- Increase revenues in proven, profitable markets: expand Frame Relay, ATM business.
- Cut CapEx and OpEx: optimize networks using IP/MPLS and fully integrated network provisioning and management systems.
- Speed time-to-revenue: world-class professional, deployment and maintenance services across a multi-vendor network.

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Lucent and Juniper Join Forces

Solutions designed to maximize services revenue and minimize network costs.

- Joint solutions that leverage current networks, are integrated end-to-end, pre-tested and supported by Lucent Worldwide Services for faster, easier deployment:



- **Multiservice MPLS Core Solution**
- **Enhanced IP VPNs Solution**
- **Enhanced DSL Solution**
- **Optical IP Services Solution**
- **IP Centrex Solution**

- Joint development combines Juniper leadership in IP/MPLS with Lucent leadership in Data, Voice and Optical.
  - *ATM over MPLS Trunking* capability: enables the network to maintain ATM QoS and SLAs across an MPLS Core - affording more services options.
  - Lucent Navis® iOperations network management added to Juniper E, M, T-series products.
  - Lucent Worldwide Services complete support for solutions.

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Lucent - Juniper Unified Solutions

Lucent Navis® iOperations software simplifies operations, reduces cost and speeds time-to-revenue.

Navis ® iOperations Software

Provisioning:

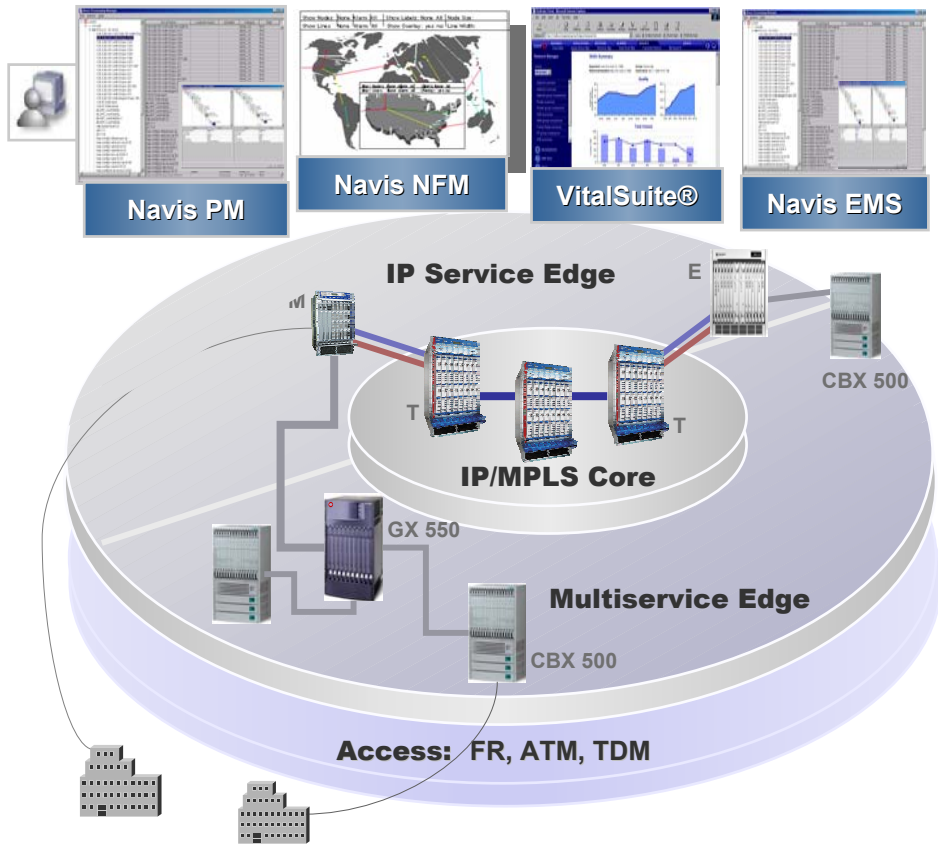
- Reduces provisioning complexity with one-click, end-to-end service provisioning
- Speeds service delivery with flexible service modules

Assurance:

- Ensures QoS with proactive identification and resolution of quality degradation.
- Reduces mean time to repair.

Element Management:

- Centralizes management of Juniper and Lucent network elements with a common platform and GUI.



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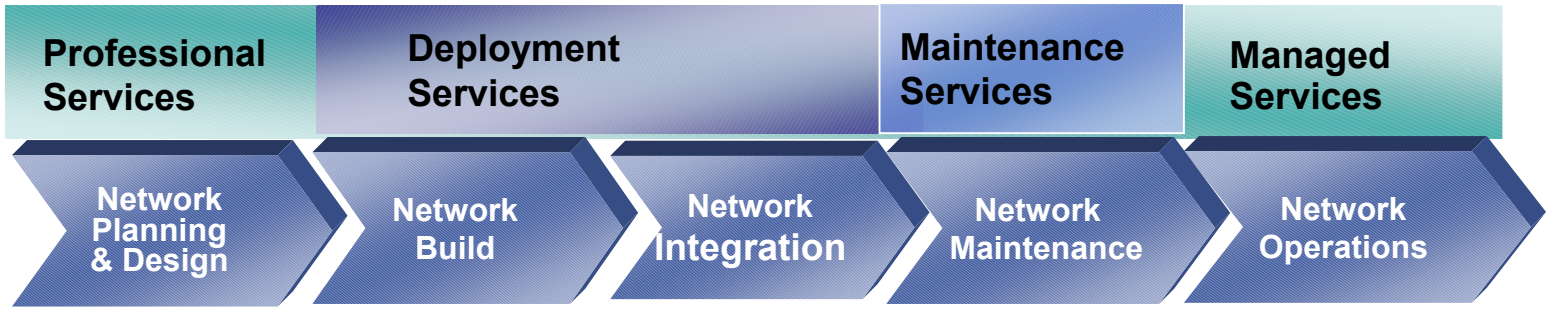
Lucent - Juniper Unified Solutions

Lucent Worldwide Services: helping service providers yield the most from their networks

Lucent Worldwide Services Integrated Offerings:



- LWS has a direct link to Juniper IP/MPLS expertise.
- LWS supplements Service Provider resources to help reduce time, cost and risk associated with new services and technologies.

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Joint Portfolio Development, Joint Customers





May 2003

- **Lucent and Juniper Announce Partnership**

Sep 2003

- **Lucent and Juniper expand JDA**, with solutions enhancements through 2005.

Oct 2003

- **Announce** availability of unified Enhanced IP VPN Solution and define unified Multiservice MPLS Core Solution
  - Demo Enhanced IP VPN Solution, using Navis iOperations to provision VPN, including E-series

Jan 2004

- **Customer Win**: jointly announce China Unicom contract win for Multiservice MPLS Core Solution

Feb 2004

- ***MPLS World Congress* Live Solutions Demo**: provision Multiservice MPLS Core as well as Enhanced IP VPNs.
  - Demo ability to create LSPs and optimize over a MPLS network, using both Juniper and Lucent equipment.
- **Announce Juniper M320 integrated** into unified Multiservice MPLS Core and Enhanced IP VPN solutions, supported by Navis 3Q04.

Next

- **MPLS Standards, Joint Work**: Jointly submit contributions for ATM/MPLS signaling interworking to the MPLS and Frame Relay Alliance
- **Further IP and ATM integration:** Customer-driven development of enhanced capabilities and features, enabling VPNs etc.

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Lucent - Juniper Unified Solutions

Enhanced with new Juniper M320 routing platform.

- M320 platform to be integrated into the unified Juniper-Lucent Solutions (3Q ’04):
  - Enhanced IP VPN Solution
  - Multiservice MPLS Core Solutions
- Integrated into solutions, offering additional scaling and flexibility options for secure and reliable L3/L2 applications.
- Supported by Navis iOperations, as part of unified solutions, for exceptional operations efficiencies.
- Supported by Lucent Worldwide Services, as part of unified solutions.

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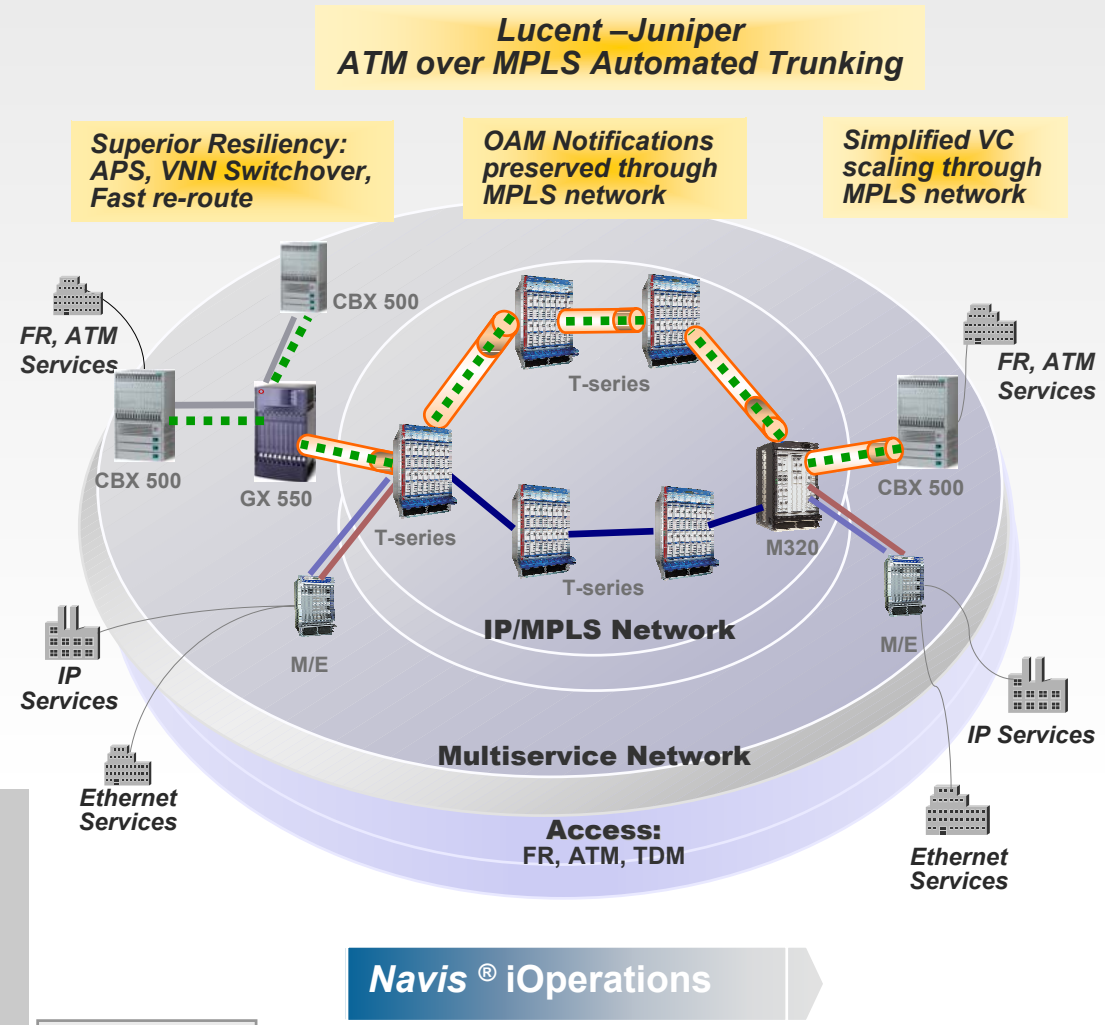
Lucent - Juniper Multiservice MPLS Core Solution

Service providers can cost-effectively deliver and guarantee varying levels of ATM/FR and IP services, across a converged MPLS network.



Enables service providers to seamlessly migrate ATM/FR services to an IP/MPLS core network.

- Service providers can save 24% on capital expenses, in addition to Operations savings inherent in the converged IP/MPLS core network.*
  - *ATM over MPLS Automated Trunking*: transports ATM/FR services over IP/MPLS core, while maintaining high quality and reliability, until now only available in ATM–based networks.
  - Navis iOperations simplifies operations and reduces Operations expense.

Solution includes Juniper M320, T-series routing platforms, Lucent CBX 500, GX 550 switches.

*Source: Bell Labs Business Case, October 2003.

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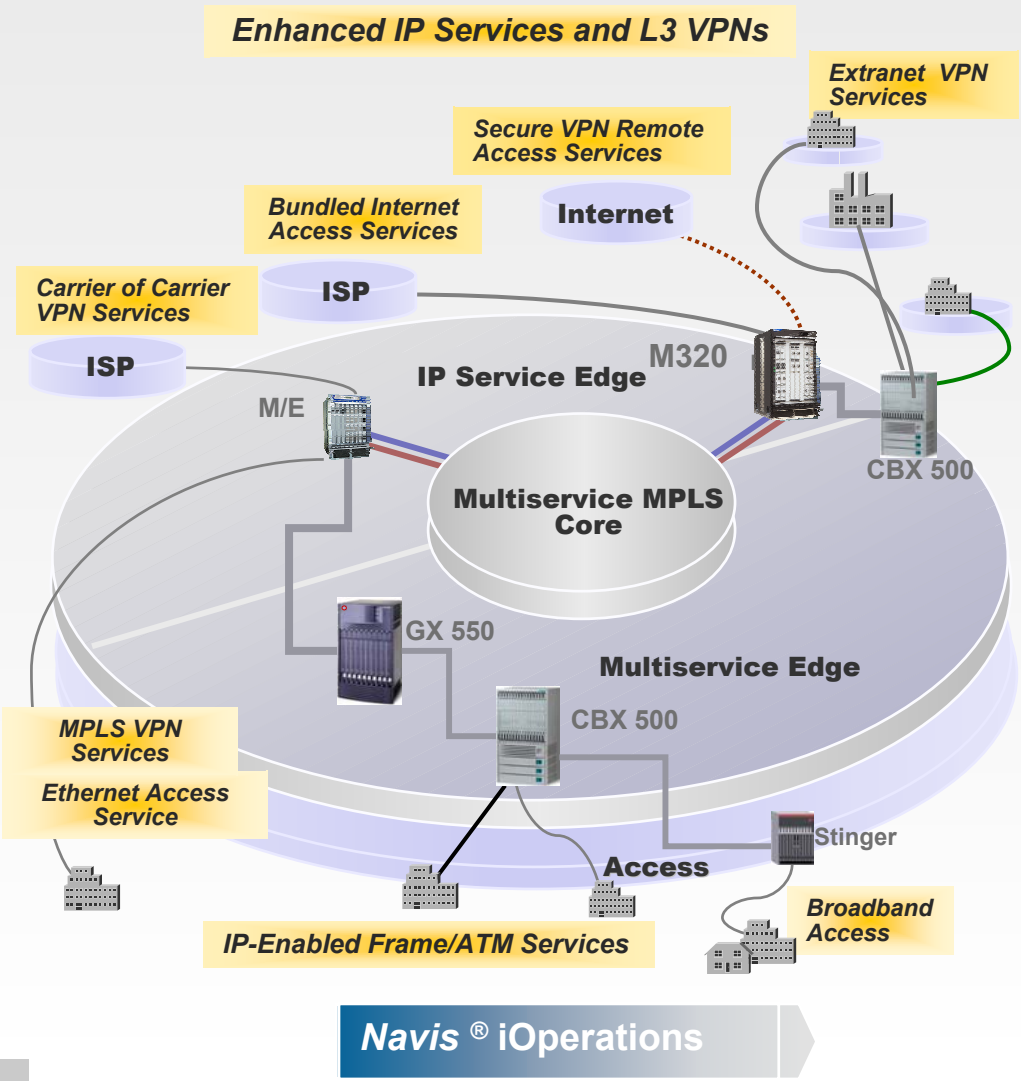
Lucent - Juniper Enhanced IP VPN Solution

Service Providers can increase revenues and reduce expenses by deploying a rich set of IP VPNs over a common IP/MPLS network.



Leverages the Multiservice network to deliver IP/MPLS VPNs

- Layer 3 VPNs with cost effective, low speed aggregation using the multiservice edge.
- Ability to add enhanced IP Services on top of basic site connectivity.
- *Navis*® iOperations to dramatically simplify operations.
  - *Navis* Provisioning Manager can save providers 80% over manual service provisioning procedures.*
  - *Navis* Fault Manager can save providers 80% in time-to-dispatch and 45% in time-to-repair, over a manual process.*

Solution includes Juniper M320 as well as E and other M-series routing platforms, Lucent CBX 500, GX 550 switches.

*Source: Lucent Lab Analysis, October 2003

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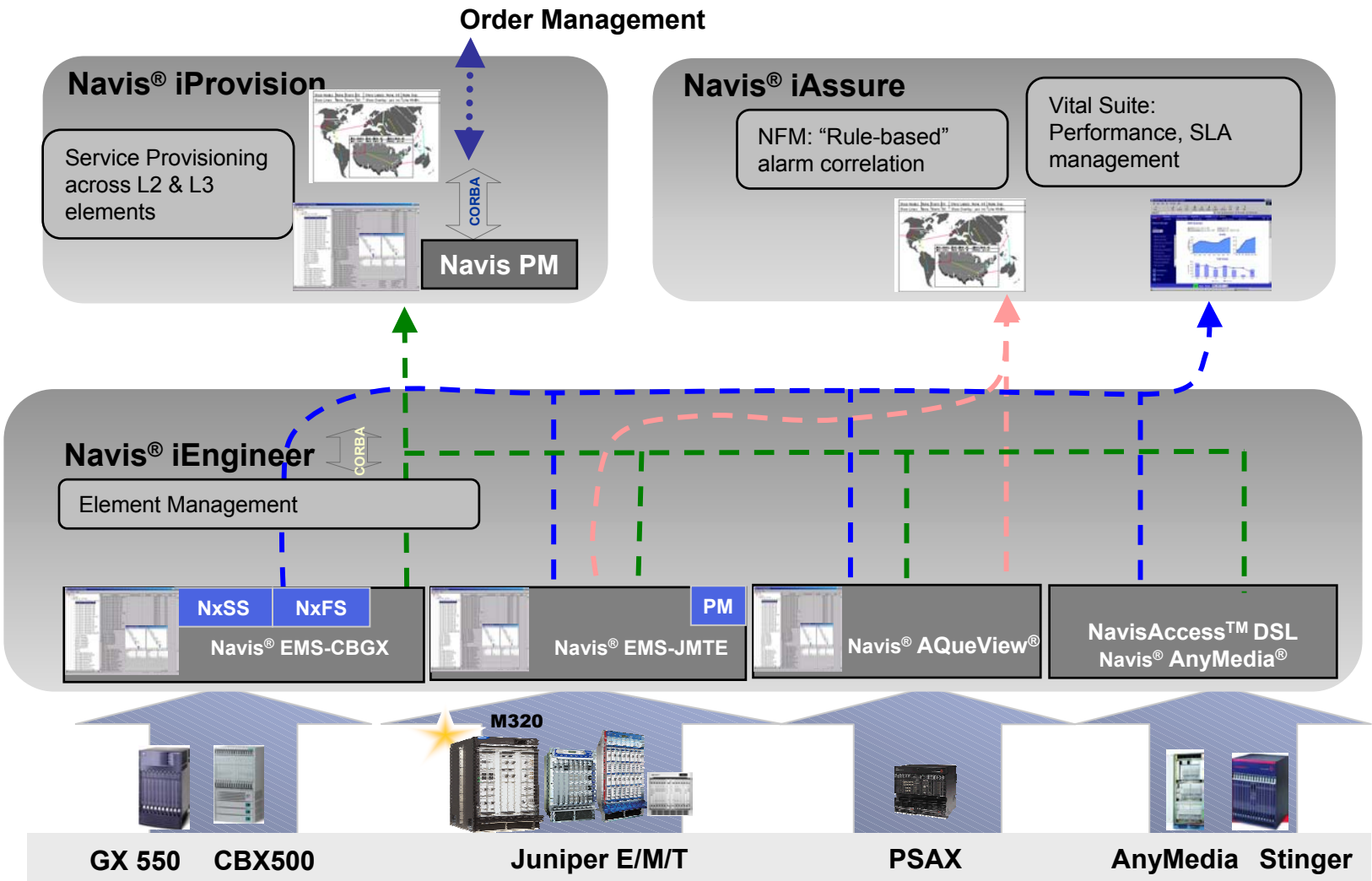
Lucent Navis iOperations OSS Software

Simplified operations, reduced cost, faster service delivery.



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Lucent - Juniper Partnership Joint Product Development

ATM to MPLS Gateway, Network-to-Network Interface

Joint Objective: further increase ATM/FR scalability and interoperability with IP/MPLS Core

- ***Improve ATM/MPLS signaling interworking, path routing and topology awareness***

- Use current IETF/MPLS Frame Relay Alliance standards
  - MPLS Core architecture (E-LSPs)
  - IETF PW data encapsulation (Draft Martini)
- New Standard objectives
  - A clearly defined interface between different administrative domains
  - Solution for the ATM reachability problem
- Lucent-Juniper alliance is leading standards effort
  - Standards work starts in the MPLS and Frame Relay Alliance
  - Will take standards to IETF, ITU-T and ATM forum for adoption

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Lucent and Juniper Partnership

Helping Service Providers optimize their networks to profit today and tomorrow.

- Lucent now offers an unmatched set of solutions, services and support for Service Provider success.
- We enable service providers to offer new, profitable services on existing platforms, leveraging existing products and technology.
  - With joint integration and testing we lower deployment risk and speed time to revenue for our customers.
  - We deliver operationally integrated end-to-end solutions, thereby speeding service delivery and reducing operational cost and complexity.
  - With Lucent Worldwide Services, we provide comprehensive professional services and support for multi-vendor environments.



- Together, we are developing next generation solutions and products that leverage Juniper leadership in IP/MPLS and Lucent leadership in Data, Voice, Optical.

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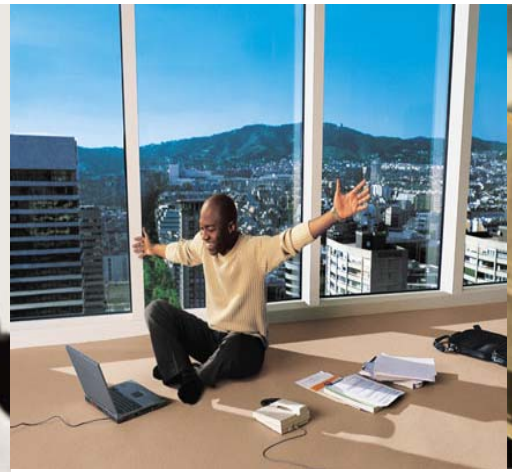


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