



Cisco Expo 2008

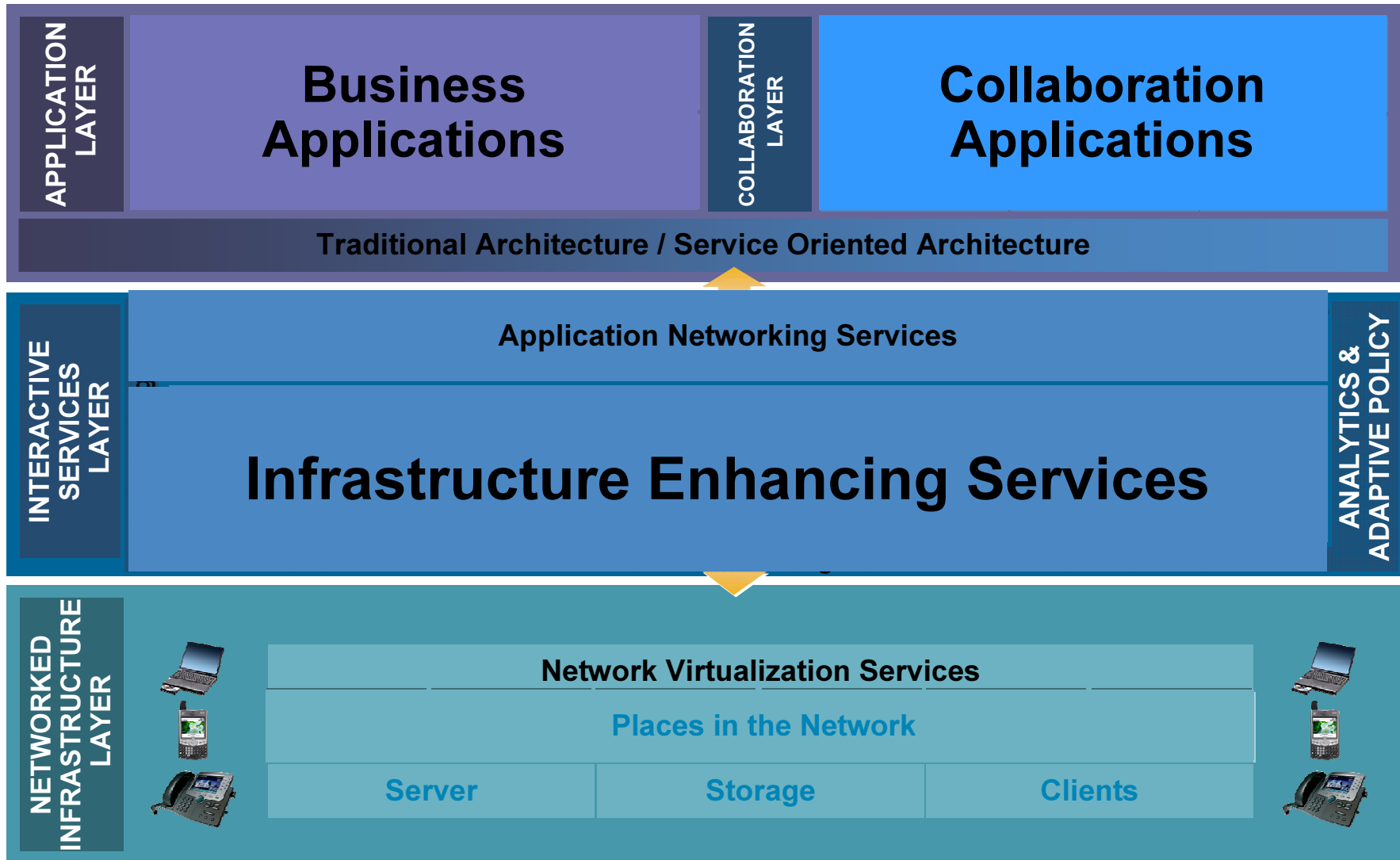
Cisco Access Routing



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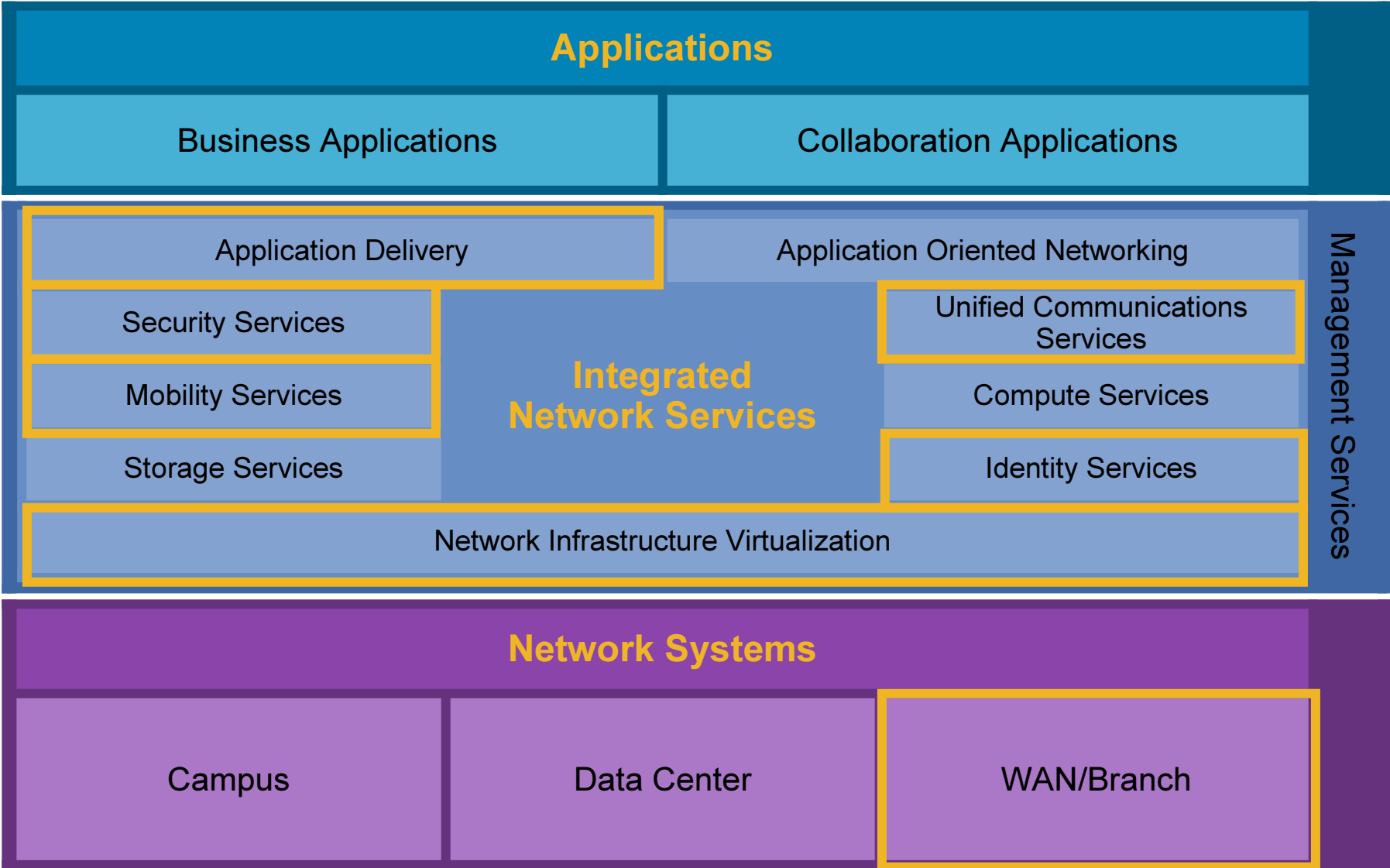


Cisco Service-Oriented Network Architecture (SONA) Framework



Service Oriented Network Architecture

Branch & WAN Service Fabric



Cisco Integrated Services Routers

The Empowered Branch

Preparing your offices for...

Your needs today,

Your plans for the future, and

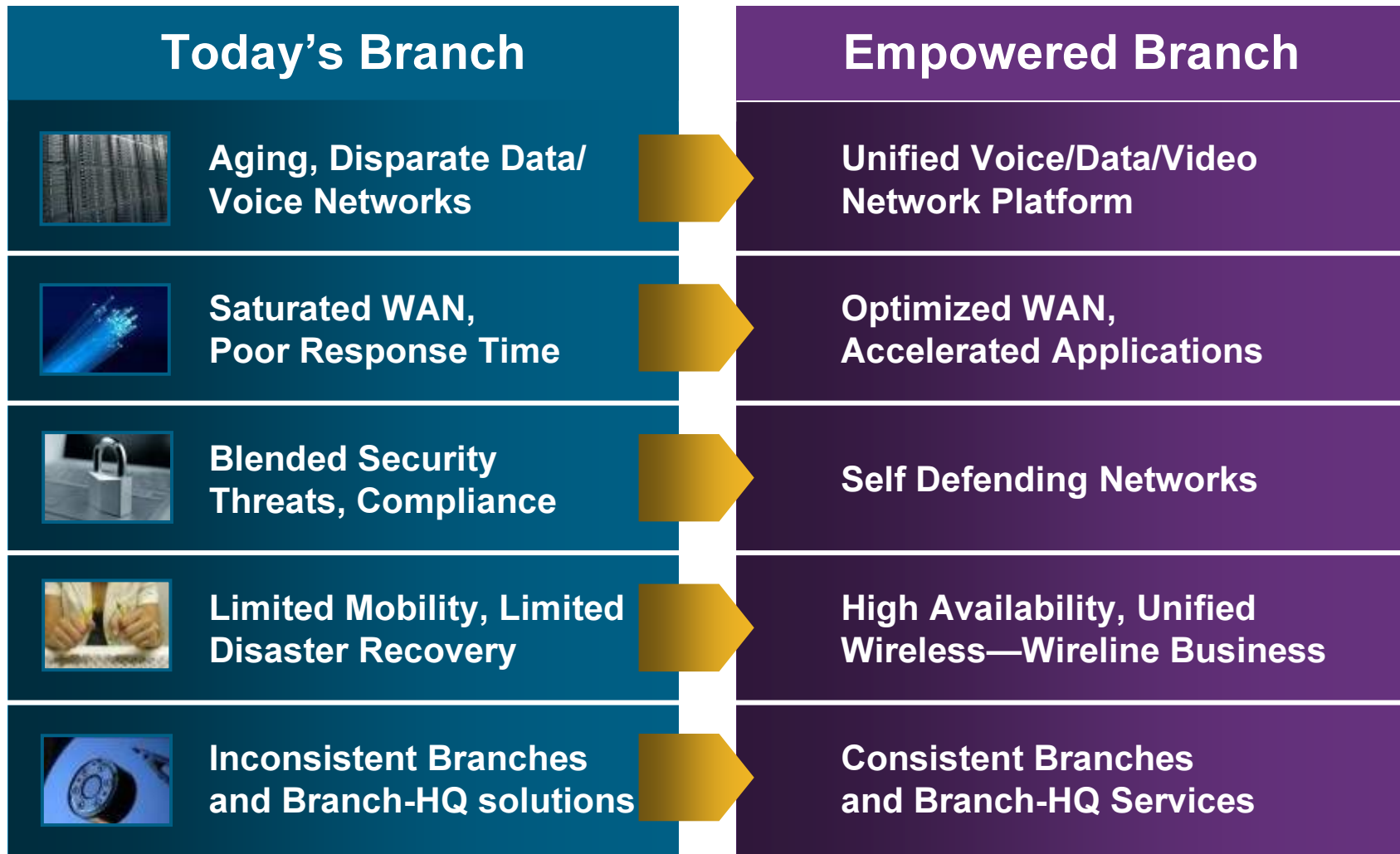
Your unexpected requirements



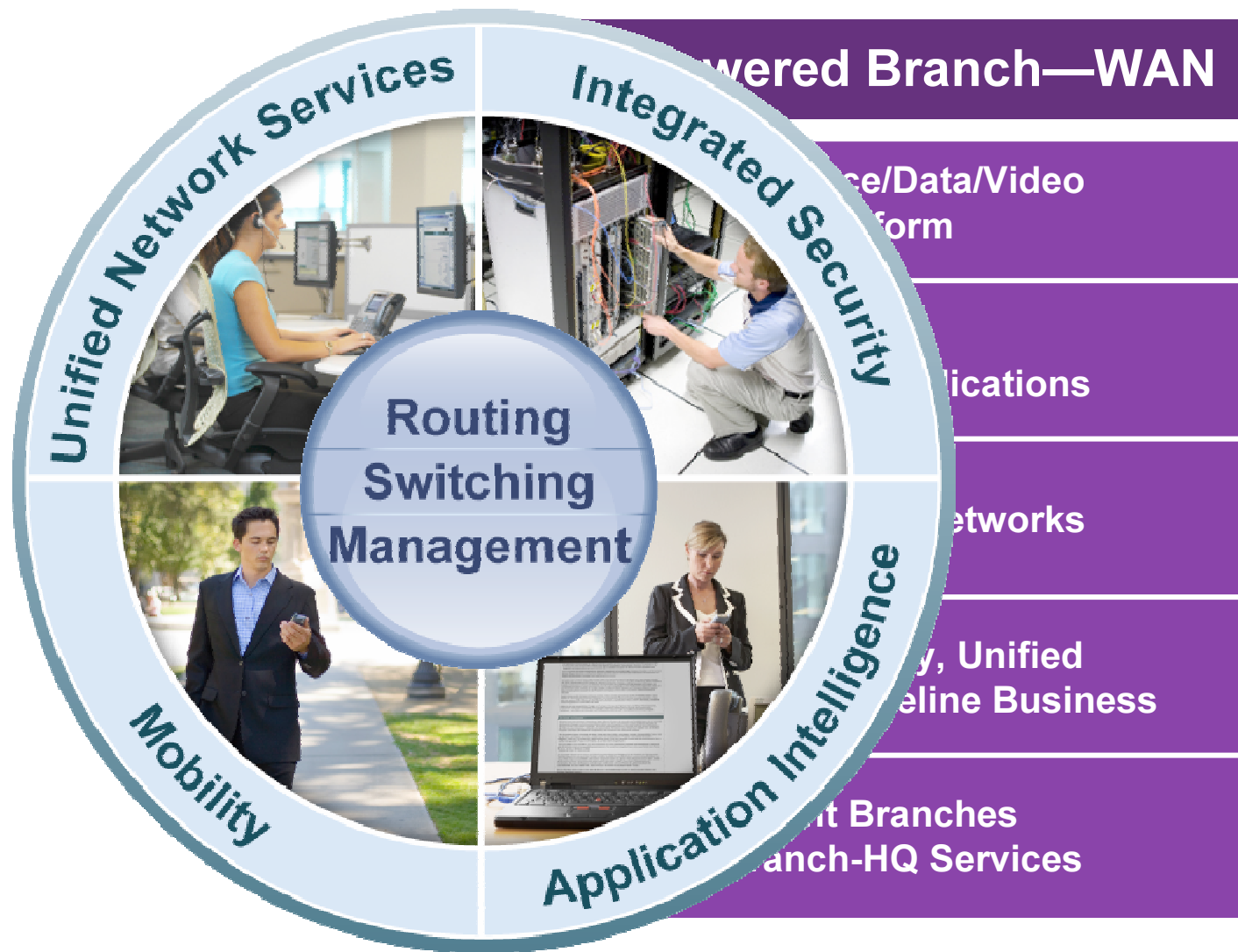
It's The Branch Time



Branch Transformation

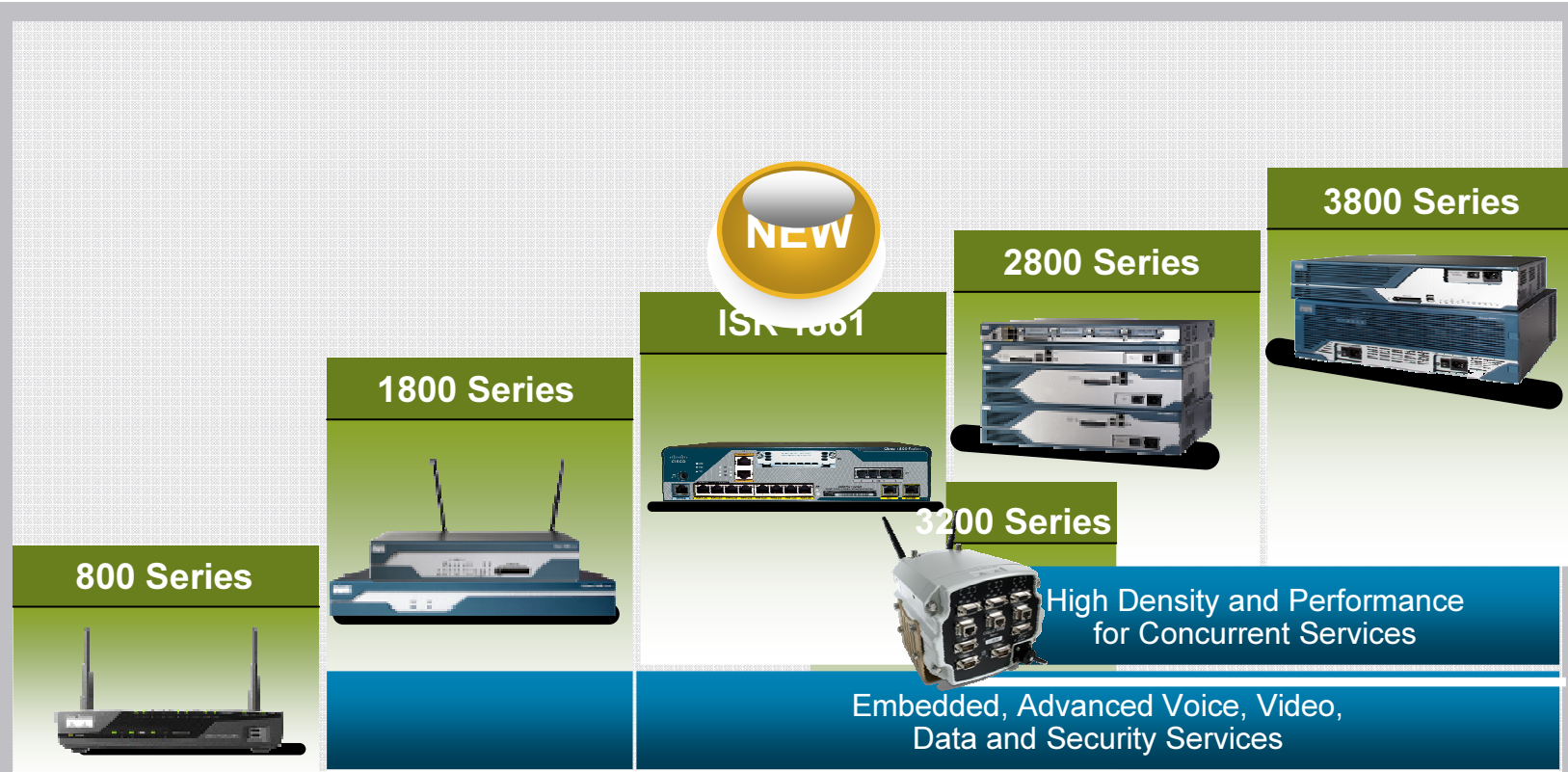


The Empowered Branch



Cisco Integrated Services Router Family

Performance and Services Density



Embedded Wireless, Security and Data			
The Integrated Services Router Portfolio			
Small Office and Teleworker	Small Branch	Medium Branch	Medium to Large Branch

Branch Application Intelligence



Maximize WAN Performance, Availability, and Resilience

- Scalable, Optimized Branch Application Performance

Wide Area Application Acceleration
High Capacity Model (NME-522)

- Qualitative, Application-Aware Best Path WAN Route Selection

Cisco IOS Performance Routing (PfR)

The WAN Is A Barrier To Consolidation

- Applications generally perform well in LAN environments as few barriers exist to application performance

High bandwidth

Low latency

Reliability

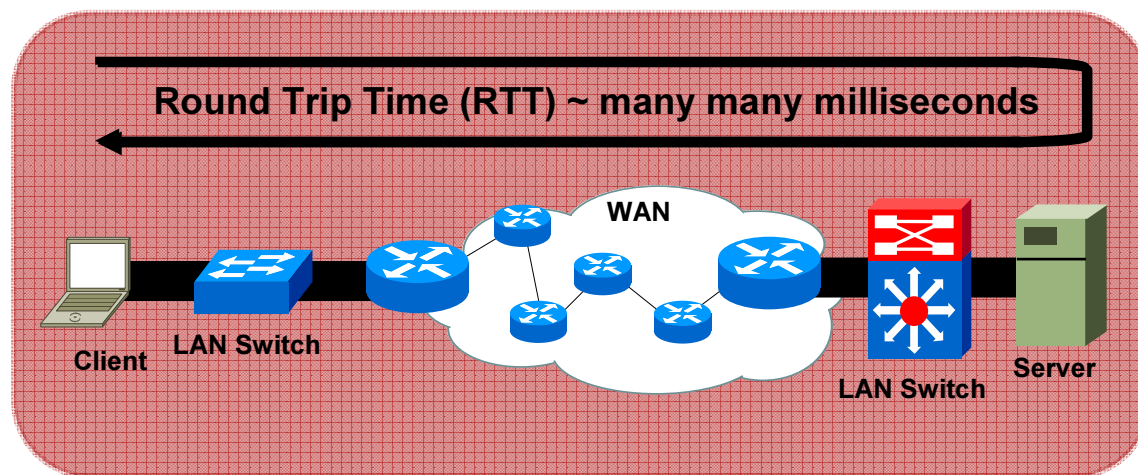
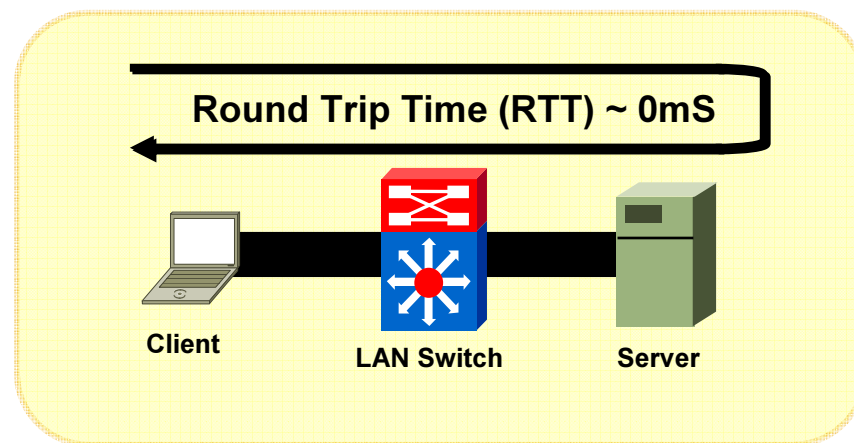
- WAN characteristics hinder performance and consolidation efforts

Already congested

Low bandwidth

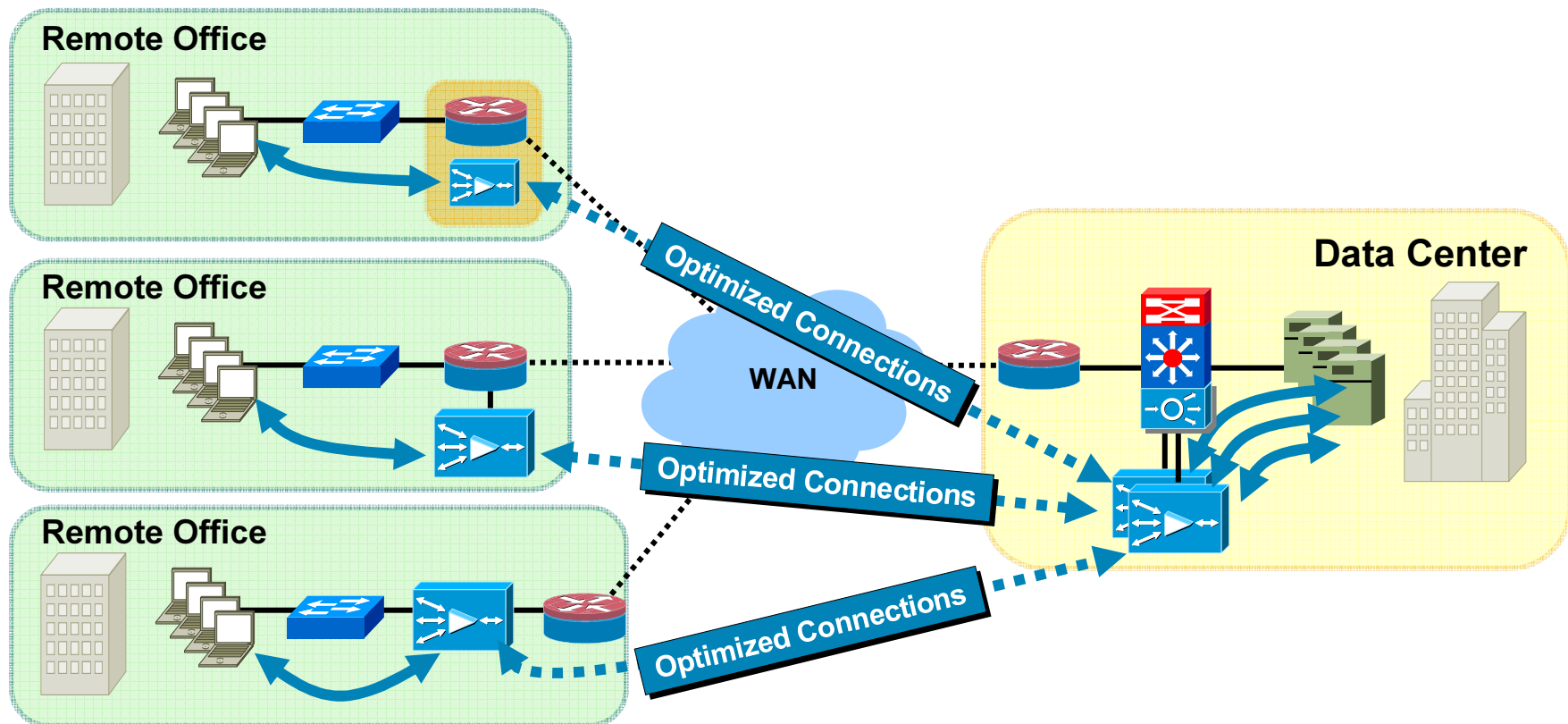
Latency

Packet Loss



Cisco WAAS - Overcomes the WAN

- Cisco WAAS is a solution that leverages a hardware footprint (WAE) in the remote office and in the data center to overcome application performance problems in WAN environments and enable infrastructure consolidation



Cisco WAAS Network Modules on Cisco Integrated Services Router (ISR)



August 2007

NEW!

NME-WAE-522-K9

NME-WAE-502-K9

NME-WAE-302-K9

Performance Scalability



UC Security PfR

Industry Leading Service Integration

- Accelerates performance of any TCP-based application delivered across a WAN

Server Consolidation

Enables consolidation of branch-office infrastructure in data centers

Application Acceleration

Provides near-LAN performance for enterprise applications

Secure WAN Optimization

Improves data protection and regulatory compliance by eliminating insecure local resources at remote offices

- NME-522 delivers Appliance-equivalent performance for ISR

Cisco WAAS - Accelerates Applications

Category	Applications	2X	5X	10X	25X	50X	100X+
File Sharing	CIFS NFS	2-20X Avg			>100X Peak		
Email	Microsoft Exchange Lotus Notes Internet Mail	2-5X Avg		20X Peak			
Web and Collaboration	HTTP WebDAV FTP Microsoft Sharepoint	2-10X Avg			100X Peak		
Software Distribution	Microsoft SMS Altiris HP Radia	2-20X Avg			>100X Peak		
Enterprise Applications	Microsoft SQL Oracle, SAP Lotus Notes	2-5X Avg		20X Peak			
Backup Applications	Microsoft NTBackup Legato Networker Veritas Netbackup CommVault Galaxy	2-10X Avg			50X Peak		
Data Replication	EMC SRDF/A EMC IP Replicator NetApp SnapMirror Data Domain Double-Take Veritas Vol Replicator	2-10X Avg			50X Peak		

* Performance improvement varies based on user workload, compressibility of data, and WAN characteristics and utilization. Actual numbers are case-specific and results may vary. Cisco WAAS can employ optimization on almost any TCP-based application.

Performance Routing (PfR)

Customer Challenges

- Deliver business critical applications
 - **Delay, Packet Loss** impair business functions
 - **Resource Contention** degrades productivity
- Eliminate business disruption from
 - **Service interruptions**
 - **Brownouts, hot spots, and black holes**
- Maximize value of WAN investment
 - **Fully utilize network diversity**
 - **Balance business cost vs. financial cost**

Performance Routing (PfR)

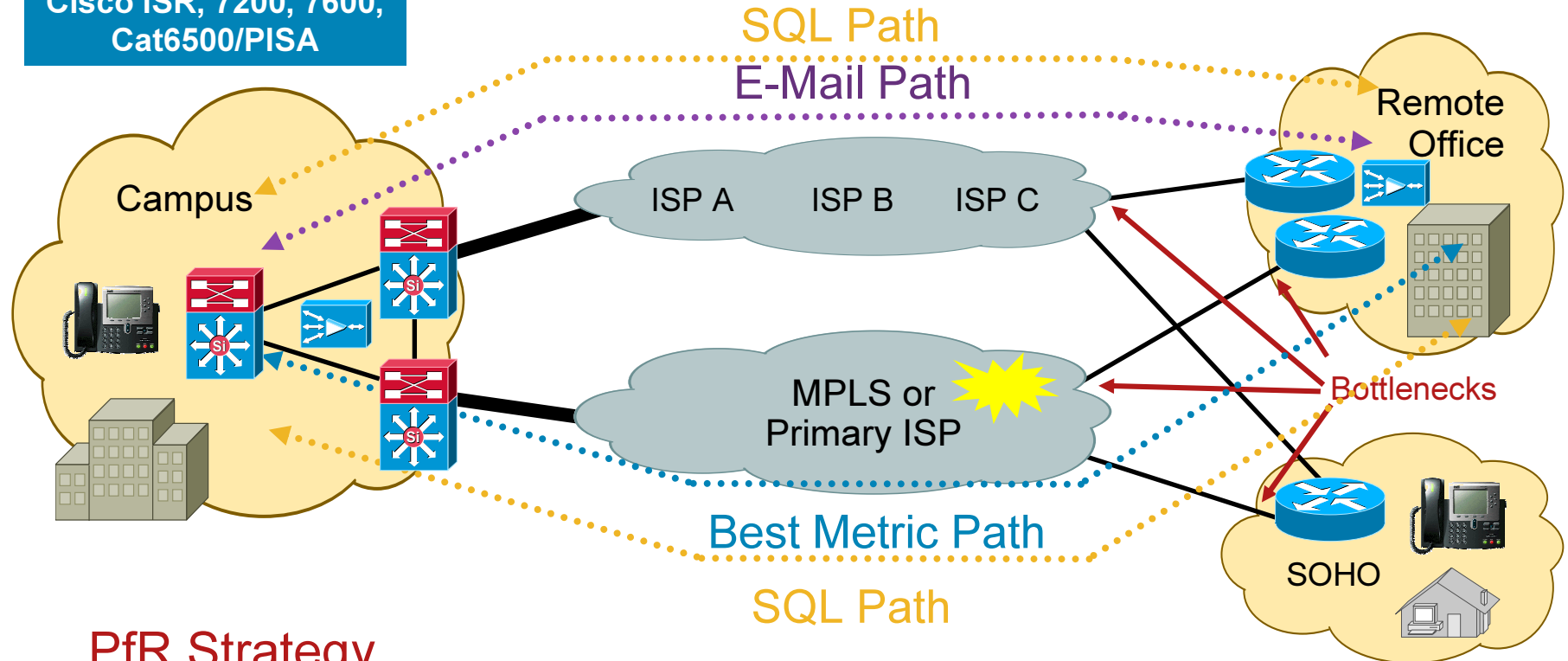
- Service-aware WAN routing engine
- **Improves network performance and availability** for business critical applications
- Leverages intelligence of Cisco IOS
- Available on Cisco 1800, 2800, 3800, 7200, and 7600 Series Routers, Catalyst 6500/PISA



Performance Routing (PfR) Enterprise WAN

Optimize by:
Reachability, Delay, Loss, Jitter*,
MOS*, Throughput, Load, and/or \$ Cost

Cisco ISR, 7200, 7600,
Cat6500/PISA

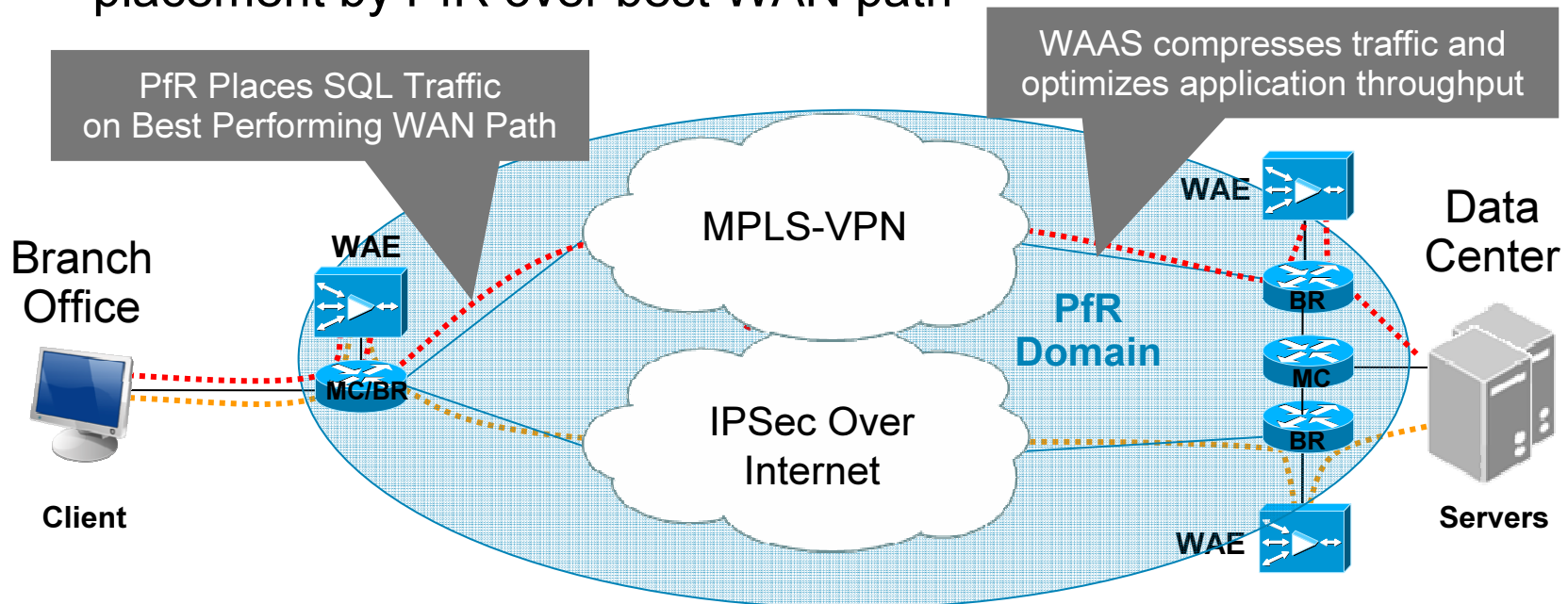


PfR Strategy

- Best path-based upon policy and real-time performance metrics
- Adaptive routing based upon application performance criteria: voice, video, mission critical apps, etc.

Adaptive WAN Optimization

- WAAS optimizes **Application Performance**
Reduction in latency and data on the wire
- PfR monitors and optimizes WAN **path selection**
Not all WAN paths are equal: latency, loss, throughput, tariffs, etc
- WAAS network transparency allows individualized session placement by PfR over best WAN path



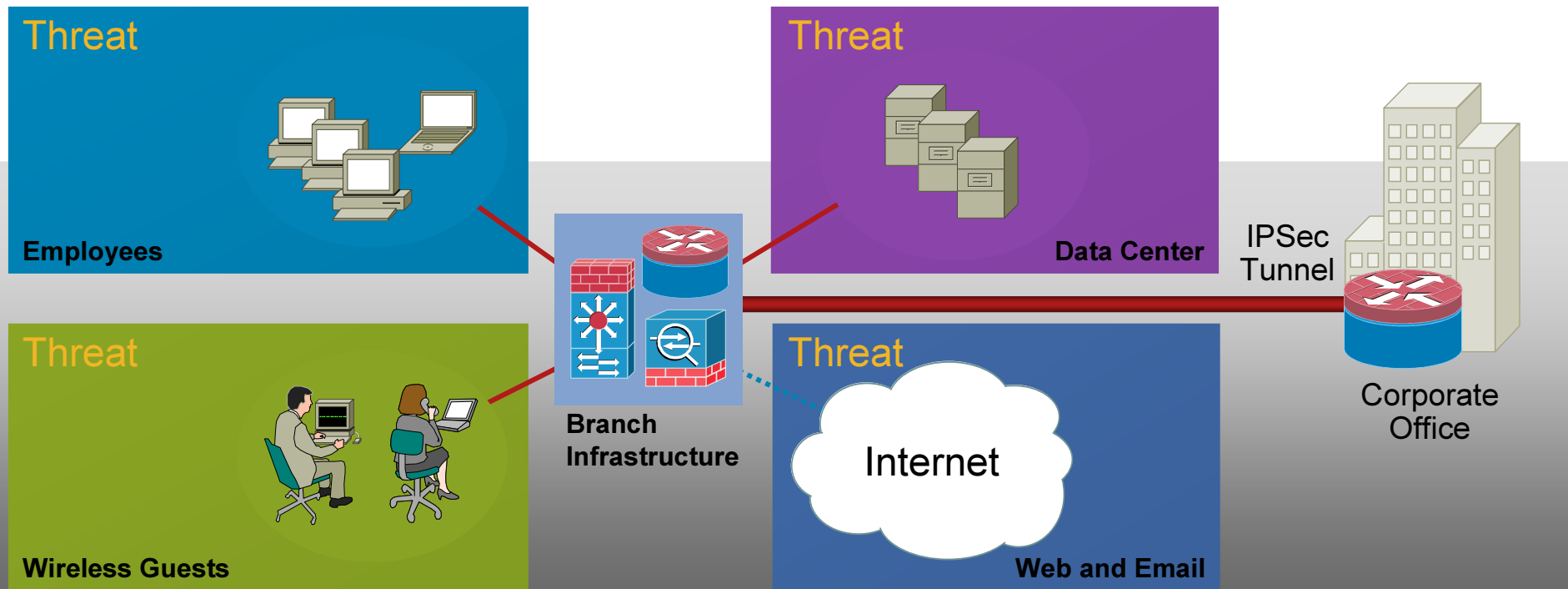
Integrated Security Service in the Branch



- Consistent End-to-End Security
- Distributed/localized network admission control
 - NAC Network Module
- High-performance intrusion prevention
 - IPS Acceleration Module (AIM)
- Operational flexibility (integrated or separated)

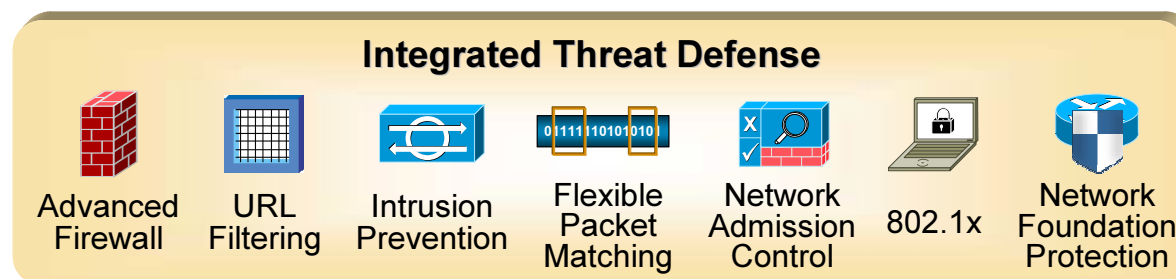
Evolving Security Requirements in the Branch

- Compliance drivers for security: PCI (Retail); HIPAA (Healthcare); Sarbanes-Oxley/GLBA (Finance)
- Split tunnels open Internet-based vulnerabilities for content threats (web and email)
- Security threats from contaminated laptops and rogue APs
- Targeted attacks aimed at sensitive information in the data center

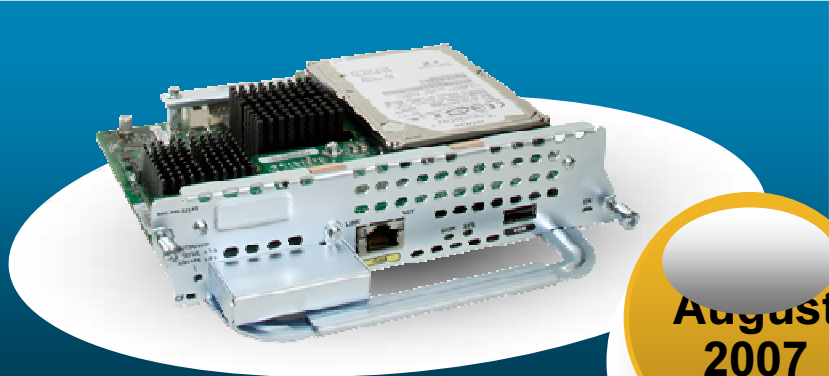


Integrated Threat Defense Summary

- Safeguard the remote LAN and servers from attacks
 - Advanced firewall, IPS, flexible packet matching (FPM)
- Defend against worms and keep the WAN clean
 - IPS, FPM, NAC, 802.1x
- Protect the router itself from hacking and DoS attacks
 - One-touch router lockdown, control plane protection, advanced firewall, IPS, FPM
- Integrated solution
 - Simplifies deployment and management (**SDM, CSM, CS-MARS**)
 - Minimizes cost of support and software subscription
- Cisco® Security Routers can satisfy a majority of PCI compliance requirements
 - Now viable to deploy firewall and IPS at remote sites



Network Admission Control (NAC) Network Module on Cisco ISR



August
2007

For Cisco 2800, Cisco 3800
Integrated Services Routers



- **Incorporates Network Admission Control (NAC) appliance server**

- Enforces security policies on all networked devices

- Assesses posture of devices (authenticate, authorize, evaluate)

- Uses network to enforce roles and access VLANs (blocks, isolates, repairs)

- Supports wired, wireless and guest users

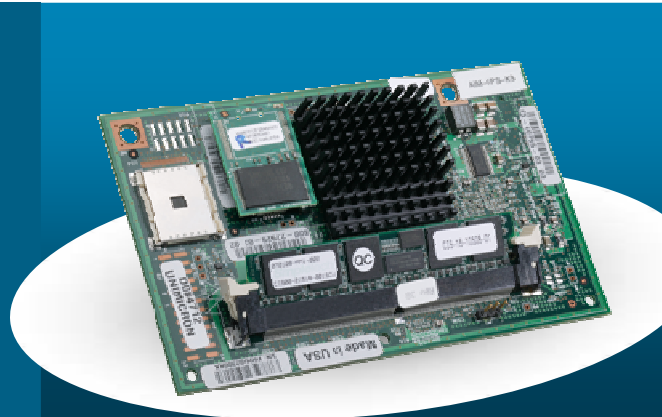
- **ISR- Integrated NAC appliance
Cisco Clean Access Server (CAS)**

- Provides size and scale ideal for remote offices (<100 users)

- Works with NAC appliances at headquarters in a network system

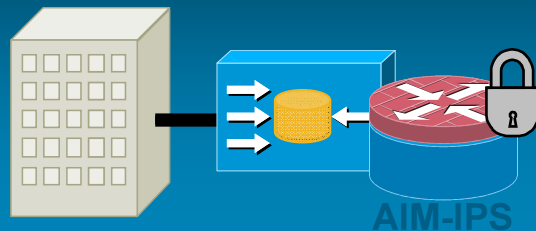
- Lower Operating Costs

Intrusion Prevention System (IPS) Advanced Integration Module



AIM-IPS-K9

For Cisco 1841,
Cisco 2800, Cisco 3800
Integrated Services Routers



Integrated Threat Control for Cisco ISR

- Enables Inline Intrusion Prevention (IPS)
- Runs same software (CIPS 6.0) and enables same features as Cisco IPS 4200
- Performance Improvement by Hardware Acceleration

Up to 45 Mbps on Cisco 3845

Dedicated CPU and DRAM to offload host CPU

Management through Cisco IPS Device Manager, Cisco Security Manager (Tentative 3.1.1)

- Supported by CS-MARS on event monitoring and correlation

November
2007

Unified Communications in the Branch

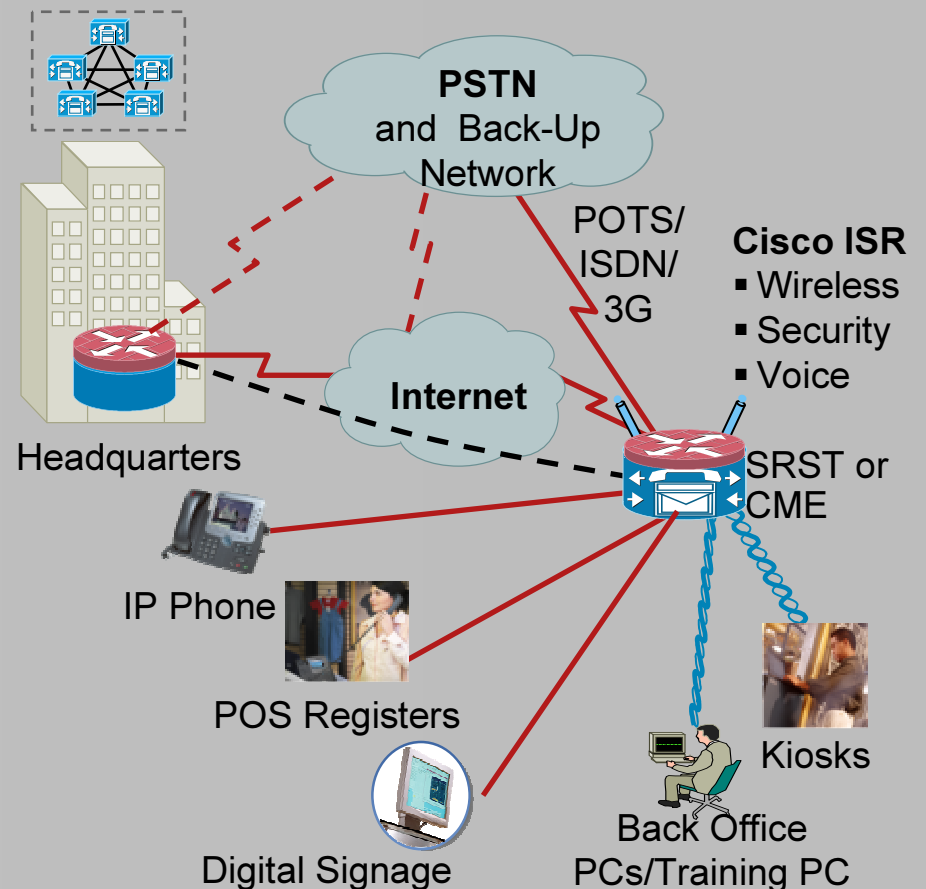


Extends and scales Unified Communications from the headquarters to the branch

- Scales and enhances local messaging capabilities
- Adds Call Center functionality to localized Call Processing
- Provides Emergency features at the Branch for enhanced availability

Cisco Unified Communications at the Branch

- Configurable IP PBX or IP Key System functionality for 240 station market
- Provides Robust Networking Across Sites 5-digit dial, SCCP & SIP Phone Support
- Built-in Basic ACD
- Integrated Video Communications & VT Advantage
- Unified Messaging with Visual Voicemail
- Automated Attendant & Dial-by-name
- Intuitive / Easy to use GUI for day two system administration
- Centralized Management for Multi-Site Scenarios options
- Small, medium, & large Branch deployments



Flexibility to Deploy Unified Communications
with a Combination of Centralized or Distributed Services

Cisco Unified Communications - Branch

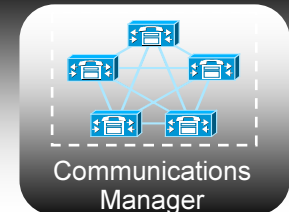
Endpoints



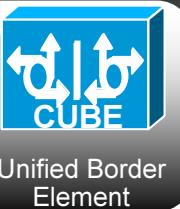
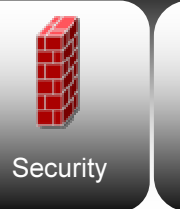
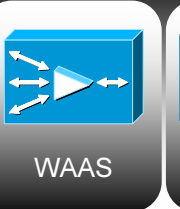
Applications



Services



Infrastructure



Slide 24

SR2

Slide #12:

Replaced CUBE icon -- white lines instead of black, in keeping with rest of the icons.
Syed Rahman, 10/18/2007

Digital Media Delivery with ACNS Network Module on Cisco ISR



September 2007

For Cisco 2800*, Cisco 3800 Integrated Services Routers



- Delivers DVD and High-Definition Video Streaming to the Branch

Live broadcast and Video-On-Demand (VoD)

Eliminate redundant video traffic

1.5 X Performance & Storage Capacity improvement

Scales digital media applications for the Enterprise

Corporate communication, eLearning and Digital Signage

- Integrates with Cisco Digital Media Systems (DMS)
- Scalable to thousands of enterprise branch offices
- Migration path for Content Engine Module

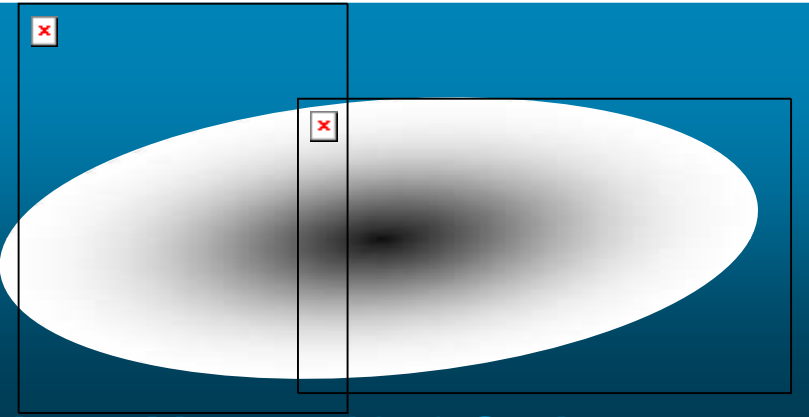
* Not included on Cisco 2801

Mobility



Cisco Next Generation Cisco ISR Wireless LAN Controller Module

Cisco Next Generation Wireless Access Points and Controllers



Cisco Aironet 1250 Series

For Cisco 2800*, Cisco 3800 Integrated Services Routers

2007



Delivers next generation wireless with Wi-Fi certification for 802.11n draft 2.0

- Robust support for bandwidth intensive applications
- Increased reliability for diversity of wireless data, voice and video

Backwards compatibility for all devices in the branch (11a/b/g & n)

Enhanced branch security with integrated wireless intrusion detection

Delivers investment protection for the branch office

Platform modularity

Field upgradeable

* Not included on Cisco 2801

Cisco 3G Wireless WAN HWIC

The Cisco 3G Wireless WAN HWIC provides a cost-effective alternative to ISDN dial back up and provides Business Continuity for critical applications

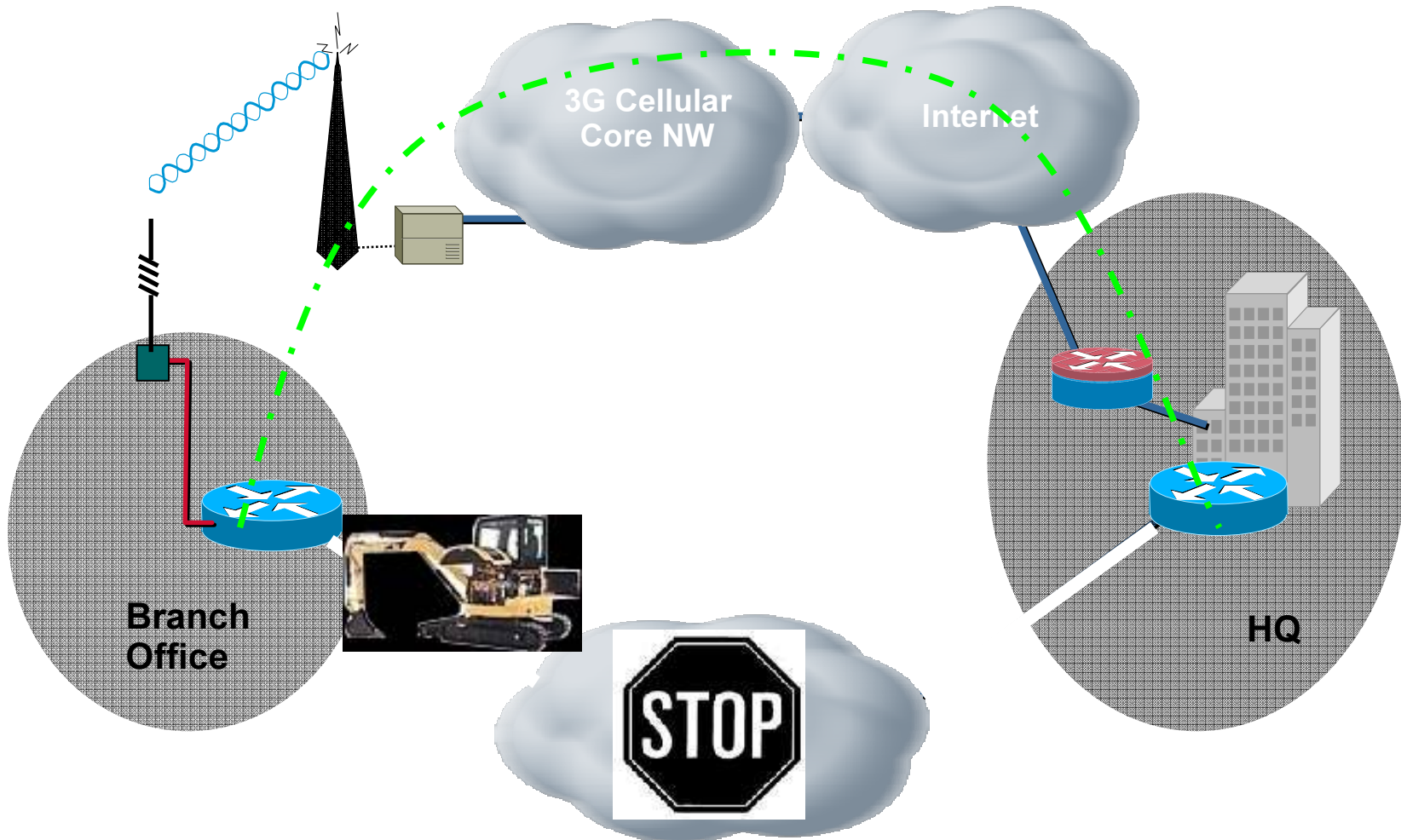


3G Wireless HWIC offers:

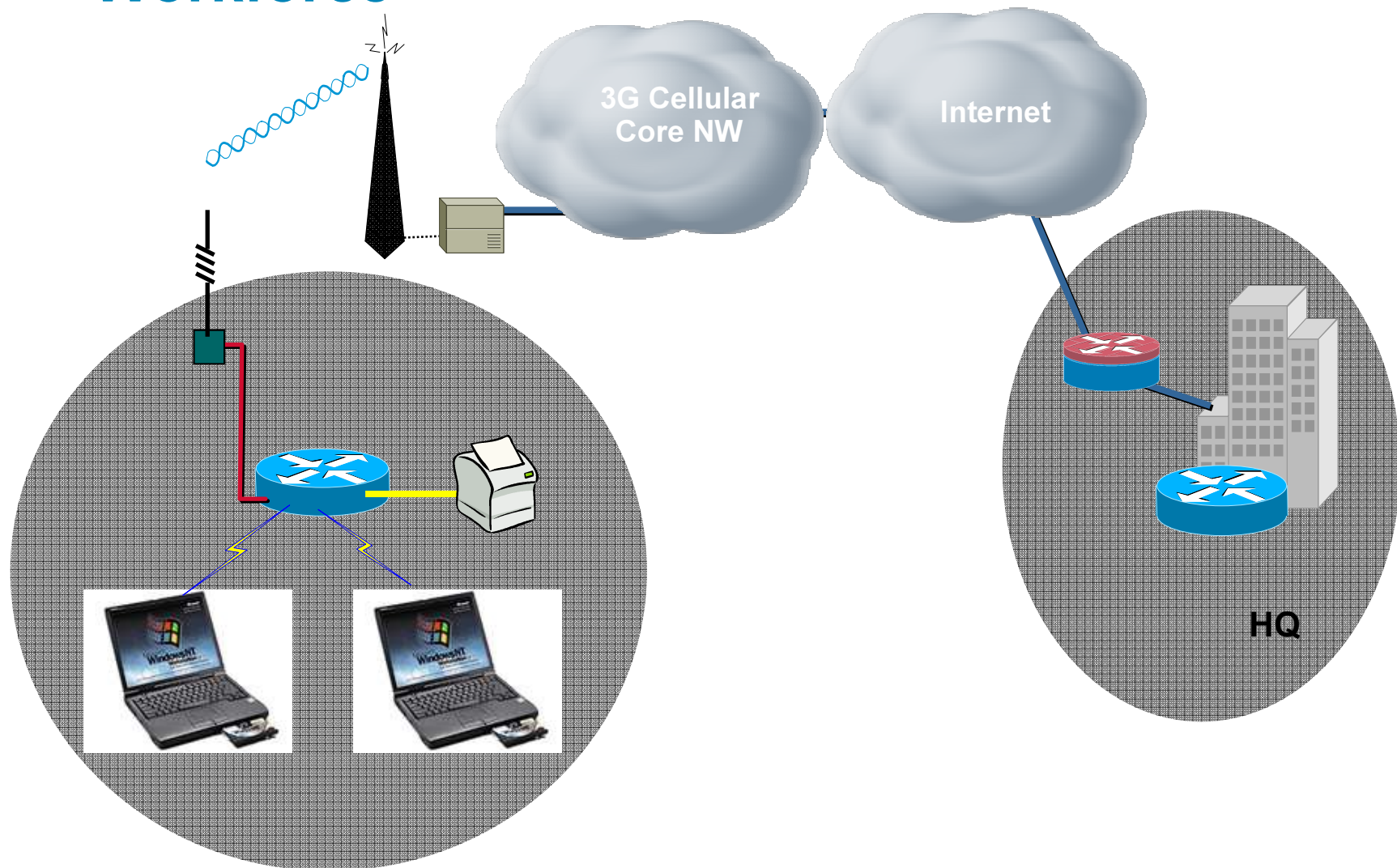
- Broadband Speeds
- Ease of management
- WAN Diversity
- Rapid Deployment
- Leverages ISR features

- Offers Broadband data rates up to 3.2 Mbps with EVDO and 3.6 Mbps with HSDPA*
- Supports CDMA and GSM/UMTS standards (EVDO Rev A / HSDPA)
- Target Applications – WAN Backup, Rapid Deployment, Portable Applications
- Supported on Cisco 1841 / 2800 / 3800 Series Routers
- Embedded mini PCI express Cellular modem from Sierra Wireless
- Modem firmware is upgradeable, it is not bundled with IOS
- Multiple external antenna options for in-building deployments

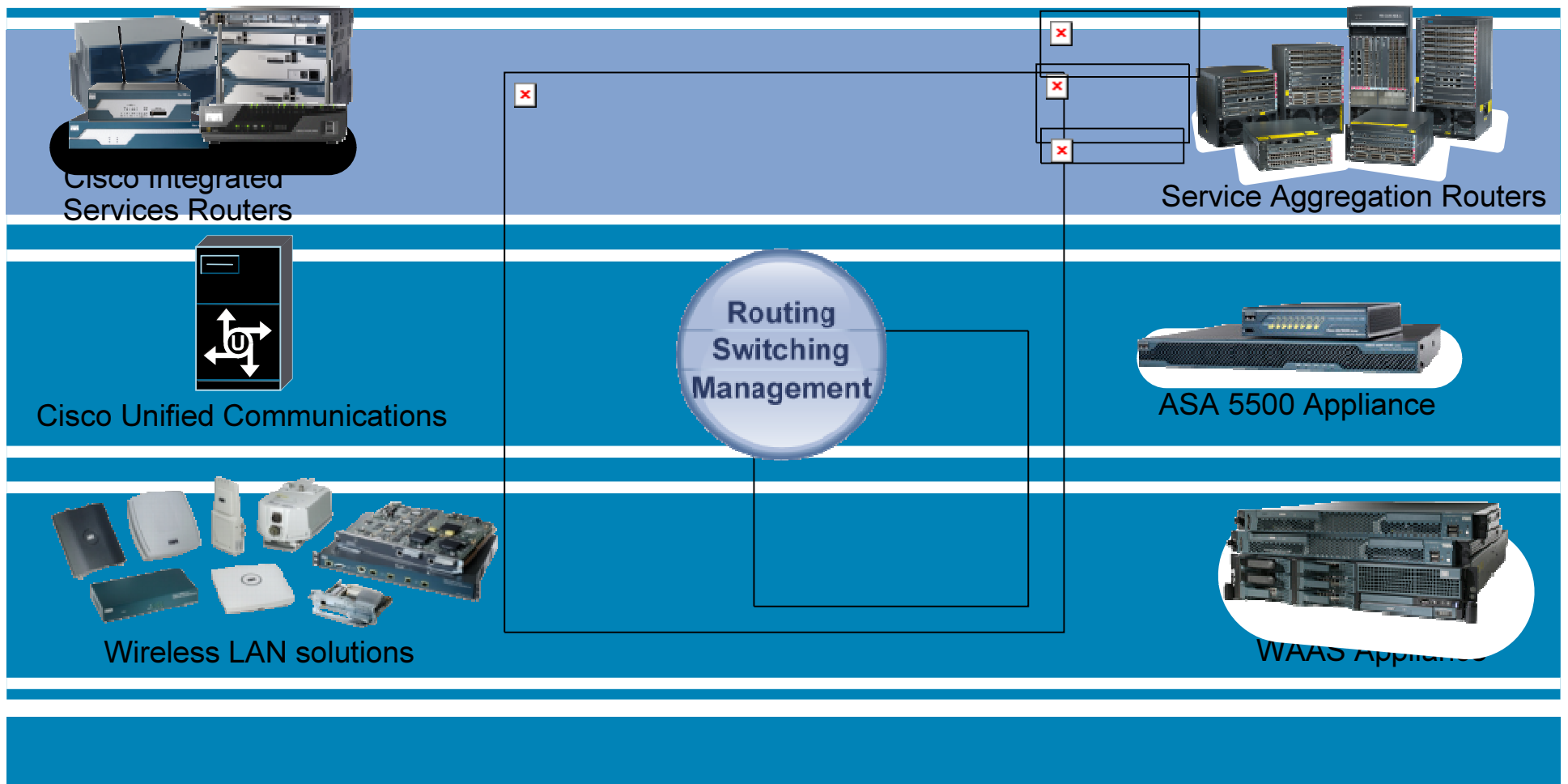
Architecture; Wireless WAN Backup scenario



Architecture; Wireless Secure Broadband Connected Mobile Workforce

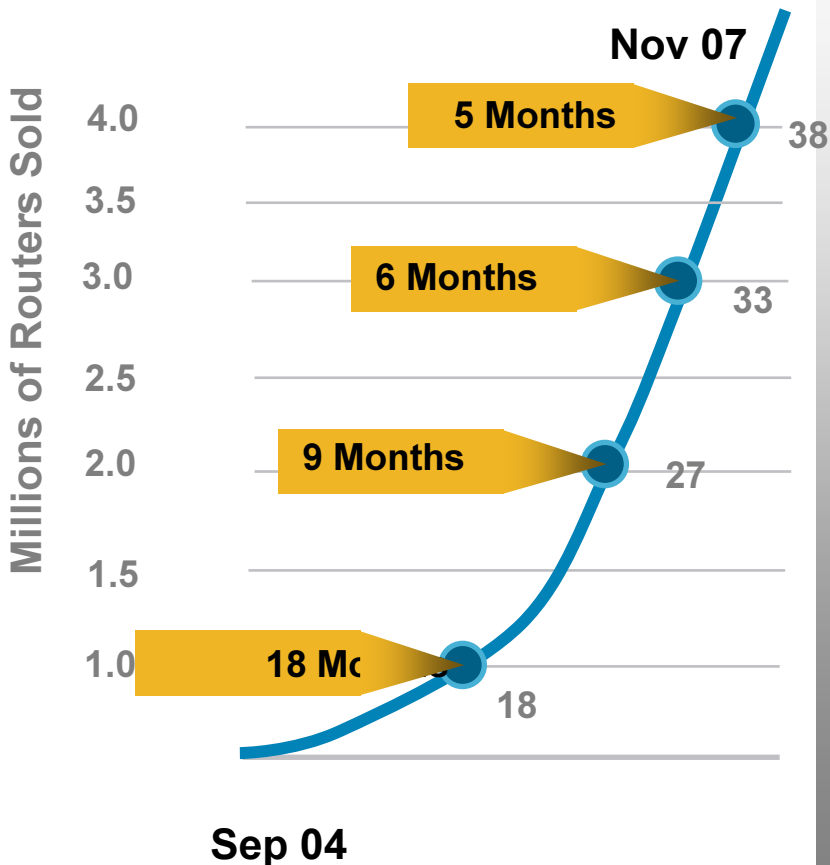


No Branch is an Island

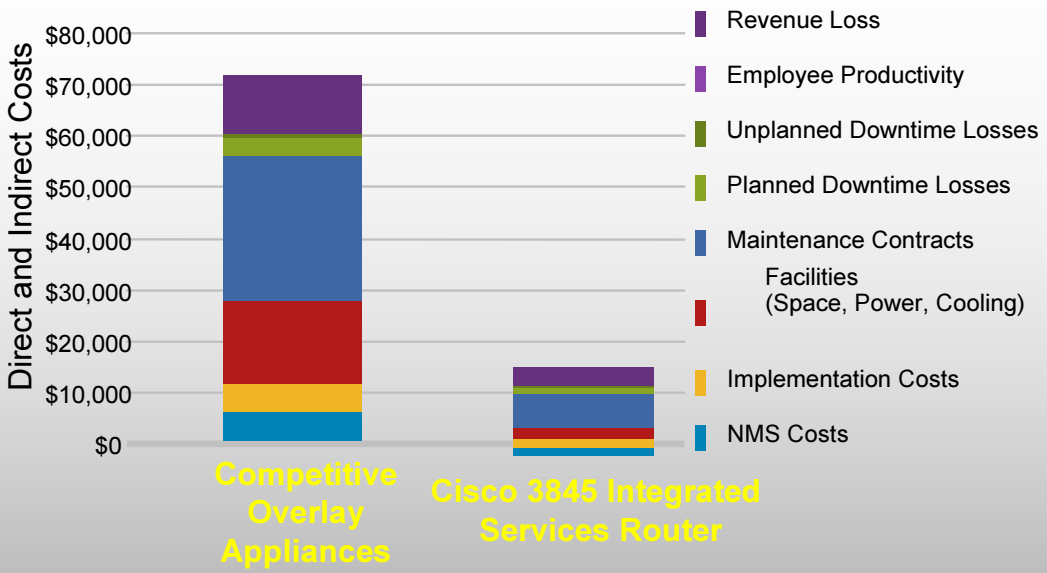


Market acceptance for integrated services

Four Million Routers Sold !



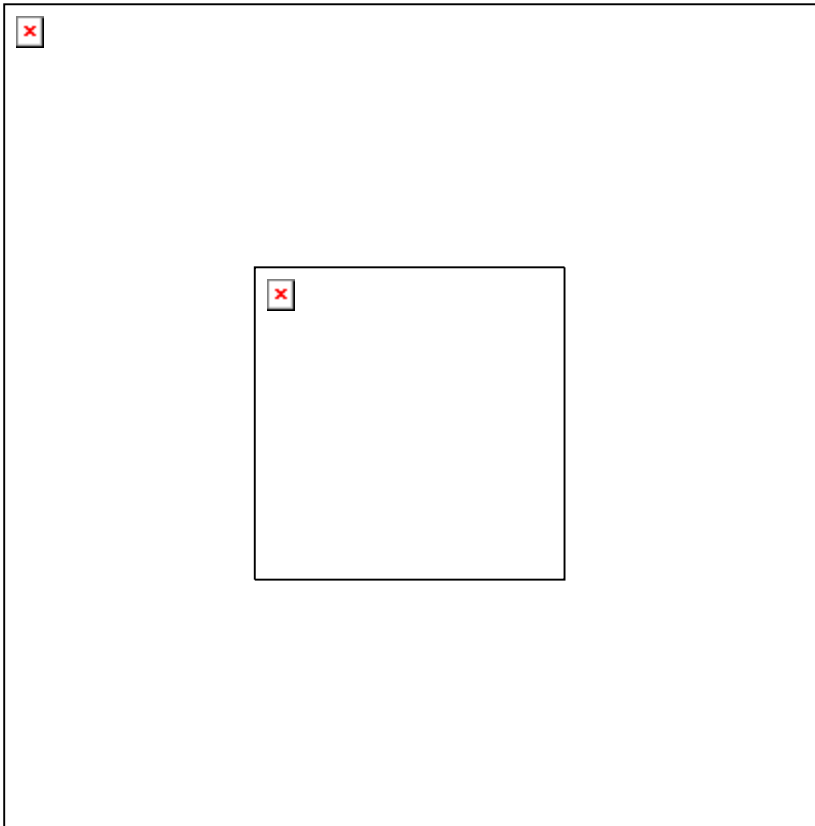
Total Cost of Ownership



Cisco ISR Service Integration - Up To 70% OpEx Reduction

- Service Interoperability
- Operational Efficiency
- Systems Support
- Investment Protection

The Empowered Branch - Summary



More integrated services and applications

Service innovation, continuously added

Optimized WAN, services, and applications

True WAN flexibility

High availability and resiliency

Investment protection

Q and A



www.cisco.com/go/branch
www.cisco.com/go/isr

