



IP NGN:
Service Exchange
Framework Solutions



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Cisco Expo

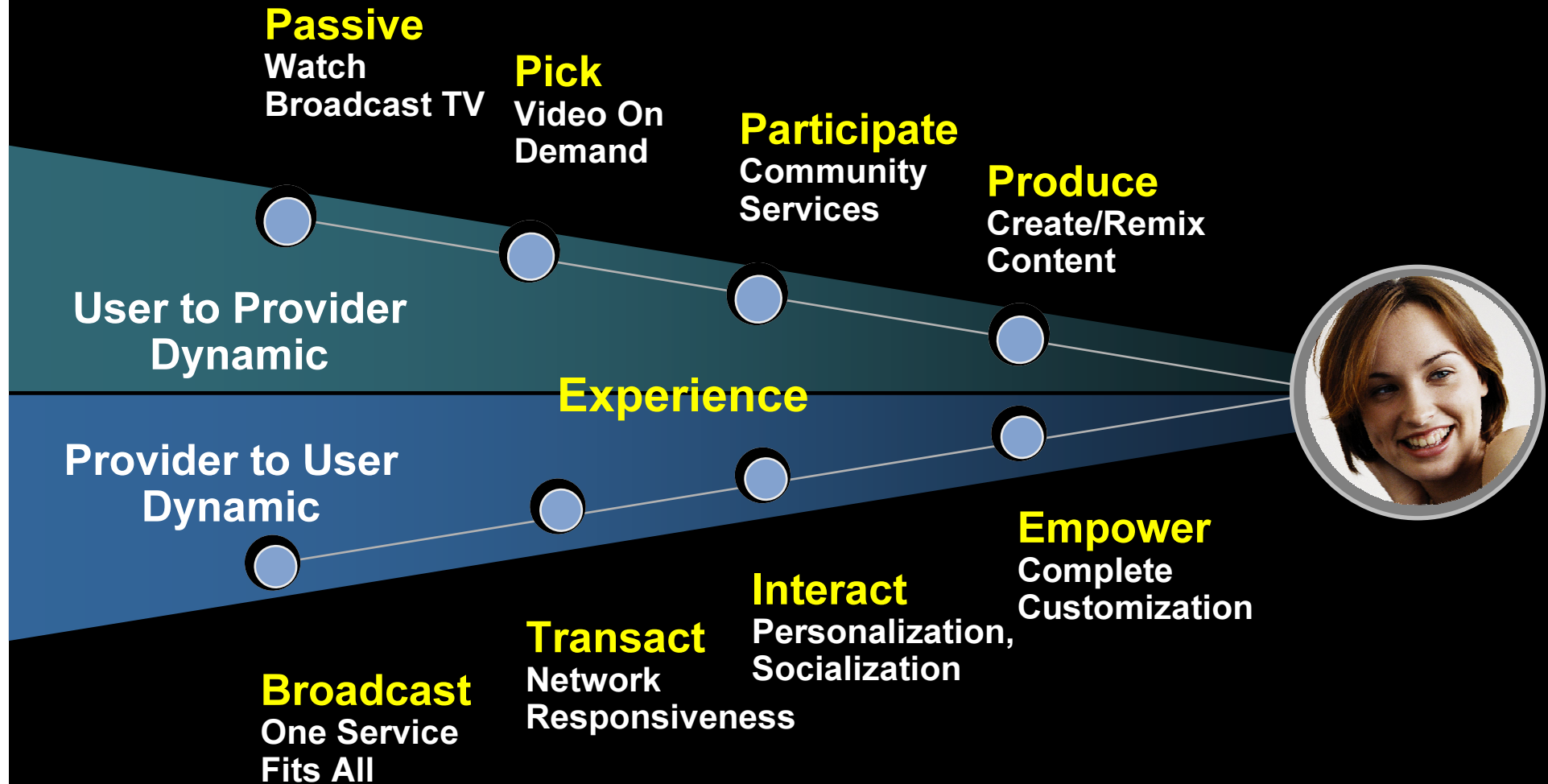
Tunis, 22 Avril 2008

Agenda

- **Service Delivery Challenges and Requirements**
- **The Cisco Service Exchange Framework (SEF)**
- **IMS/TISPAN Context**
- **Pragmatic SEF Solutions and Services**
- **Summary**

The Rise of the Empowered Customer

Evolutionary Phases of Experience



Service Provider Perspective on Value-Added Services



“ Our business model is collapsing because **people don't want to pay for phone services** anymore. But oddly enough, **consumers are willing to pay for other value-added services**, so that's what we have to offer them. The world is changing faster than ever. We have to be ready.”

Didier Lombard
CEO
France Telecom

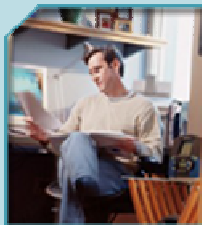
Wall Street Journal
May 4, 2006

Creating a Multitude of New Service Opportunities...

Example: Residential Broadband Services

Integrated Networks, Content, and Entertainment Services to Move Up the Value Chain with the Customer

Teleworker/
Home Business
~\$70/Mo



Wireless Security
~\$30/Mo

Gaming ~\$7/Mo

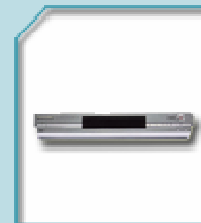
Local and
Long Distance
Voice
~\$40/Mo



Residential
Broadband Access
~\$30/Mo

Home Net ~\$10/Mo

Digital Music
~\$10/Mo



NetPVR
~\$10/Mo

Video and xVoD
~\$50/Mo

Enabled by a Cisco IP NGN Entertainment Grade System

A World of Agile Attackers and Potential Partners

Value Chain



Over-the-Top Providers (OTTP)

Value-Add Partners or Disintermediators? Or Both?

Drivers of Collaboration

- Access to OTT Services and Applications **drives penetration of consumer broadband**
- Time Sensitive Applications like Video and Voice **create opportunities for Guaranteed delivery**

The *Walt Disney* Company



Google™ **ESPN.**

VONAGE
THE BROADBAND PHONE COMPANY®

Drivers of Competition

- OTT Communications Providers like Vonage, Skype, Google Talk... represent **Service Substitution and Pricing threats** to Traditional Voice
- OTT Content Providers like Disney and CinemaNow are looking for opportunities to use The Internet **as a means to disintermediate video distribution businesses**

Intelligent and Secure IP Networks

Create New Service Opportunities and Increase ARPU

Walled Garden Portal

Subscriber Self-Care
Portal and Accounting

Pre-Paid Services
(Volume, Time...)

Turbo Button

Protocol Restriction
(No IPsec)

TCP Session Limits

Per-User Firewall

Peer-to-Peer
Traffic Marking

Virus Filtering

Traffic Pattern
Analysis

User-Based Billing

Export Data Format
for Billing Services

Integrated to
Third-Party Billing

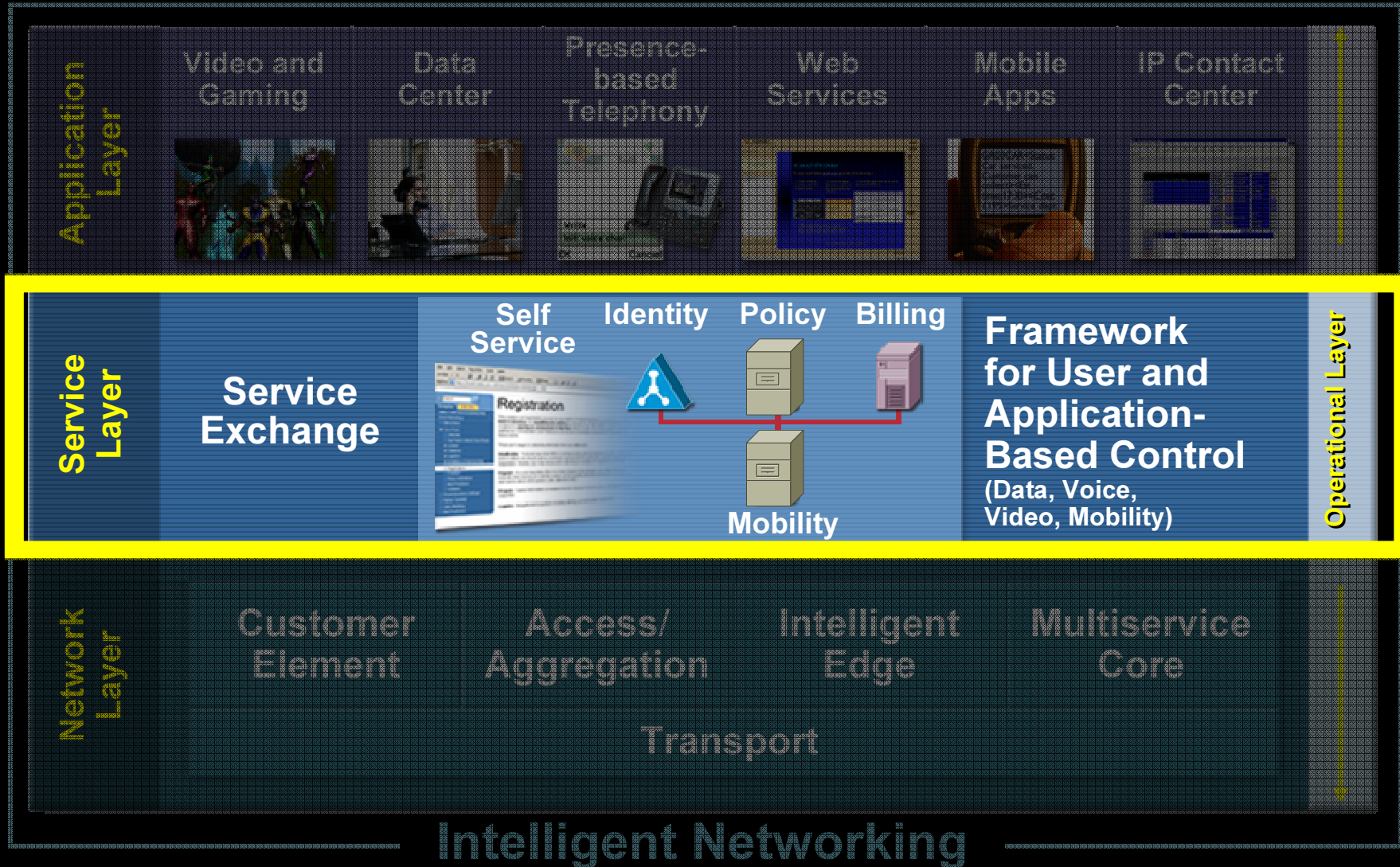
SLA Monitoring
and Reporting



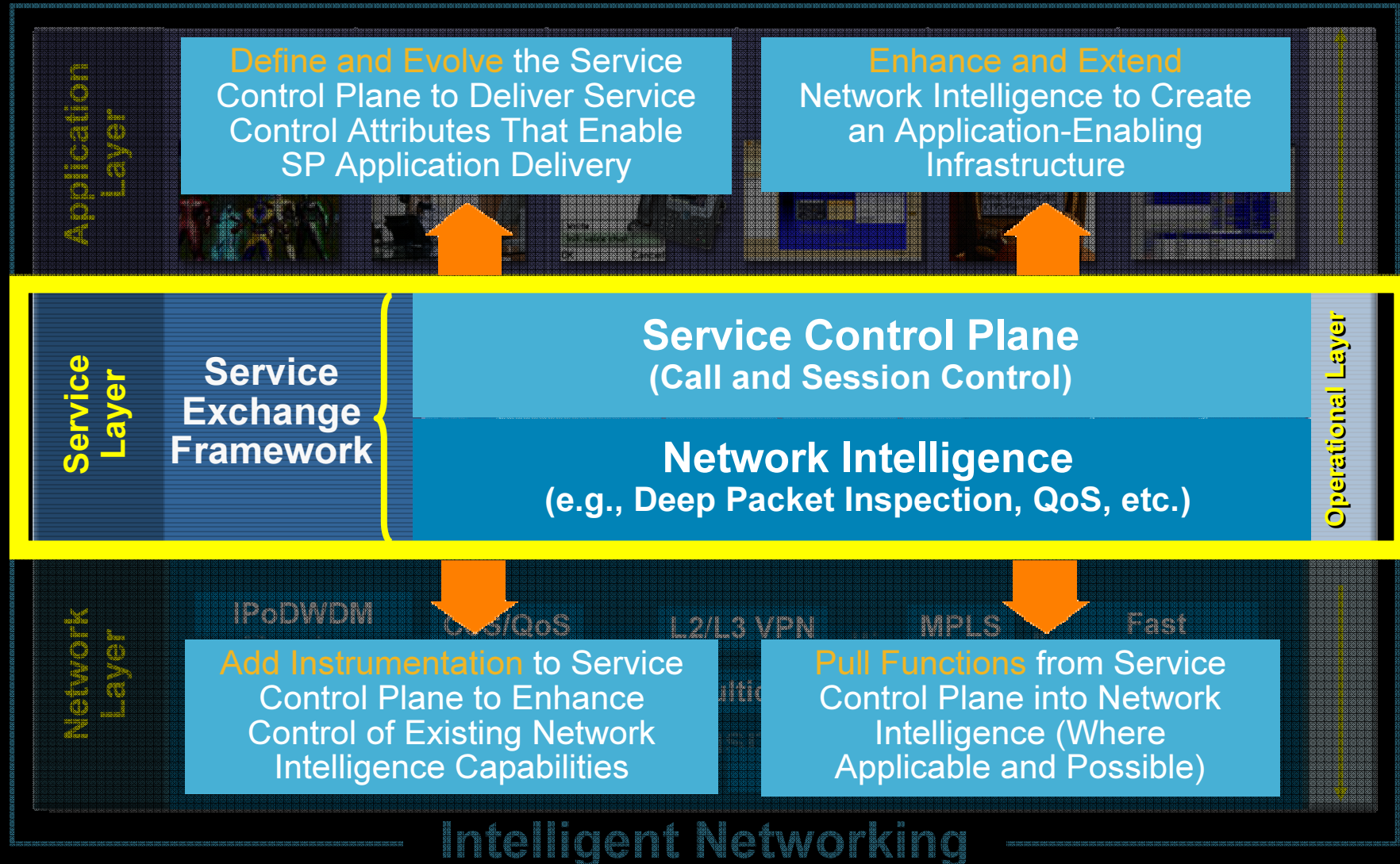
Revenue-
Generating
Services

Cisco IP NGN Service Exchange Framework

Enabling Better Service Control and Awareness



Service Exchange Framework: Two Sub-Layers to Defend and Extend Franchises



IMS Gaining Prominence Beyond 3GPP: Concept Used Across Segments

Mobile



Since 1999

3GPP ⇒ IMS
3GPP2 ⇒ MMD

Wireline



Since 2004

ITU ⇒ ITU SG13 NGN
ETSI ⇒ TISPAN
ATIS ⇒ NGN

Cable



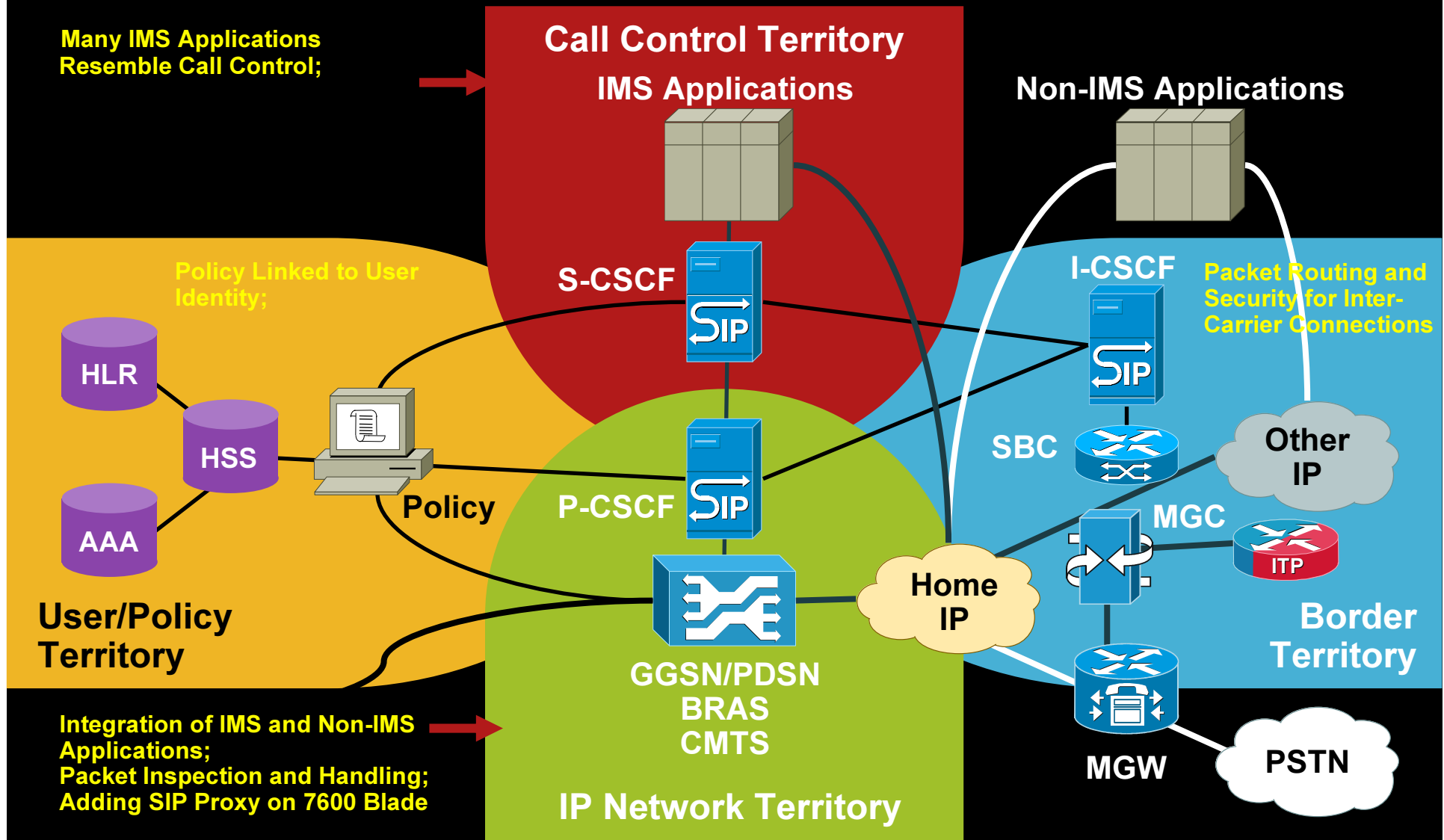
Since 2005

CableLabs ⇒ PacketCable 2.0

IETF Protocols ⇒ e.g., SIP, Diameter...

**Many Efforts, Dynamically Evolving,
but All Focused on SIP**

IMS "Territories" of Focus

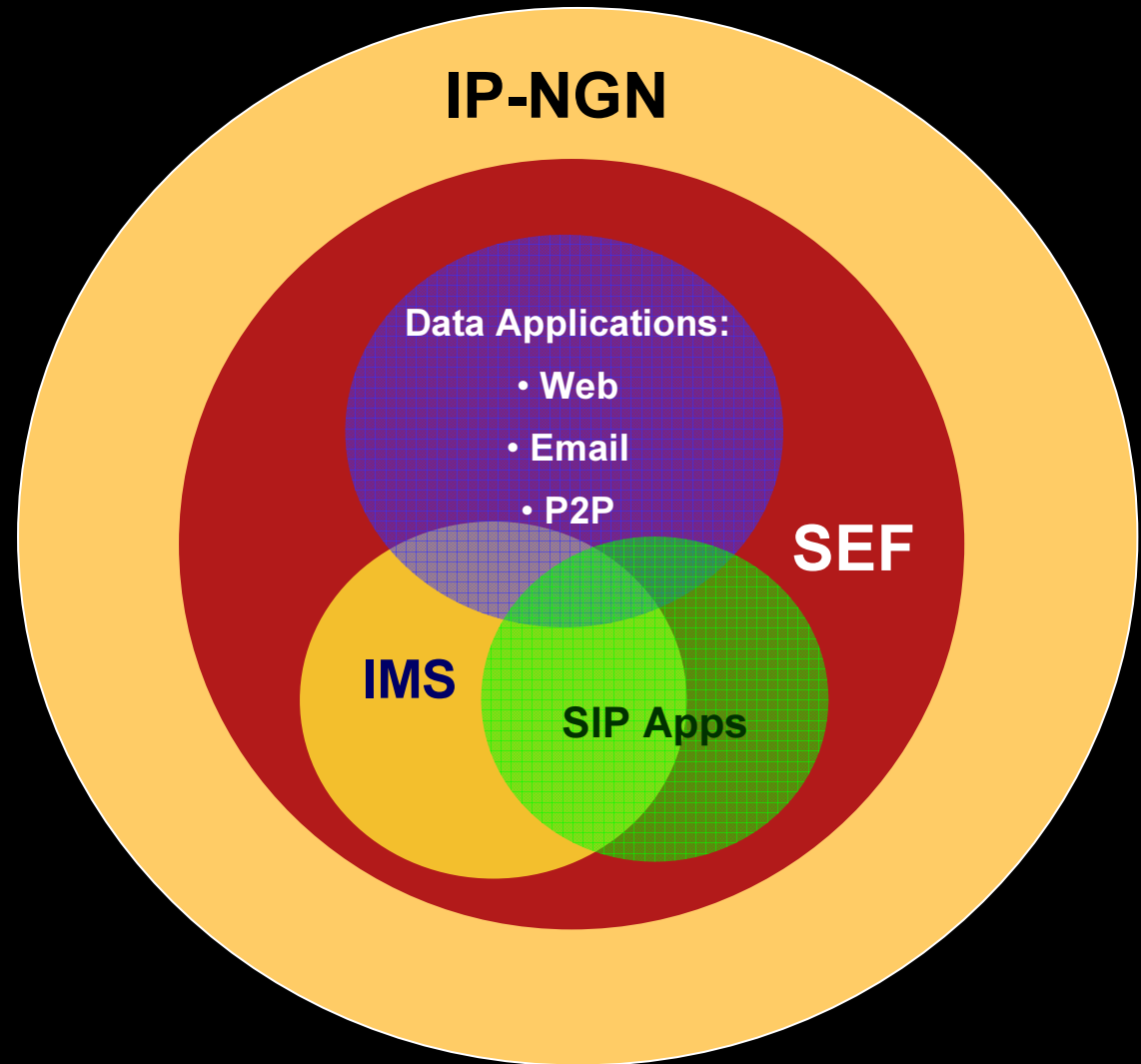


IP-NGN, SEF and IMS

- IMS introduces a new breed of SIP based services

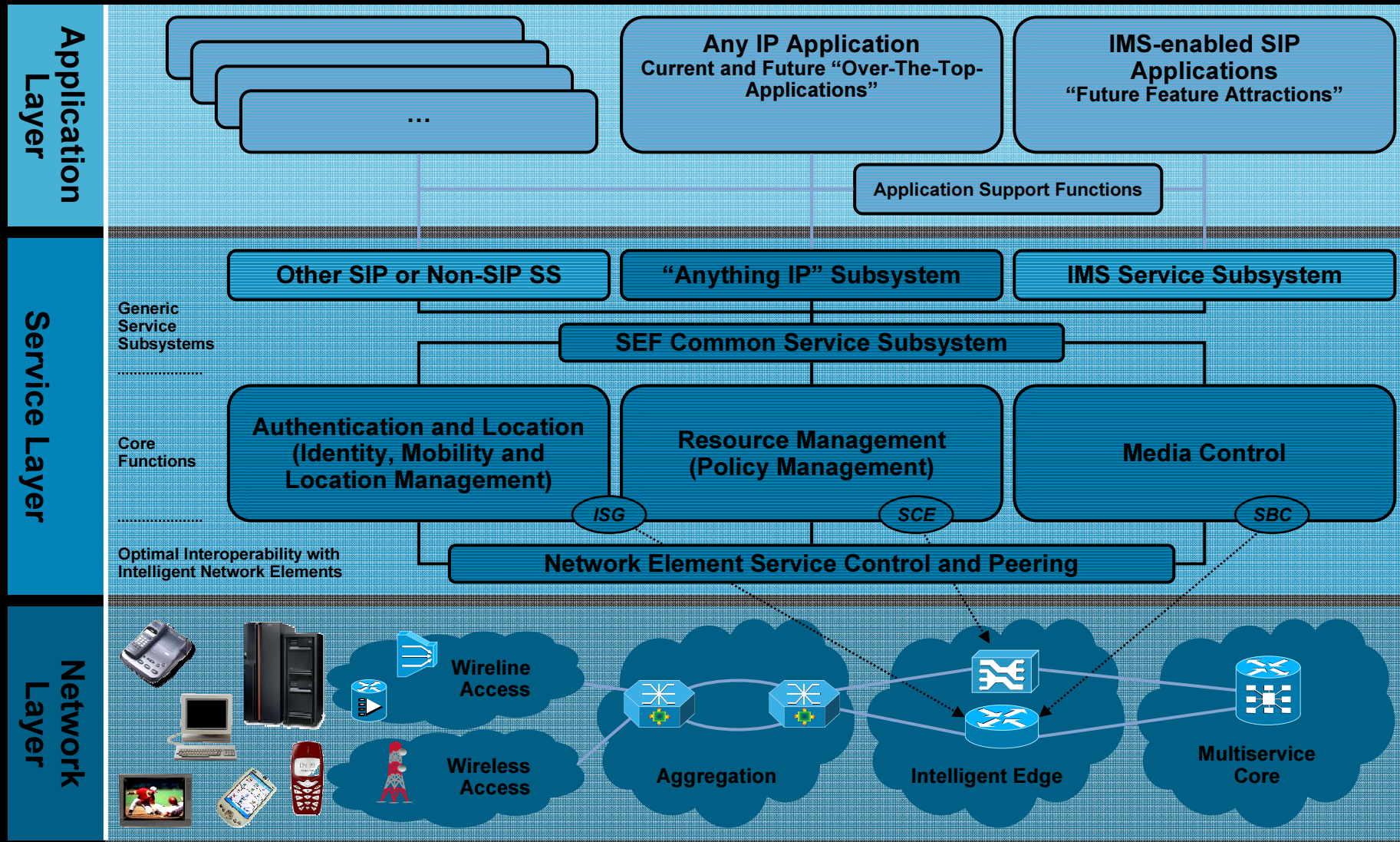
However 80% of the network bandwidth will likely be non-SIP services

- Operators need solutions to control and charge for both SIP based and non-SIP (data) services at both the bearer and signalling layers
- Cisco's IP-NGN and Service Exchange Framework architecture achieves these goals.



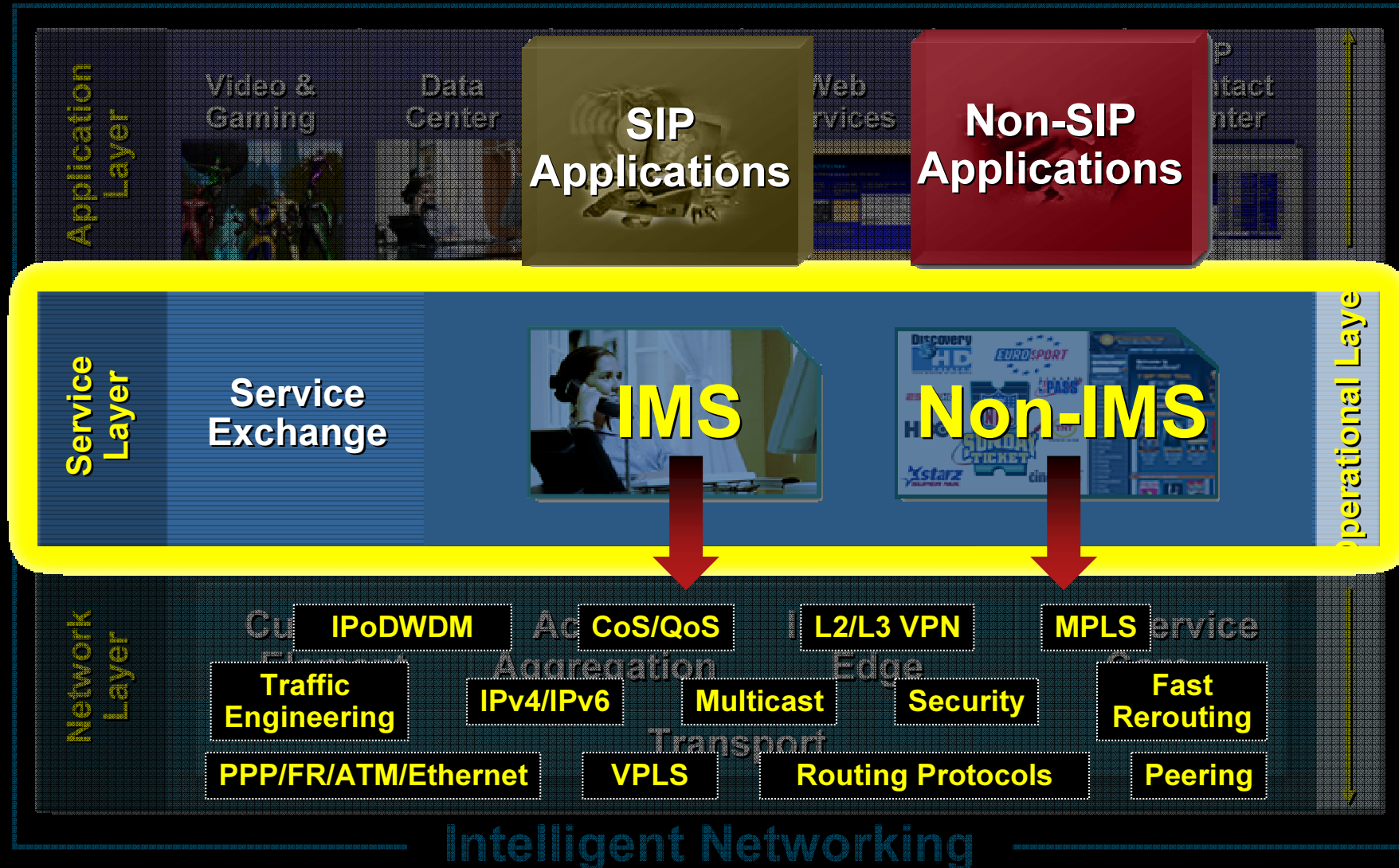
Cisco IP NGN: Universal NGN Architecture

Enabling all Emerging Network Architecture Standards

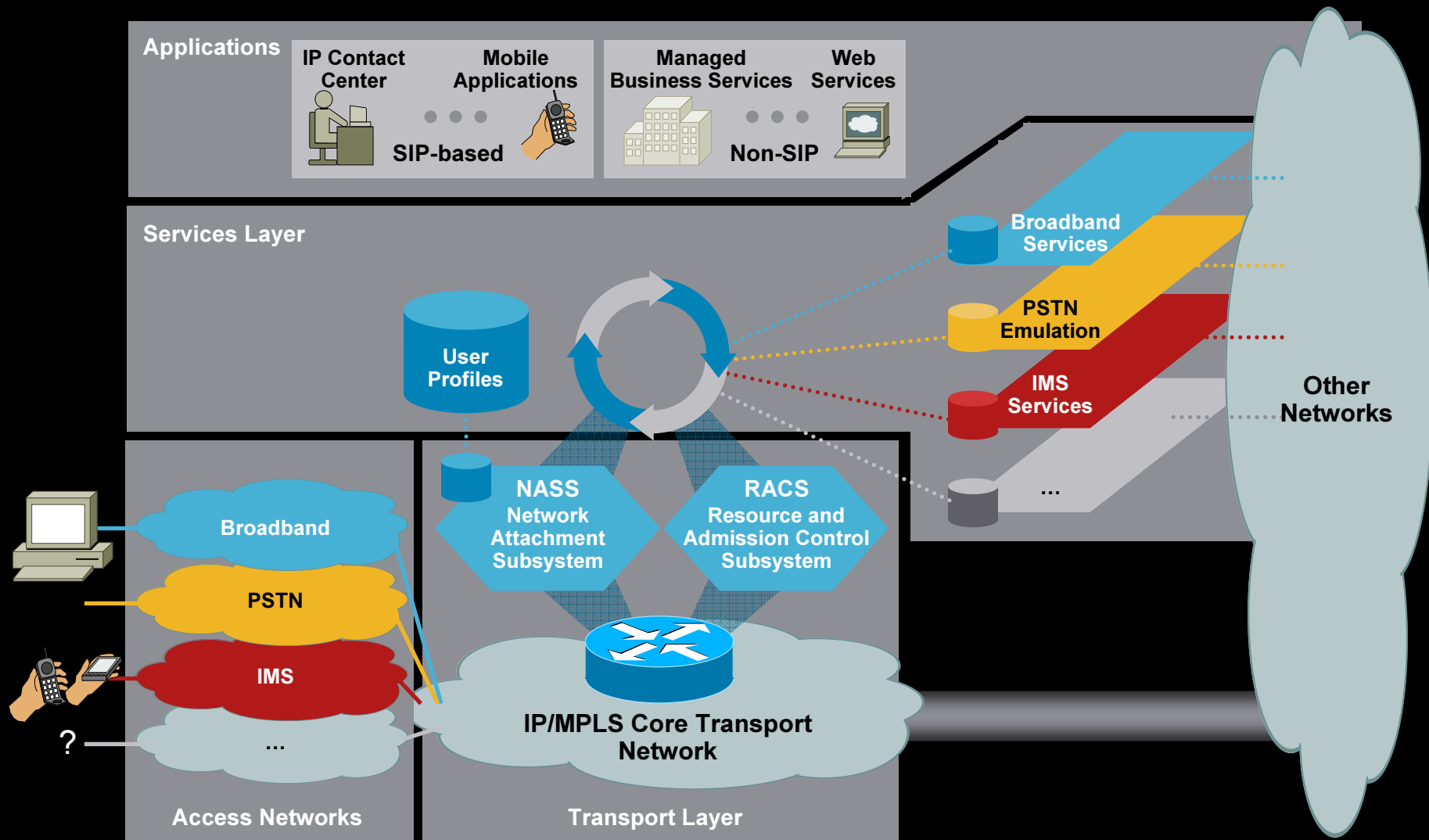


Service Exchange Framework

Comprehensive Support for BOTH IMS and Non-IMS



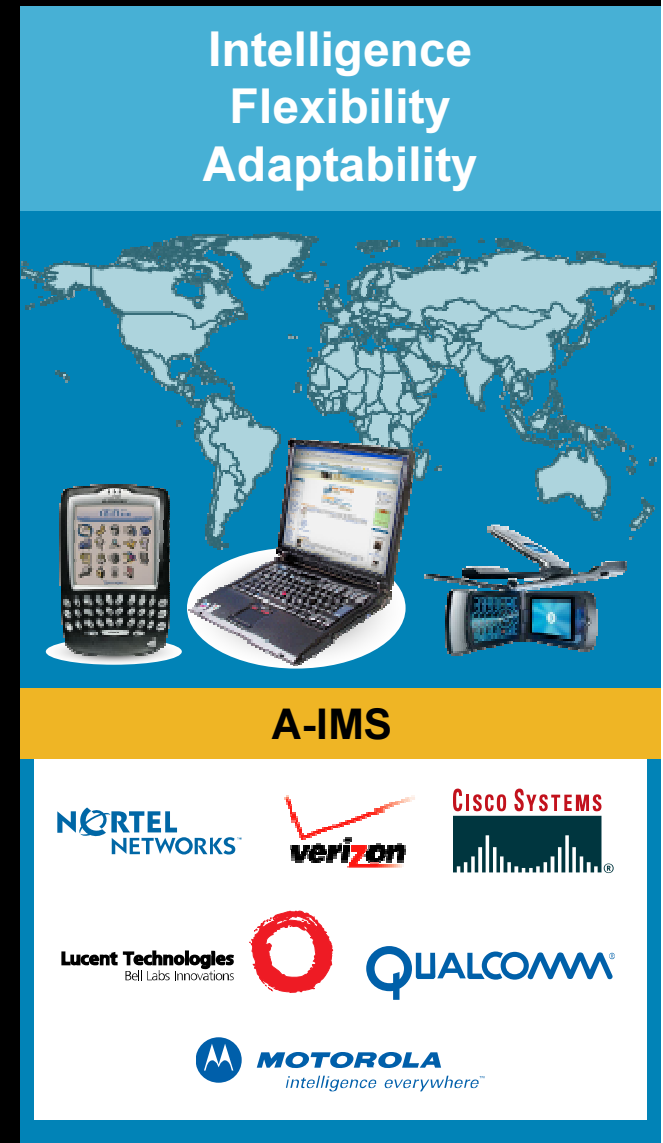
TISPAN and IP NGN Architecture



What Is A-IMS?

Evolutionary Enhancements, Extensions, and Improvements to IMS

- Participation by Verizon Wireless and a vendor ecosystem
- Driving to standards-based solutions addressing non-SIP applications, security, real-time voice, and other service provider concerns
- Service Interaction between SIP and non-SIP applications
- Conditional application invocation based on external context information
- Policy decisions impacting application behavior



Partnerships: Key to SP Success Globally

Some of Our Partners

Application Partners



Technology Partners



Go-To-Market Partners



Conclusions

- IMS/TISIPAN is a key component of NGN and it's IP Based playing to our strengths,
- Cisco embraces and expands IMS/TISIPAN within the Service Exchange Framework
- Cisco is leading efforts in the industry to develop a hybrid "System" to support SIP and Non-SIP applications
- Cisco's open Service Exchange Framework is an open framework, Cisco can/will partner with a variety of vendors who provide complimentary solutions.
- This is marathon, not a sprint....will take time and require patience



SEF In Action

Personalized
Subscriber
Management



Cisco Service Exchange Framework: Intelligently Managing Service Coordination

Challenge: Service Coordination



IP/TV® or
VoD

vs.



Web
Browsing

vs.



VoIP

Policy Trigger

Who?

What?

Service Exchange
Framework

Where?

How?

Monitoring

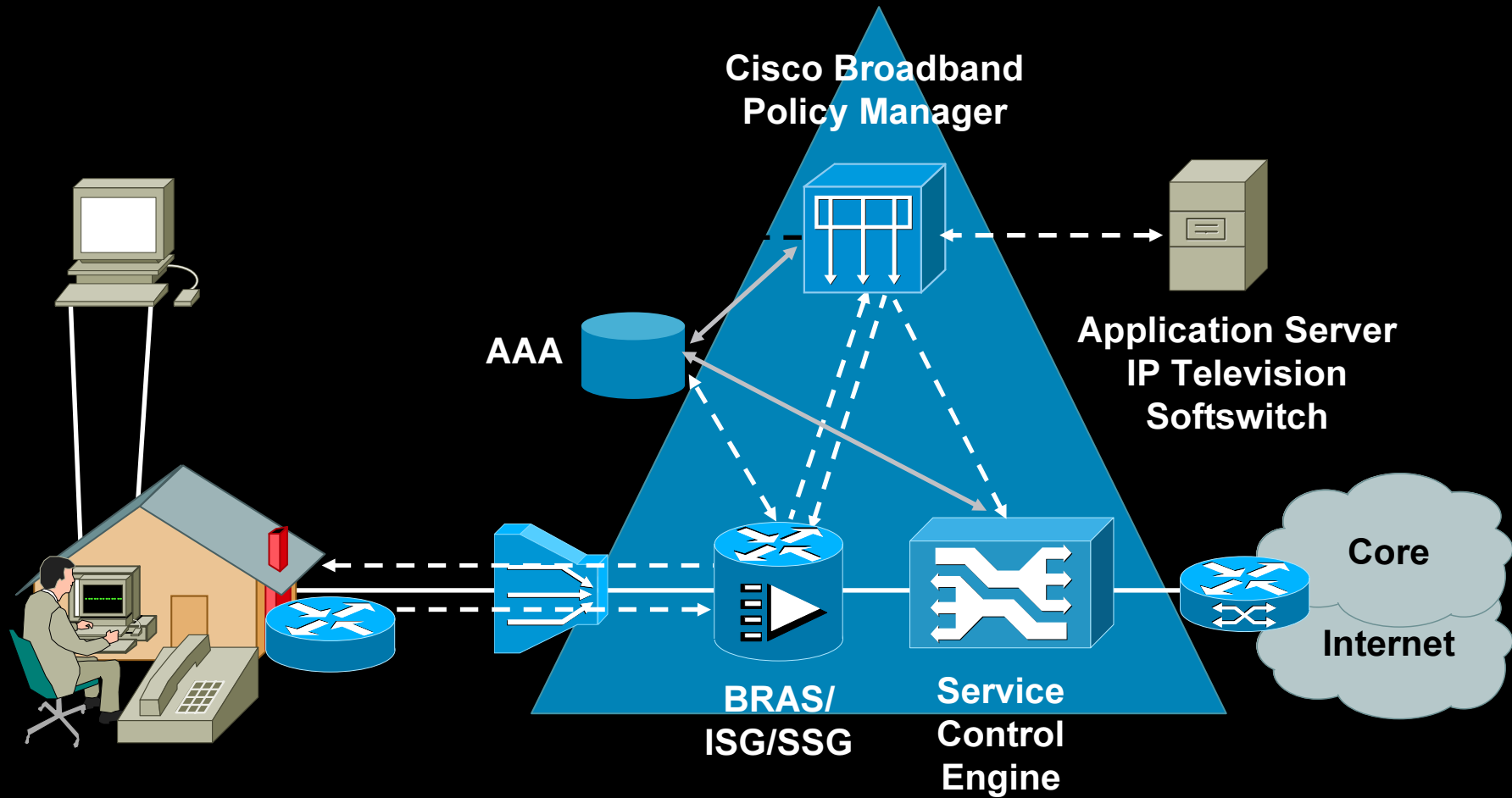
Enforcement

Solution: All IP Bundle



The Trilogy

Integrated SEF Solution Example



Possible Approach



Initially Deploy SEF Components

- SCE: For application/user awareness and policy enforcement
- BPM: For dynamic provisioning and policy management
- ISG/SSG: For application awareness and policy enforcement



Enable New Services

- Bandwidth-on-Demand, application plus user traffic differentiation, usage-based service, and fine granularity reporting



Improve Network Visibility and Performance

- Service mix monitoring per application and user, improved network yield through improved visibility, behavior anomaly monitoring (for troubleshooting and security)



Create a Platform for Future Service Evolution

- End-to-end integrated service visibility and control

Personalized Subscriber Management

Service Examples

Subscription Self-Service Examples

Parental Controls and Content Filtering

Set Internet controls for children, including blocking access and imposing time limits on online use

Bandwidth On-Demand

A Turbo Button to boost bandwidth for a set or undetermined period of time

Allowance-based Subscription

Choose quota-based or time-based bandwidth for a set period of time

Pay-as-You-Go Subscription Service

Buy time or bandwidth as needed

Optimized Operational Services Examples

Broadband Light

Encourage dial users to migrate to broadband with tiered access speeds

P2P Management and Network Optimization

Apply a broad set of policies to effectively manage all traffic



Personalized Subscriber Management: Subscription Services Example

Personalization via Self Selection



- Simplifies the end user experience
- Personalize per user including self- subscription and account refresh, e.g., new consumer service activation

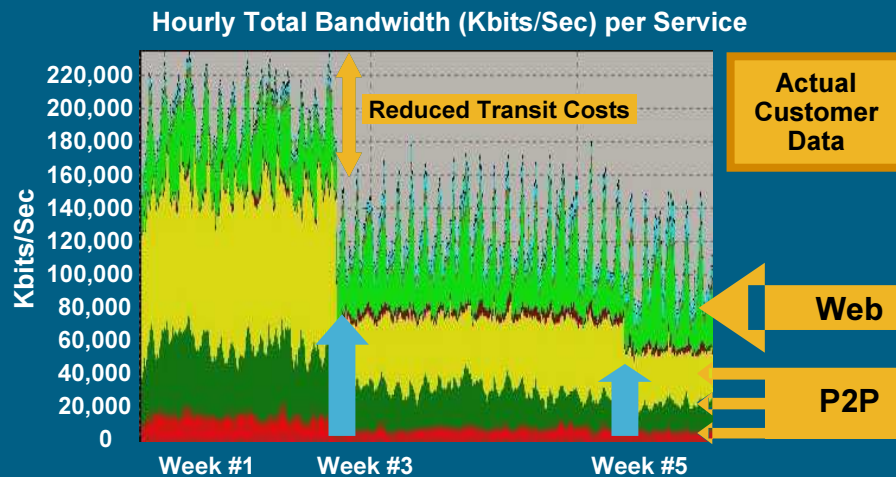
Content Filtering



- Subscriber-managed parental control
- Basic website blacklisting provided free of charge
- Comprehensive filtering and security for a small monthly subscription

Personalized Subscriber Management: Operational Services Examples

Service Prioritization via Packet Flow Optimization



Managing P2P Applications

- Enable new business models between content and service providers

Detect and manage affiliated applications and align QoS

Co-branding and fee sharing

Implement Fair Use Policy

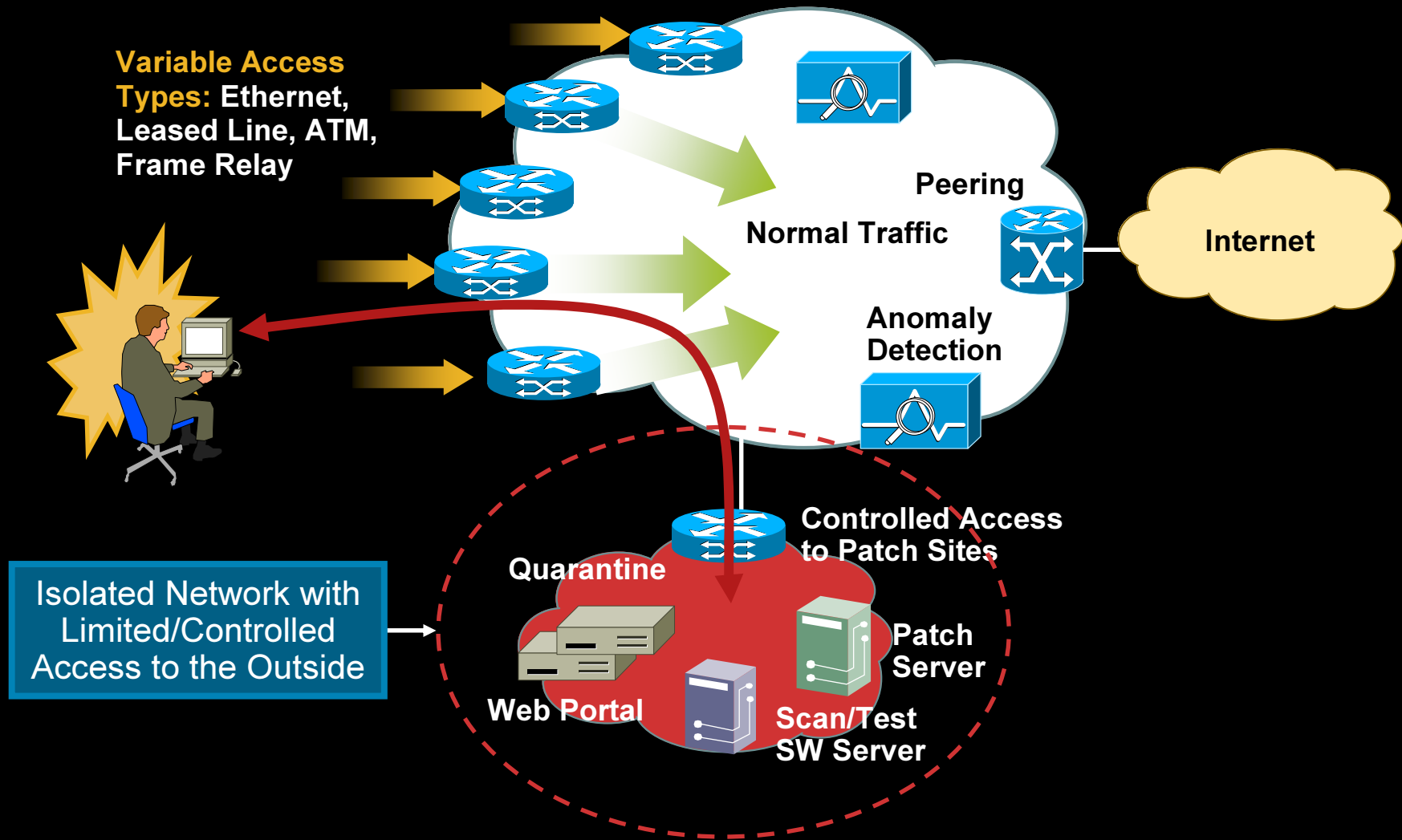


- Eliminates bandwidth bottlenecks
- Enhanced user experience

Usage	Less Than 2.8GB	Less Than 4.2GB	Less Than 5.6GB	Over 5.6GB
E-mail + WWW	No Limit	No Limit	256 kbps	256 kbps
Audio/Video Streaming	No Limit	128 kbps	65 kbps	48 kbps
P2P	48kbps	28 kbps	28 kbps	16 kbps

User Quota Based on 7-Day Timeframe

Secure Broadband: Quarantine Services



Turbo Button Belgacom

fr / nl

belgacom

my e-Services | online support search GO

private | professional | Belgacom Group

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Belgacom ADSL Fast Click

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See also

Need help

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ADSL options

Belgacom ADSL Power

Permanent speed increase, higher volume, and possibility of four simultaneous internet connections.

€ 9.50 /month (incl. VAT)

Increase Upload Speed permanently

private

- telephony
- internet
 - access
 - options
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 - documents handling
 - manage e-Mails
 - technical assistance
 - tariffs
 - your website
 - security
 - equipment
- television
- promotions
- e-Services
- newsletters





Belgacom ADSL Fast Click

The advantages for you

- ◆ The first Fast Click of the month is free
- ◆ You save time when sending large files, e.g., when placing photographs online, updating your Internet, large files, etc.
- ◆ Improved image quality of your conversations conducted by webcam
- ◆ You increase the quality of your online games

Multiple Quota Levels per Speed Level

BT UK

Provider	Download Speed	Download Limit	Set-up Cost	Monthly Cost	Year 1 Total Cost
What is this?	What is this?	What is this?			
 BT Broadband Option 1	2Mb	2GB per month	free	£17.99	£206.88
 BT Broadband Option 2	2Mb	6GB per month	free	£22.99	£269.88
 BT Broadband Option 3	2Mb	20GB per month	free	£26.99	£317.88
 BT Broadband Option 4	2Mb	40GB per month	free	£29.99	£356.88

Users are requested to Upgrade when systematically exceeding Quota



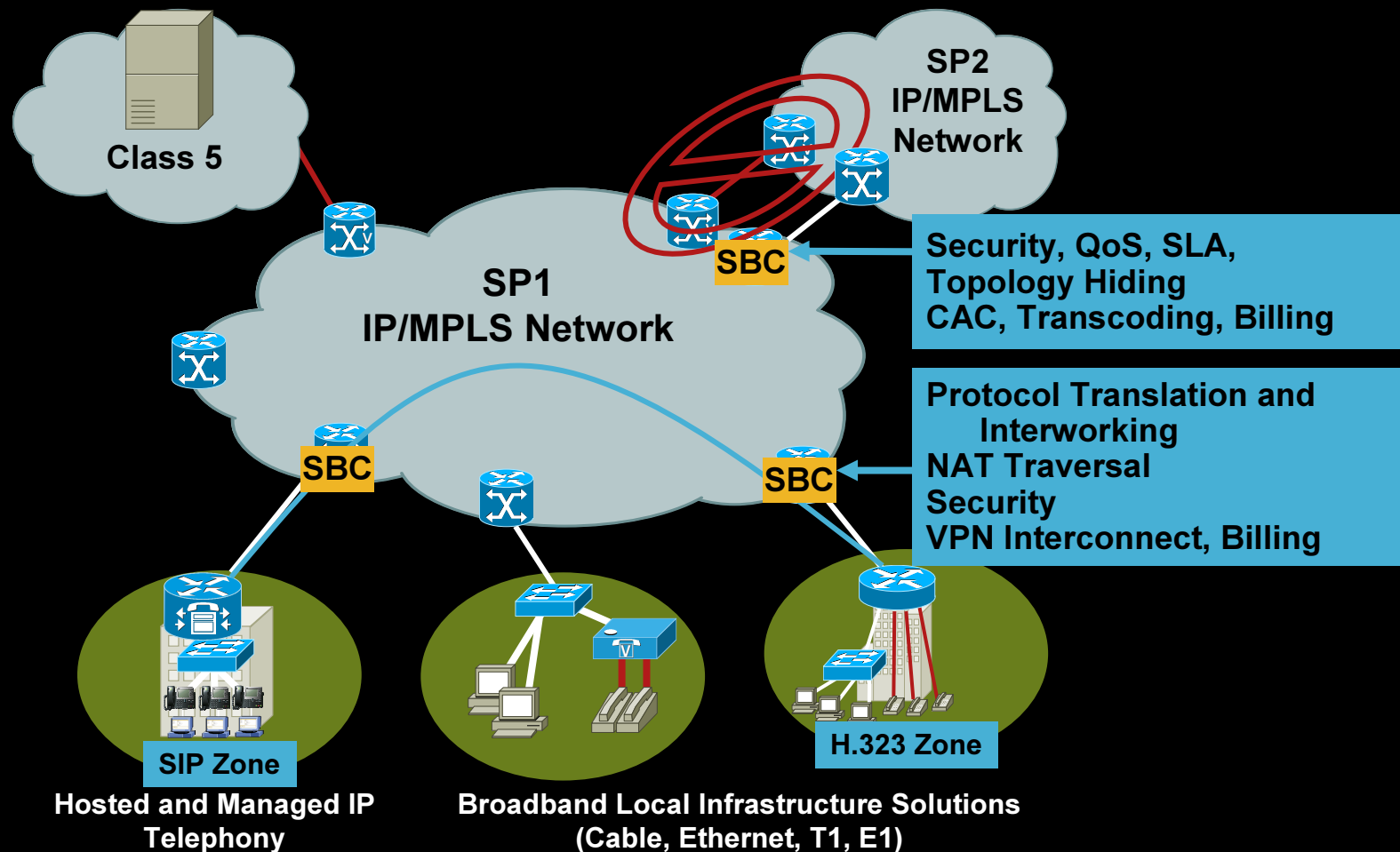
SEF In Action

Session Border
Controller



What Is a Session Border Controller (SBC)?

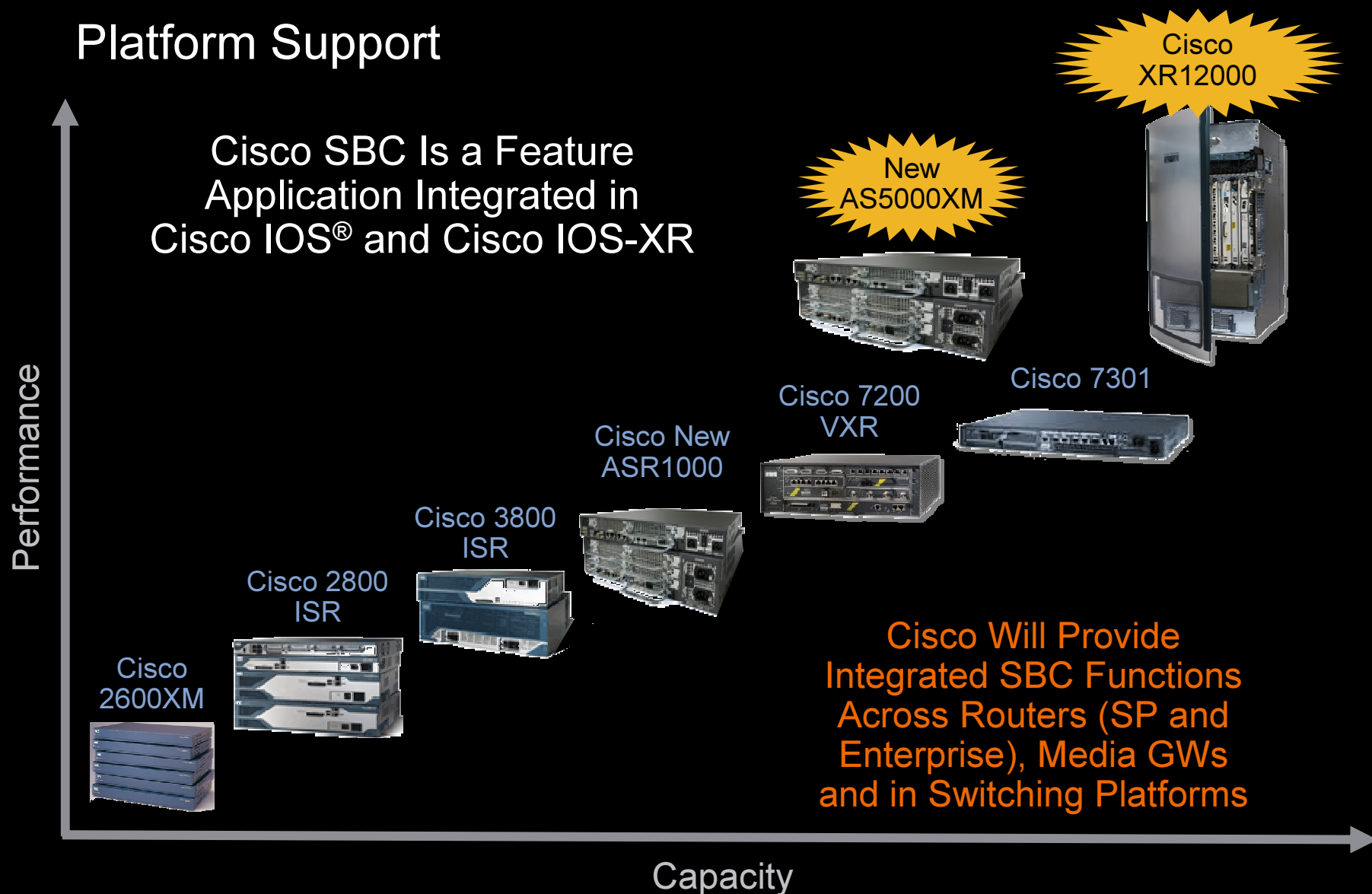
SBC Provides Direct IP to IP Interconnect Between Multiple Administrative Domains for Session-Based Services, Providing Session Protocol Interworking, Security, Control and Management



Cisco SBC Portfolio

Platform Support

Cisco SBC Is a Feature Application Integrated in Cisco IOS® and Cisco IOS-XR



Application-Aware VPNs: Supports Many Business Applications

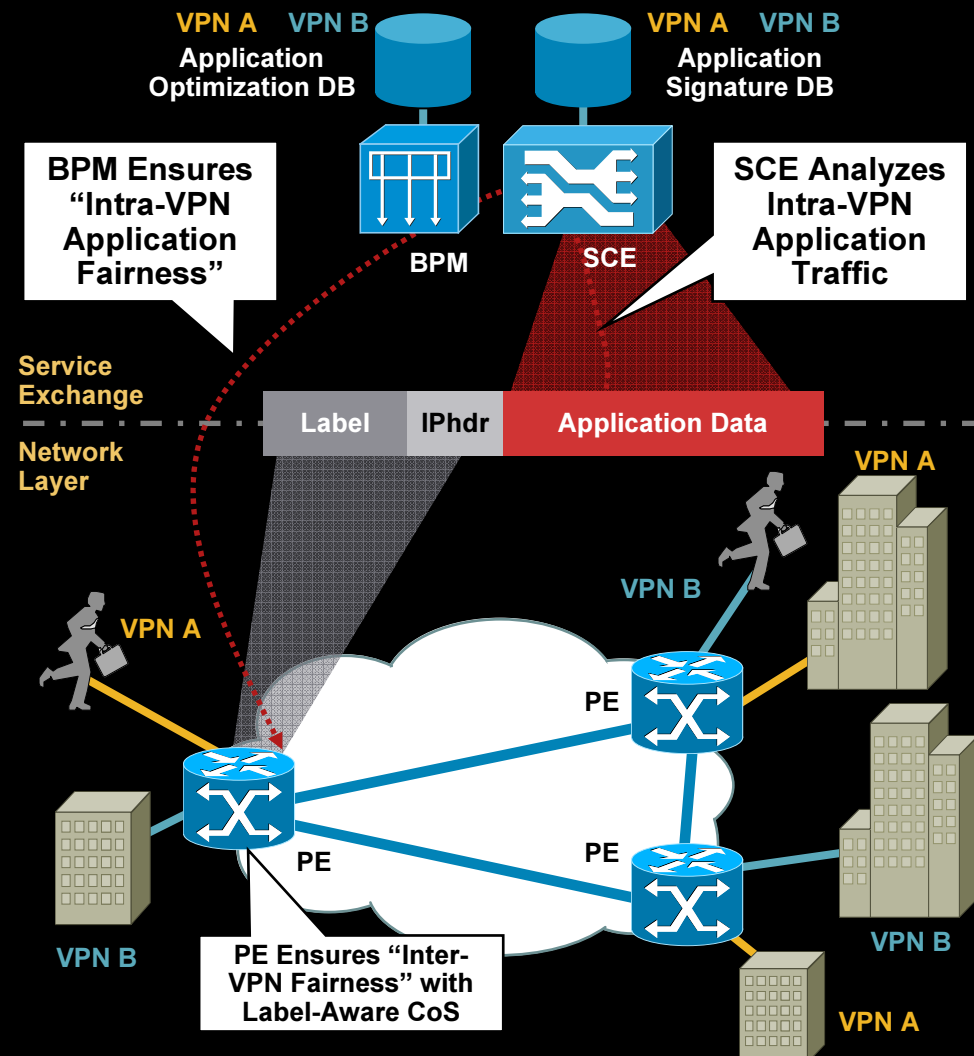
- AA VPNS concept extends traditional L3-VPN capabilities
- SCE acts as “Application-Aware VPN Engine”

Discovers subscribed L3-VPNs’ topology

Analyzes application traffic with deep-packet inspection

Discovers active applications and tracks performance

Optimizes application performance as required by pushing policy updates onto PE



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Assuring Quality of Experience

Industry Leading Video Call Admission

Integrated Video Call Admission Control

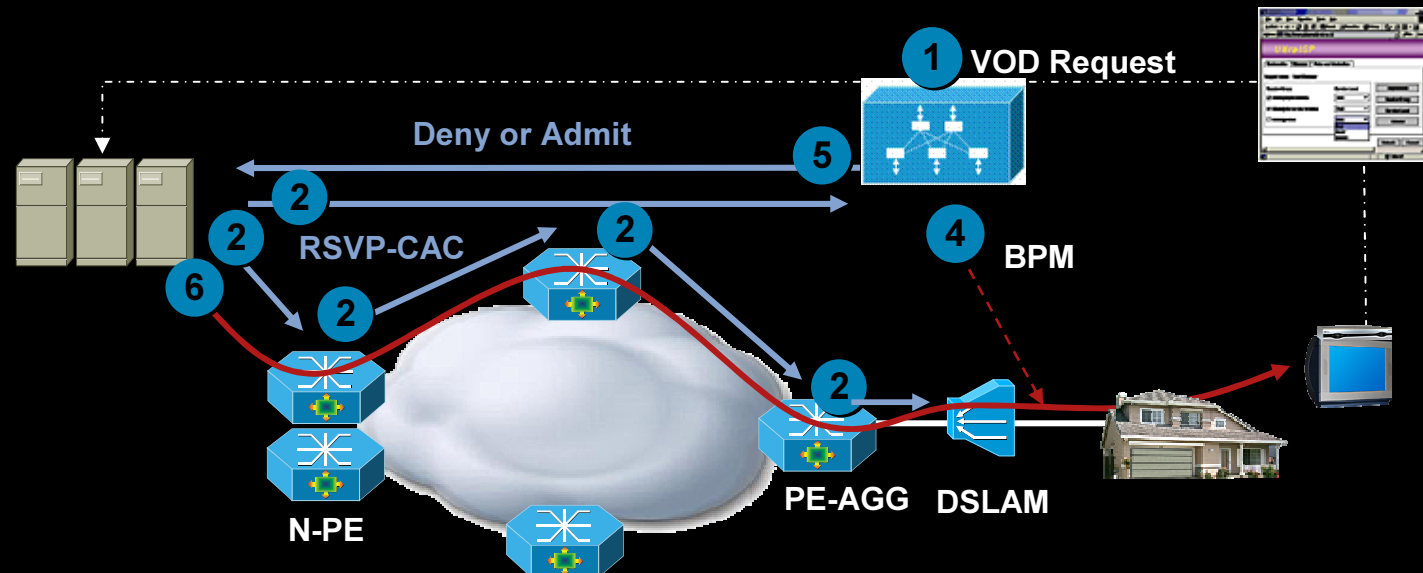
Subscriber aware

via Off-path CAC w/ Broadband Policy Manager (BPM) for DSL line

- Combines subscriber and topology awareness
- CAC required to guarantee user experience (10-6 packet loss)
- VOD stream denied if business rules of either fail
- Prioritize blocking of Free VOD vs. Pay VOD
- Multicast CAC Optional

Topology aware

via On-path RSVP-CAC for Aggregation



Winner
Broadband
World Forum
October 2006

Fixed Mobile Convergence: Service Convergence and Seamless Mobility

Layer 7 Convergence IPT/SIP/IMS

Common Applications That Run Over Any IP Network and Service Based Mobility Like Single Number Reach

Layer 3 Convergence Mobile IP

Maintains IP Sessions Seamlessly Between Multiple IP Access Networks

Layer 2 Convergence UMA

Maintains GSM Voice, SMS and GPRS IP Data Between GSM/UMTS, and Multiple IP Access Networks

Cisco IP NGN Vision and Architecture

Enhancing Entertainment and Business Grade Services

Resources

Comprehensive
IP NGN Portfolio

Build

CRS-1, ISG, 7600,
10000, 72/7300, etc.

IP DNA

Unmatched IP
Expertise and
Experience

Partner

Content Providers,
Middleware,
System Integrators

Commitment

Over \$1.4B R&D
FY'05 for SPs

Acquire

Scientific Atlanta,
Linksys



SEF Collateral

- Cisco.com Service Exchange Category

<http://www.cisco.com/en/US/products/ps7045/index.html>

