NGN Voice and Carrier Interconnection for IMS and non-IMS based Architectures

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NGN Voice and Carrier Interconnection
for IMS and non-IMS based Architectures

- Neue Kommunikations Technologien und Lösungen stellen hohe Anforderungen an Funktionalität und Kompatibilität für Integration und Interkonnektion. Die neuen Schlagworte sind Konvergenz und Multimedia, ergänzt durch Personalisierung und Mobilität für kreative Business Modelle.
- Diese Präsentation erklärt den globalen IP NGN Architekturansatz von Cisco für die Entwicklung von IMS/non-IMS Produkten und Lösungen für Daten, Sprache und Video Anwendungen für Service Provider mit Cisco-Roadmap Diskussion speziell für ENUM Integrationen und Schnittstellen.

Market Transition... Consumers…"everything 2.0"

Content / Device Boundaries Blurring

Transition of Expectations

New Digital Culture… New SP Opportunities

What They Want	When They Want It	Where They Want It	How They Want It
			
Broad Choice Personalized Simple	On Demand Available Always	Everywhere "Follow Me"	Flexible No Platform, Access or Bundle Restrictions

IP NGN Journey

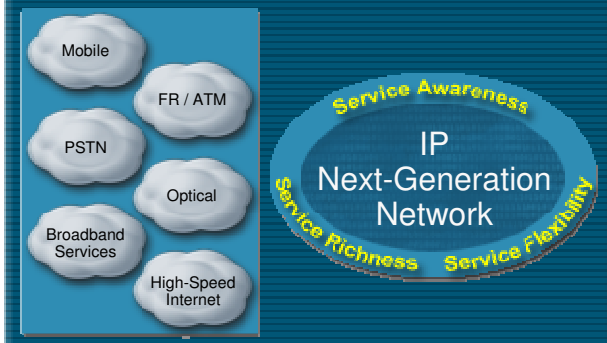
Requires Multiple Layers of Convergence

Application Convergence

Integration of New Innovative IP D/V/V Services over Broadband for Increased Revenue

Service Convergence

Service Continuity across Access for Customer Loyalty and Stickiness

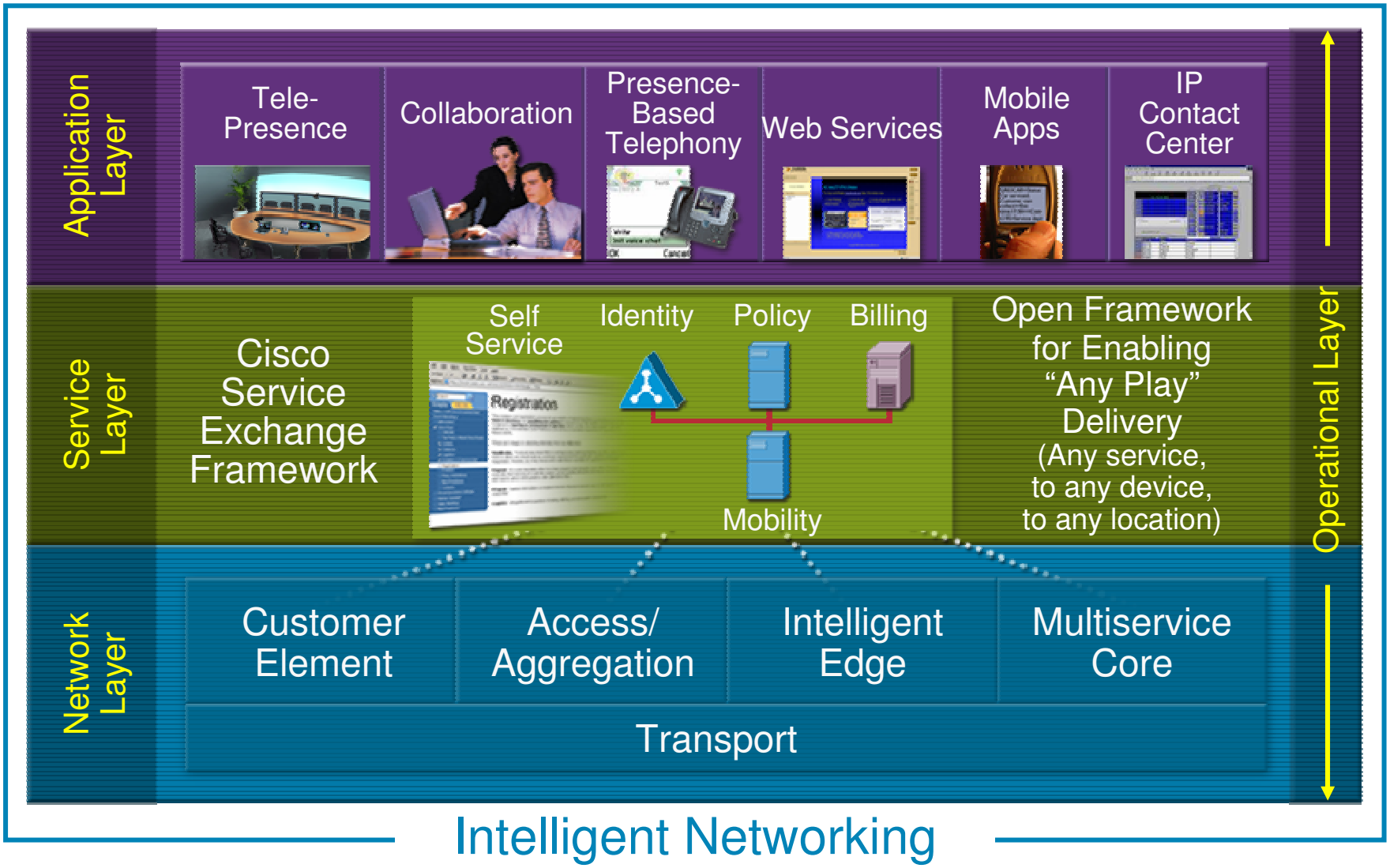


Network Convergence

Eliminate Layers in the Network for Increased OpEx/ CapEx Efficiencies

Cisco IP NGN Architecture

Achieving a Whole Greater Than the Sum of the Parts



New Service Provider Offer:
"Many Services to Many Screens"

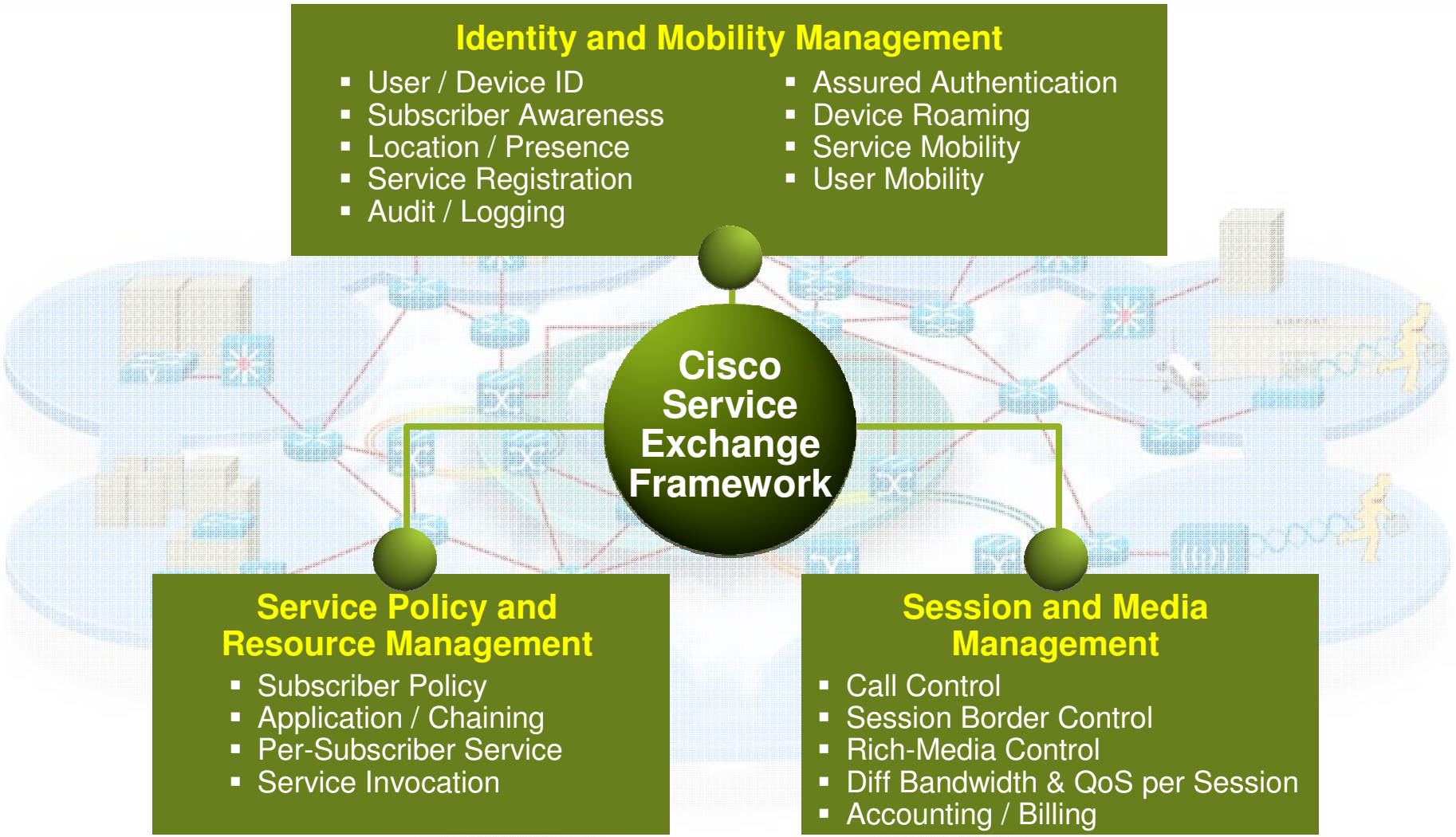
VoIP	Custom Ring Tones / MP3 Player	High-Speed Internet /VPN	Text / Instant Messaging
Push-to-Talk / Intercom	Video Conferencing	Digital TV / VOD	PDA / Email

Data Voice Video

At Work, At Home, On The Move

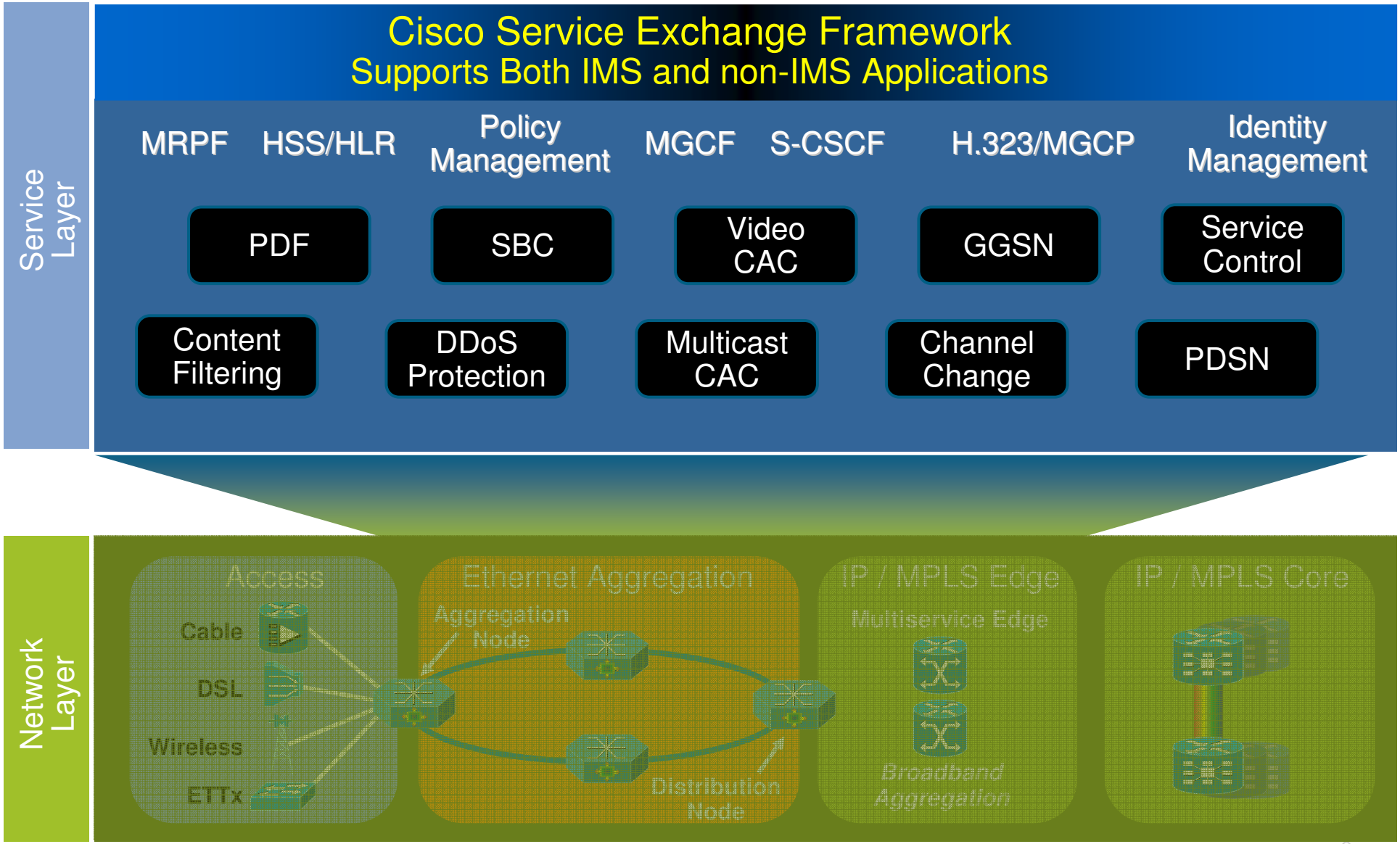
Service Exchange Framework

Making "Any Play" Real



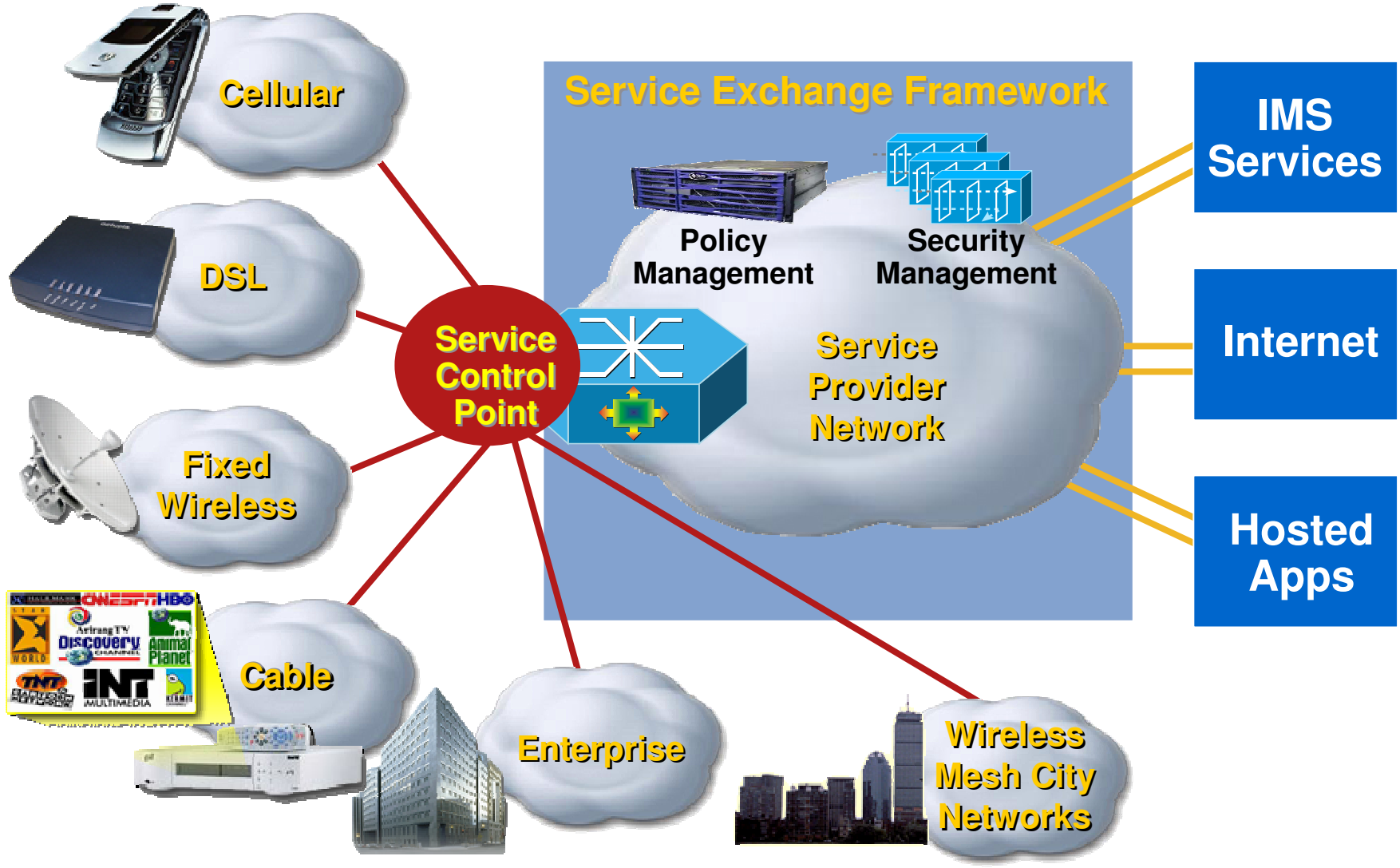
Selective Network Integration of SEF Intelligence

Maximizing Scale and Efficiency

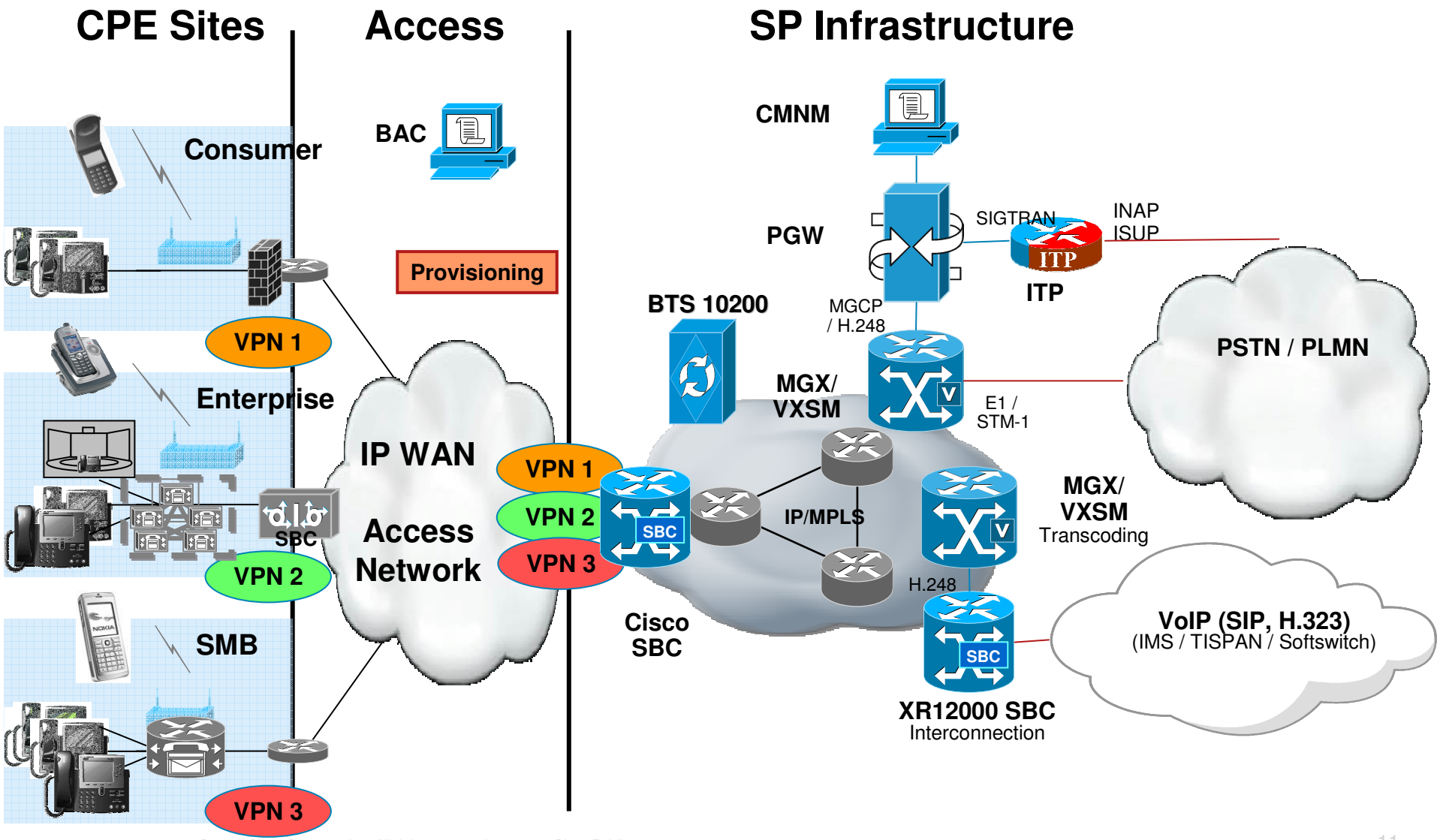


Application Architecture of the Future

Service Control is Critical to User Experience

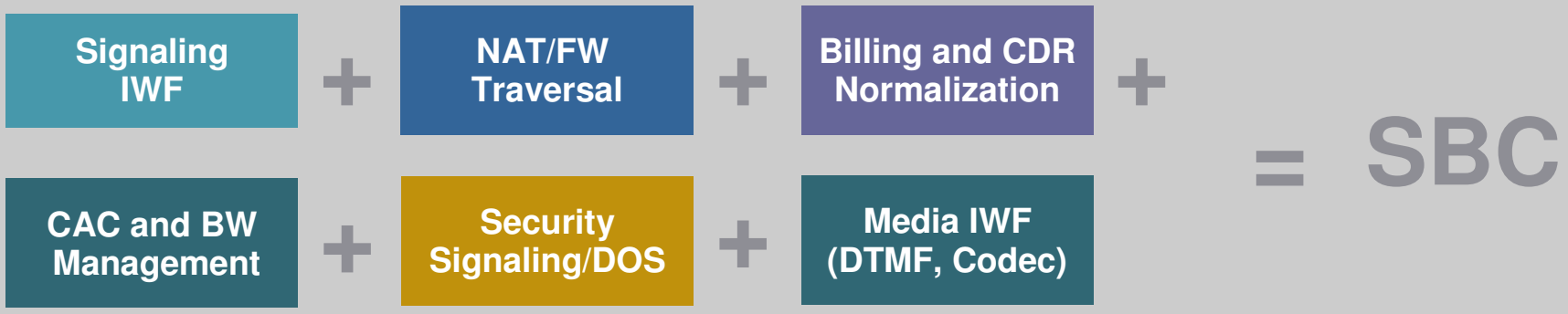


Common SP Voice Infrastructure



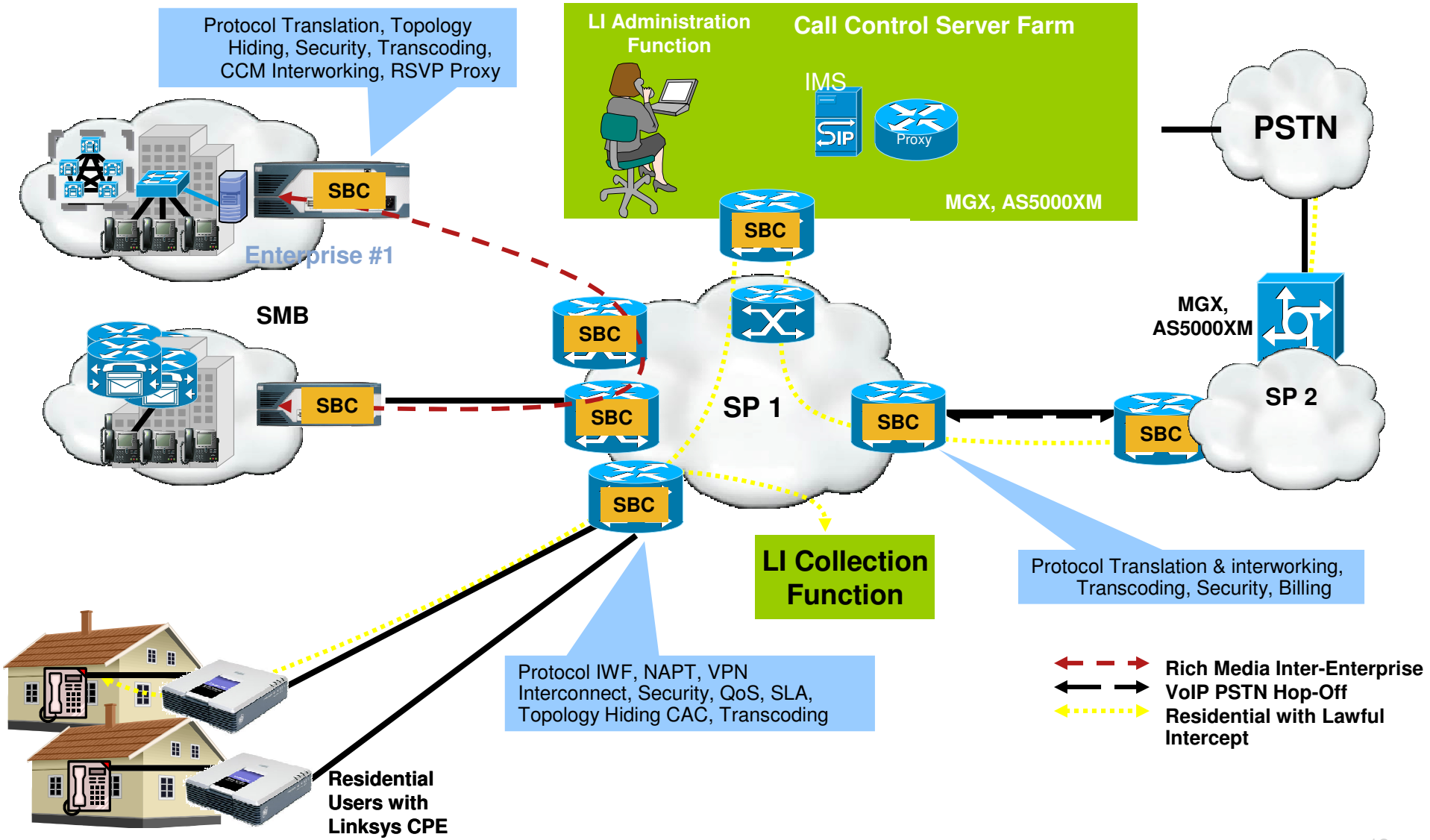
What Is an Session Border Controller?

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



- SBC is a tool kit of functions
- Depending on the application and deployment scenario, a different set of functions can be turned on/off

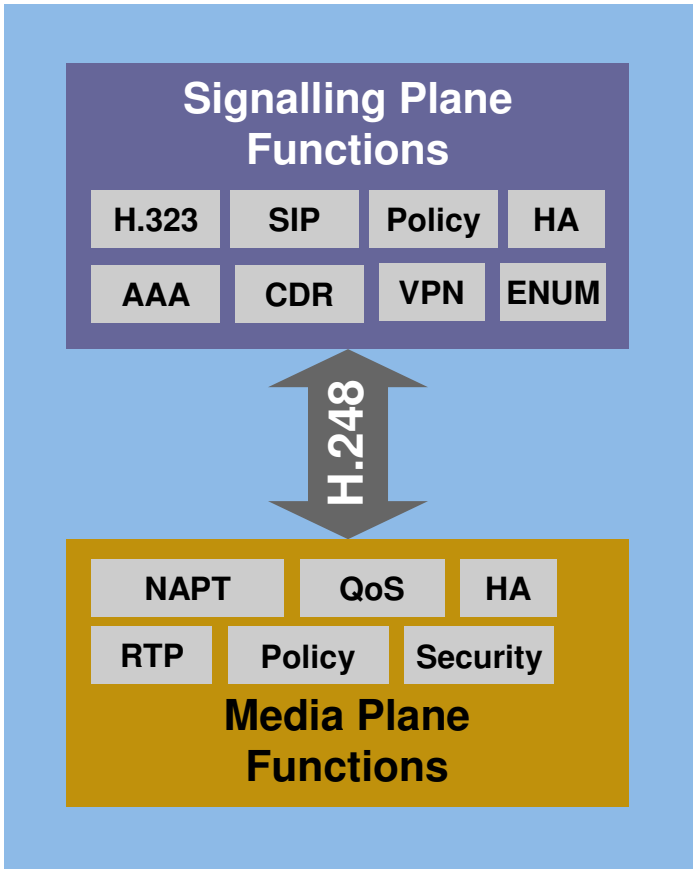
VoIP Border Inter-Connect



A Look at Signalling & Media Plane Functions

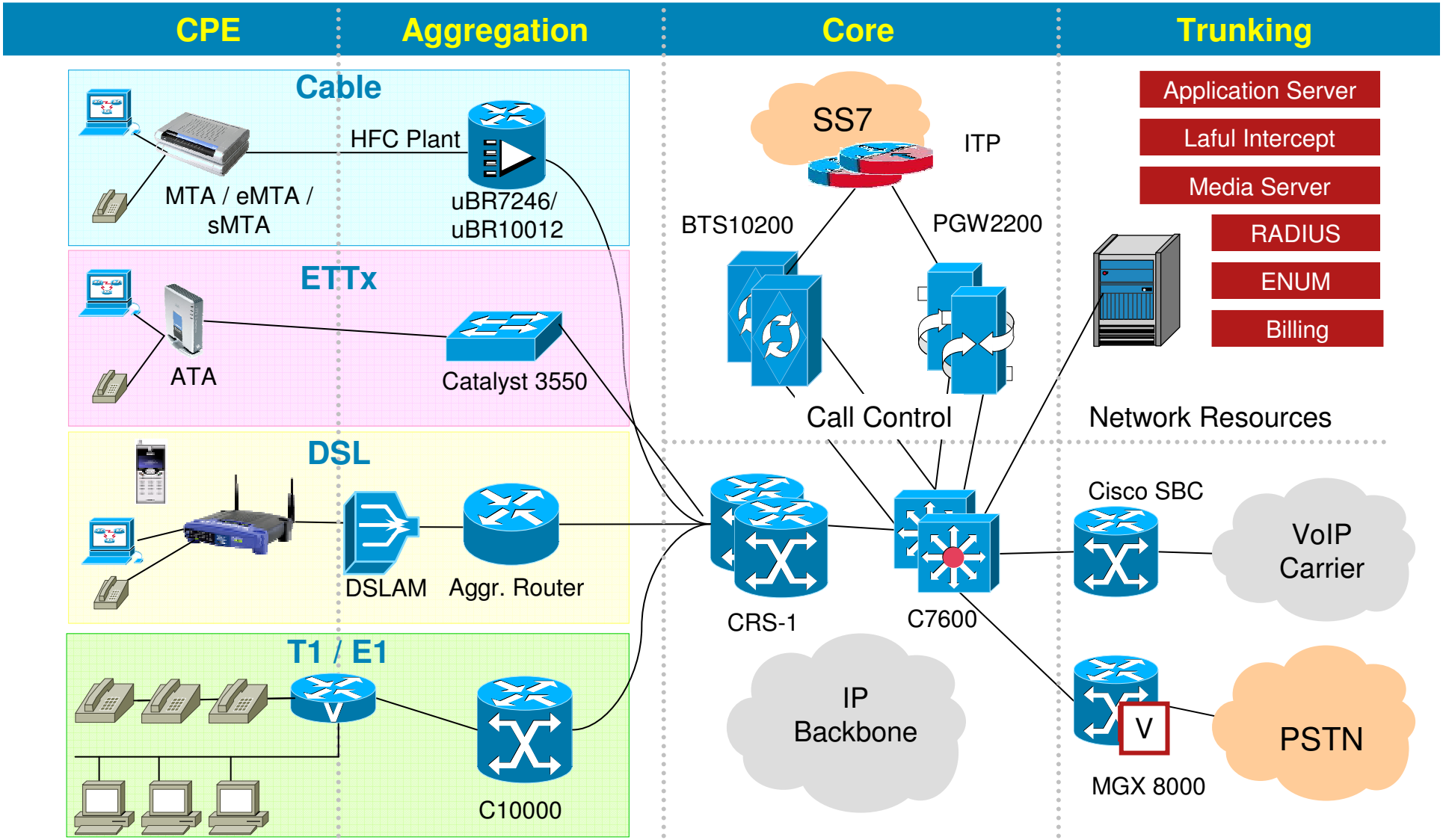
- Traditional Composed SBCs tend to incorporate both media and signalling plane functions
  - Signalling Plane Functions
    - All protocol handling functions
    - Usually SIP/H.323 B2BU
    - Security “Firewall” Functions
    - Direct control of media plane (gating/policing)
  - Media Plane Functions
    - Security “Firewall” Functions
    - Media policing
- Some allow media-bypass/flow around to cater for path optimisation
- Some allow physical separation of media and signalling plane functions

(De-)Composed SBC

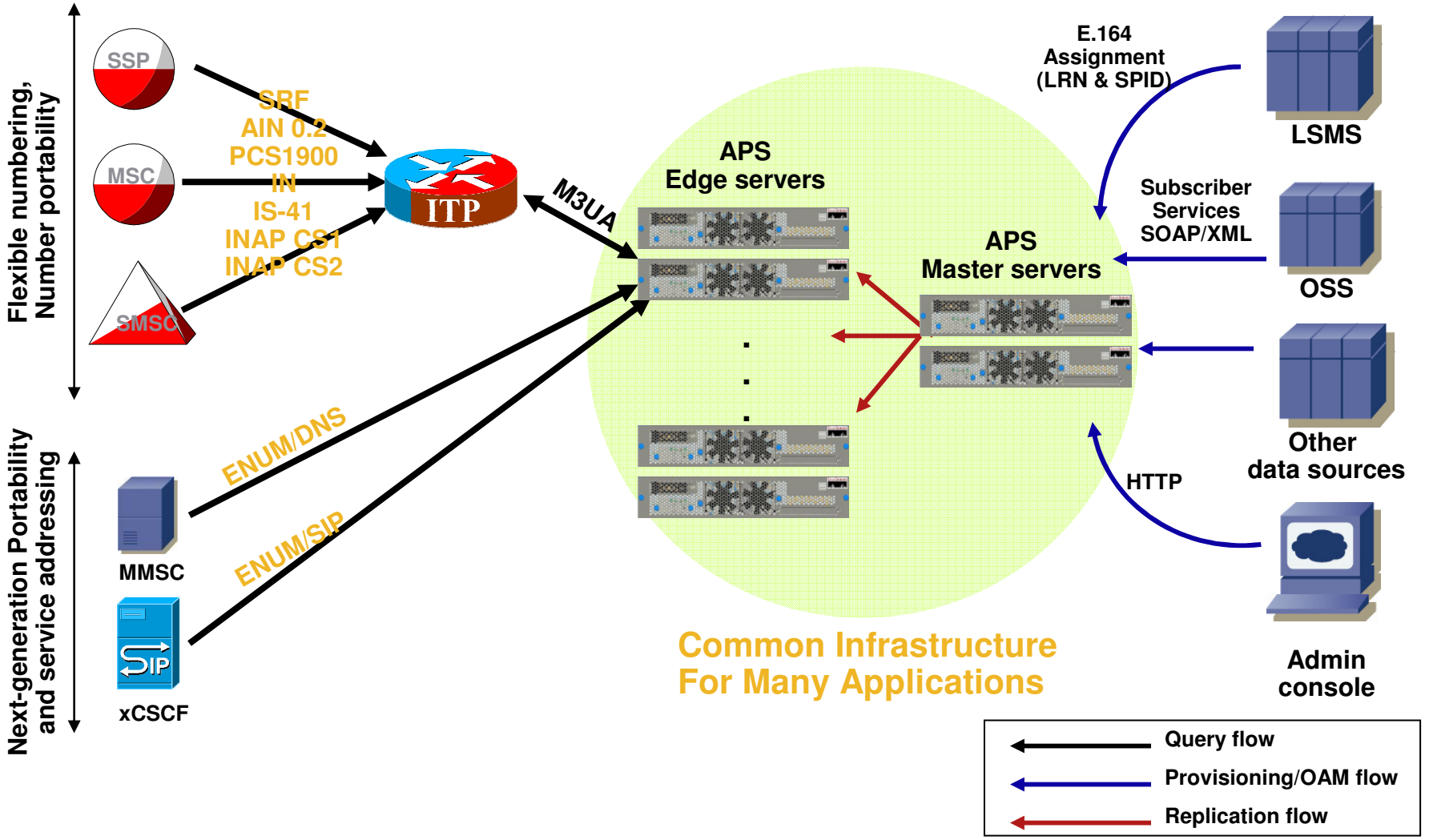


Cisco Softswitch Solutions

Access-Agnostic Broadband VoIP Residential & Business Services



Cisco Database for Telecommunications (CDT)
Architecture



Cisco Database for Telecommunications (CDT)
Highlights

Number Portability Signaling Protocol Support

- INAP CS1 - ITU Q. 1218 (10/95)
- INAP CS2 - ITU 1228 (9/97)
- SRF (per 3GPP TS 23.066 V6.0.0)

- DNS
- SIP RFC 3261
- ENUM RFC 2916 and RFC 3761

Interface Support

- SOAP/XML
- HTTP/HTTPS
- FTP
- SFTP
- SNMP v2

Flexible Numbering Protocol Support (ARD)

- GSM/CDMA (route-on-gt)
- CDMA (route-on-ssn)

Performance

- Up to 30,000 tps per Edge server
- Up to 150 database updates per second
- <10 min reload for 100 Million numbers

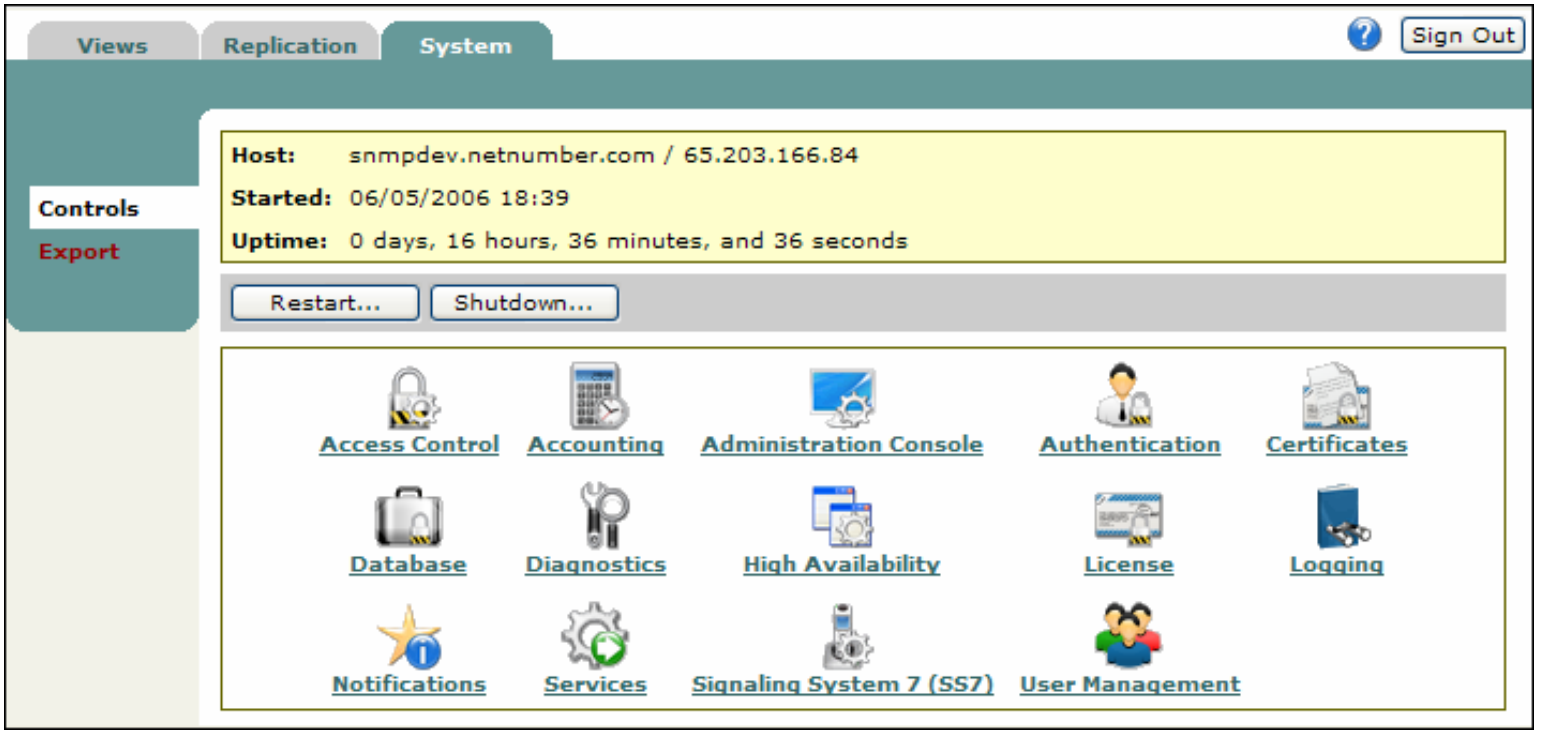
- 100M record audit in 4 hours over a WAN

Database Capacity

- up to 200 Million subscribers with 0-15 services per sub

Cisco Database for Telecommunications (CDT)
System TAB

- Configure system facility information including accounting, certificates, database, high availability, logging, notifications, services and user accounts.



Cisco PSTN Gateway Solutions—PGW 2200

Migration to Carrier-Class Packet Voice Solutions

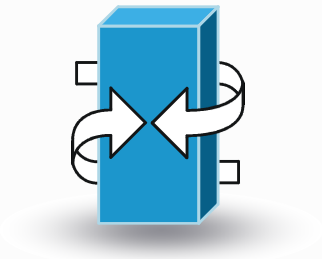
Programmable Element Enabling:

- Supports ISUP, PRI, H.323 and SIP interfaces for interworking between networks
- Hides complexity of PSTN from IP telephony devices and applications
- Enables multiple Carrier Services (Voice Transit, Dial Access, ASP Termination) and Managed Business Voice (Hosted IP Telephony, Voice VPNs)

Delivering:

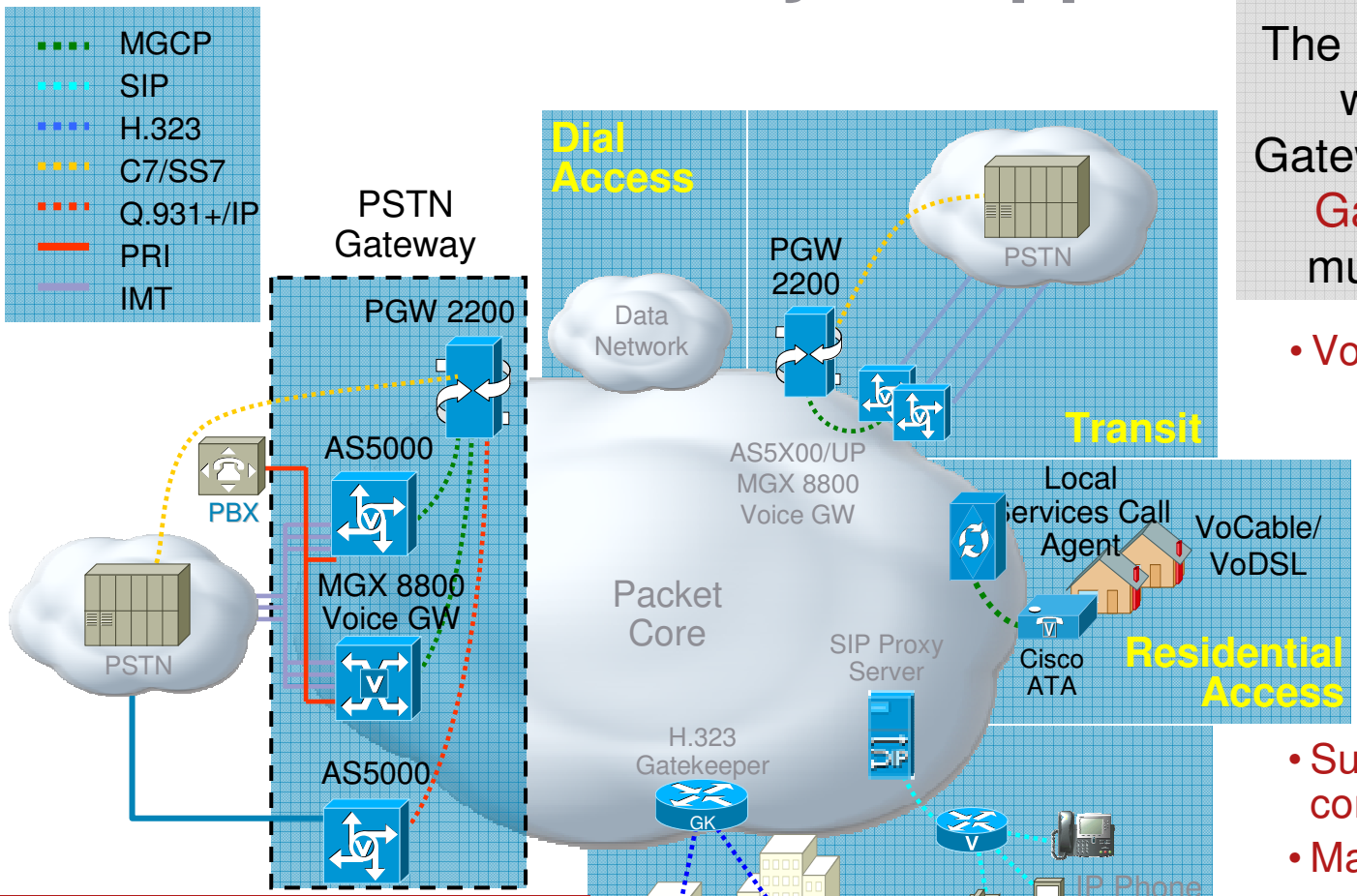
- Scalable, centralized call control and billing
- Advanced routing capabilities and circuit selection supporting regional regulatory requirements
- An SS7 Trunking Gateway to networks that have existing R2 and PRI based gateways

Cisco PGW 2200 PSTN Gateway



Providing a Bridge Between PSTN and IP Networks

Cisco PGW 2200
Enables a Variety of Applications

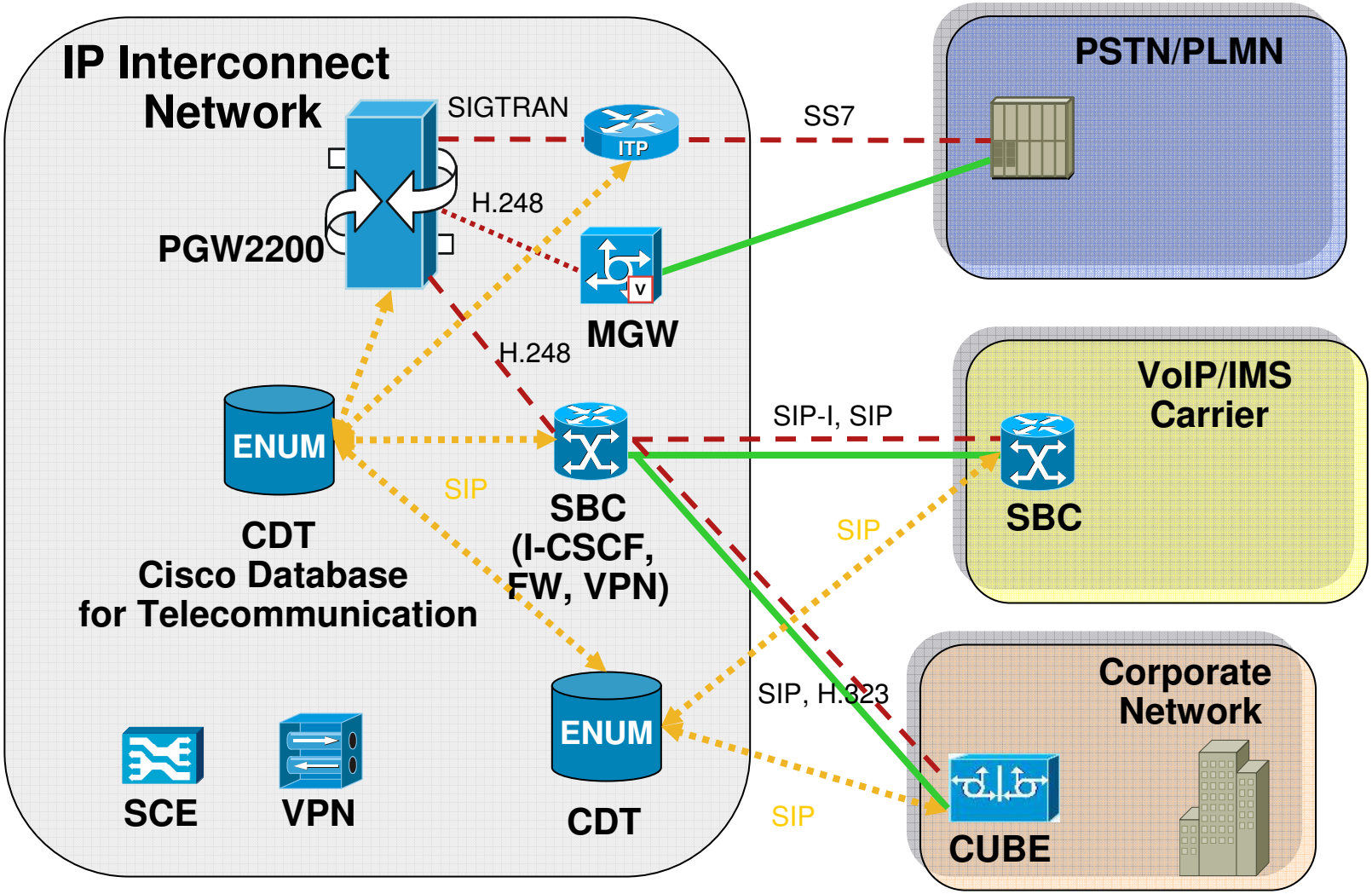


Many customers use a combination of these capabilities in their network

The PGW 2200, coupled with Cisco Media Gateways, forms a PSTN Gateway to support multiple applications

- Voice Transit
  - National and international transit
  - Prepaid/postpaid card service
  - Dial access
  - ASP Termination
- Supports signaling or call control modes
- Managed voice services
- Voice over broadband
  - Residential
  - Hosted IP Telephony
  - Voice VPNs

Cisco SP Interconnect Solutions



Cisco Softswitch Solutions—BTS 10200

Migration to Carrier-Class Packet Voice Solutions

Programmable Element Enabling:

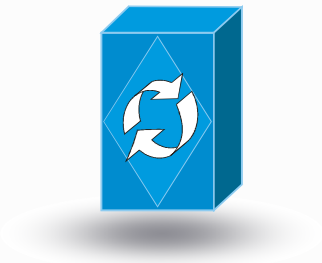
- Supports local access methods, including ISUP, PRI, IAD, cable modem, PBX, for cost-effective last mile access alternatives
- Complete set of local voice service features for business/residential users
- Use today's VoIP infrastructure to create one network for voice/data services, and video in the future

Delivering:

- Self-service Phone Administrator (SPA) for ease of subscriber provisioning
- Supports both traditional PSTN and IP/ATM specific billing needs
- Improve network efficiency through true IP internetworking realization
- Standards-based open commercial platform allows low-cost insertion and quick ROI

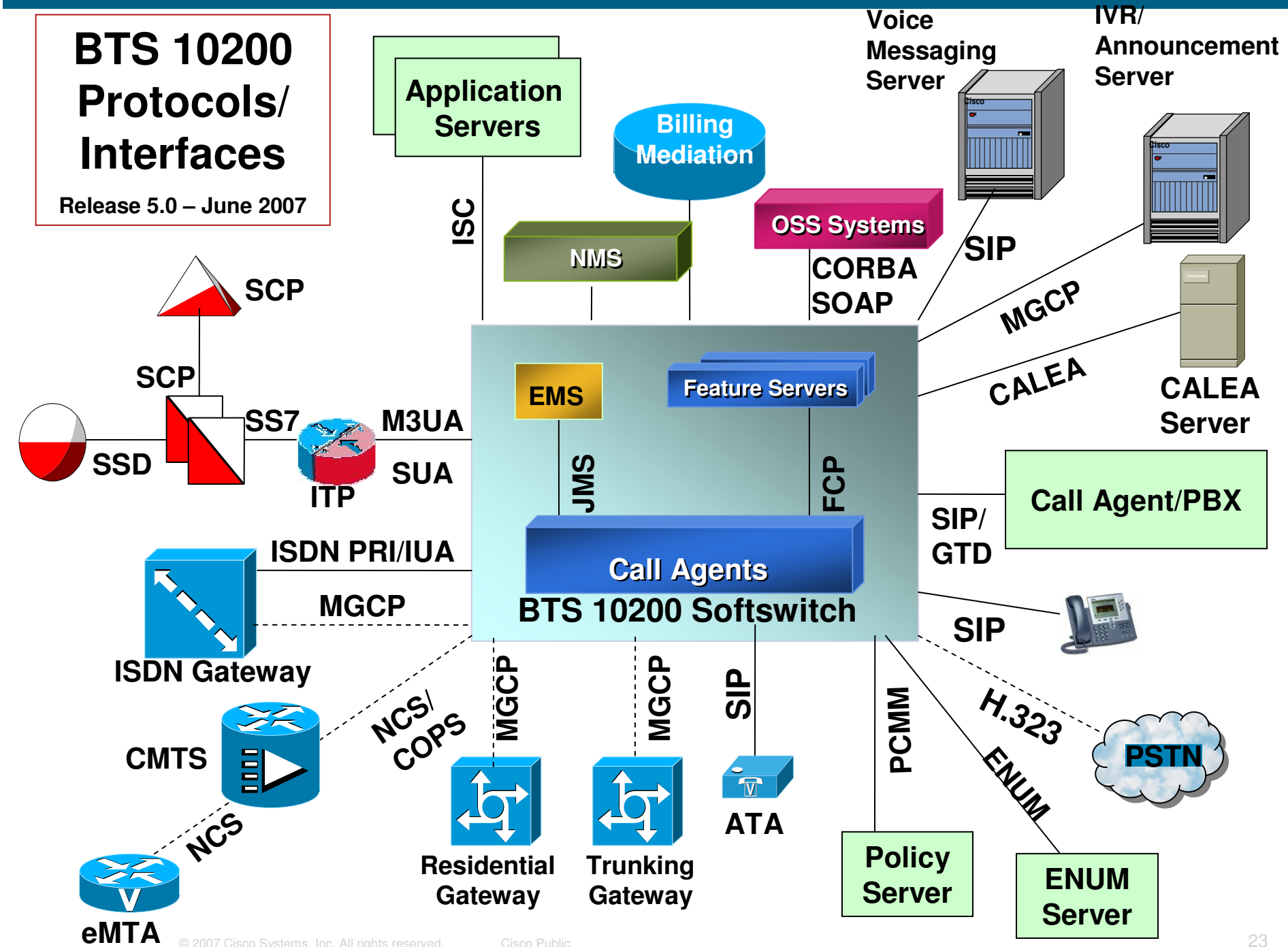
Providing Packet Voice and Call Control Intelligence for Softswitch Networks

Cisco BTS 10200 Softswitch

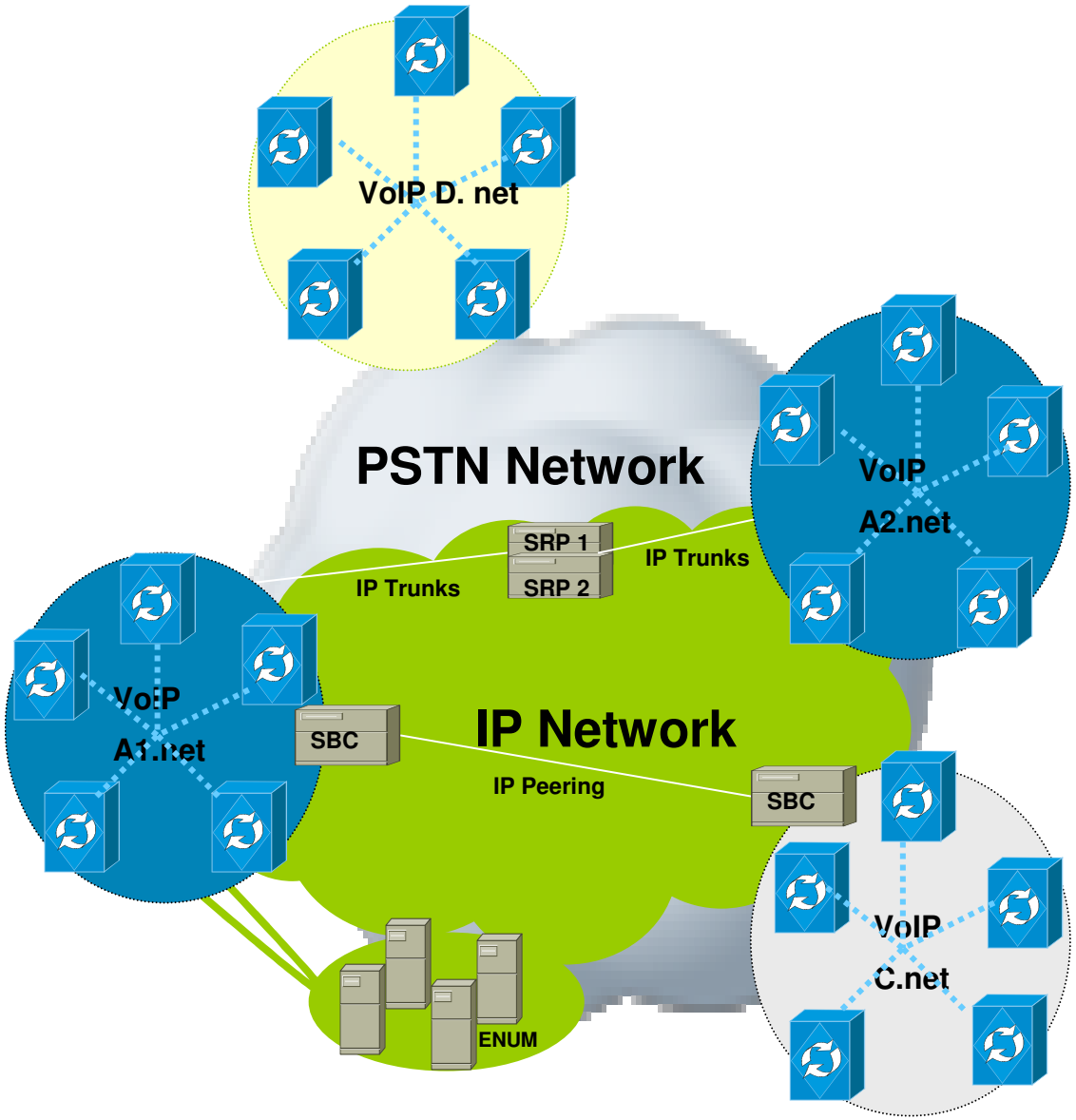


BTS 10200 Protocols/ Interfaces

Release 5.0 – June 2007



BTS10200 ENUM Routing



Key Benefits

No more internal migration of subscribers to keep NPA/NXX aligned

No longer have to launch LNP query from your network

Simple Domain based Routing Policy for efficient on-net routing

Advance Domain based Routing Policy

Ability PSTN as Fallback for Call routing

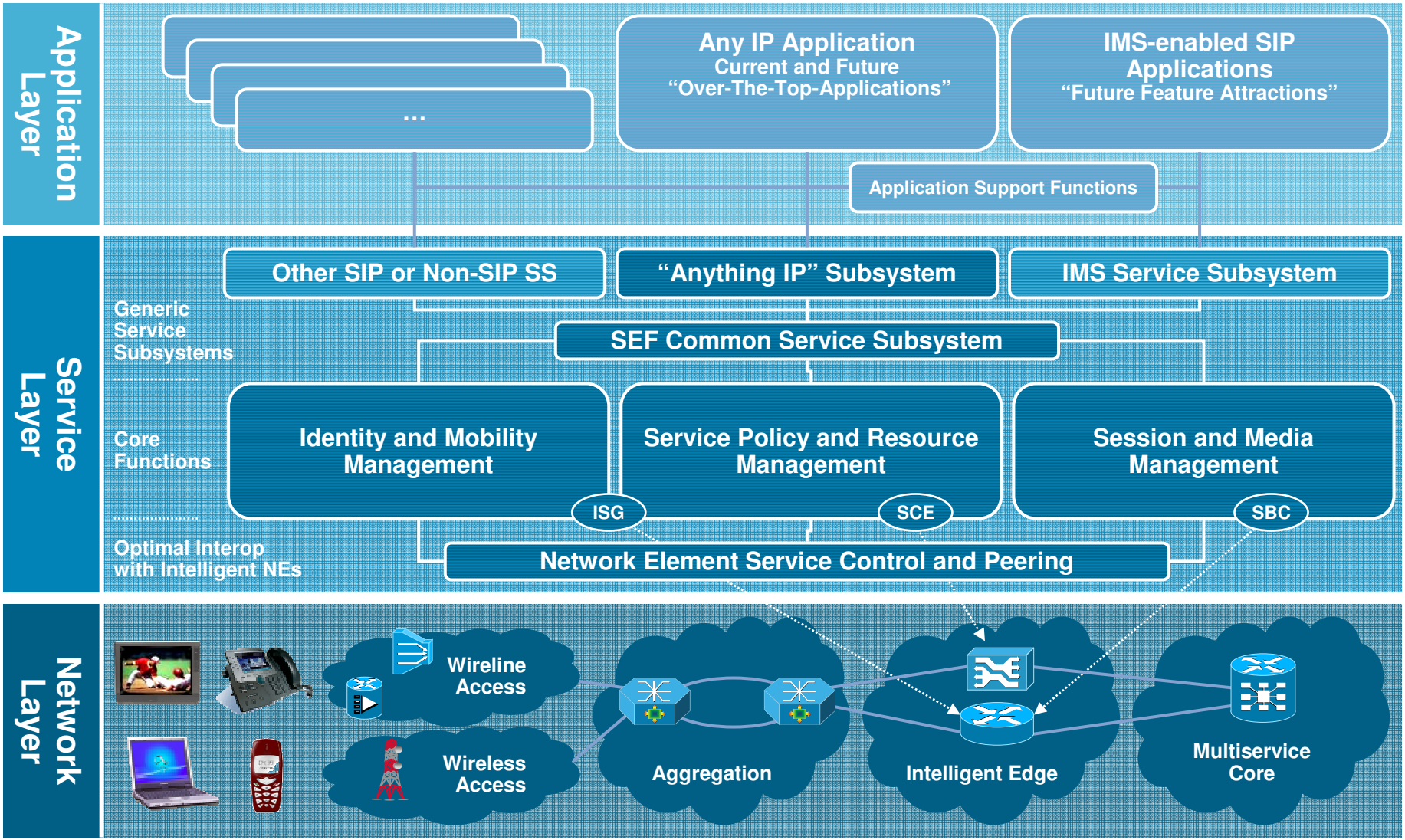
Domain re-writing using ENUM database

Rewriting Dialed AORs for name dialing

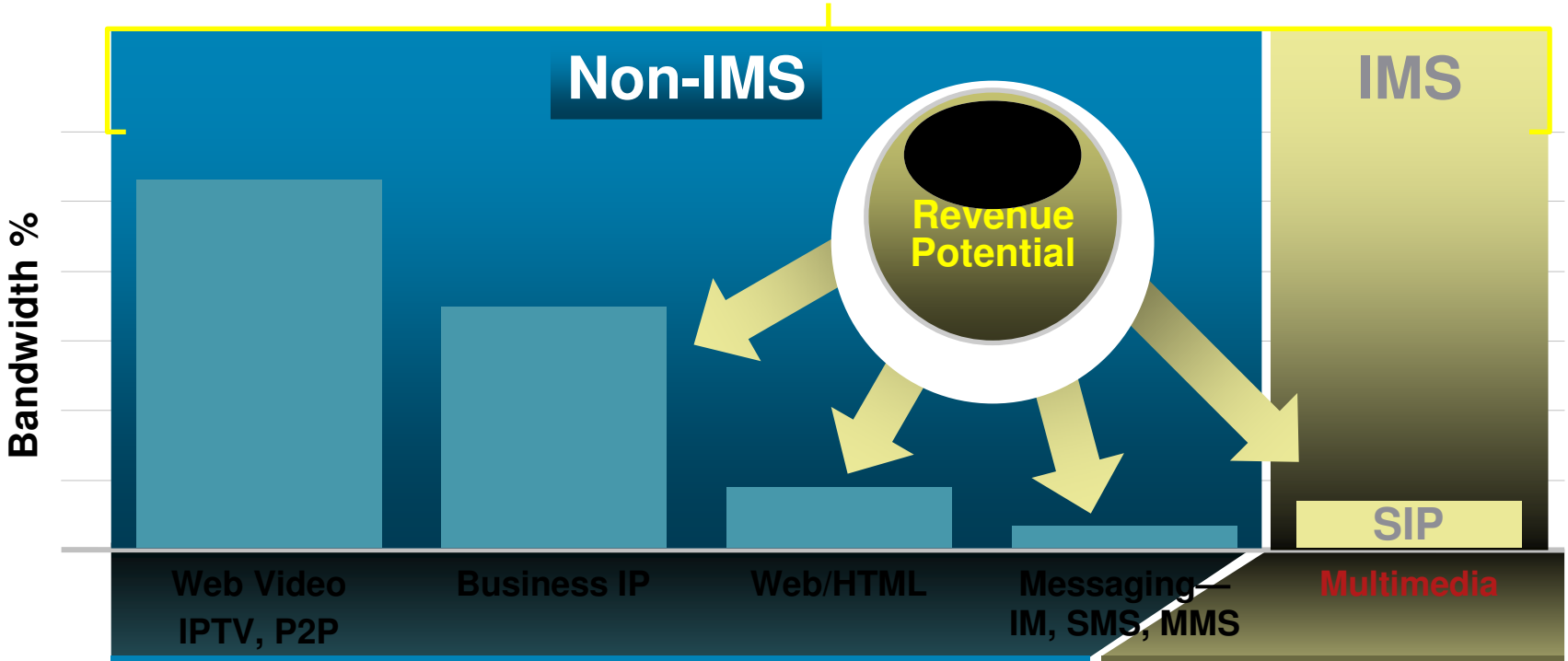
ENUM LNP instead of TCAP LNP in same ENUM query

Cisco IP NGN: Universal NGN Architecture

Enabling all Emerging Network Architecture Standards



Does IMS Solve All of the SP Issues?



Includes Non-SP Controlled Services:

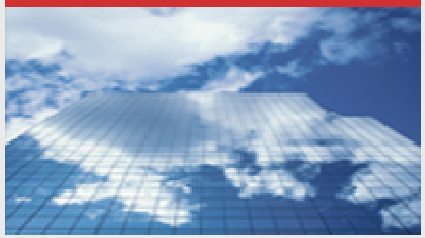
- Infinite apps, content, URL
- Unknown and known Subs
- Numerous devices and access
- Wide variety of protocols

SP Controlled Services:

- Known applications
- Known subscribers
- Known device-types
- Limited protocol set

Cisco Service Provider Vision

Connecting Customers with Services, Services with Networks, and Networks with Each Other

Consumer	Small/Medium Business	Enterprise	SP Wholesale
			

IP Next-Generation Network