



台湾大哥大

Adapt SOA for mobile service development

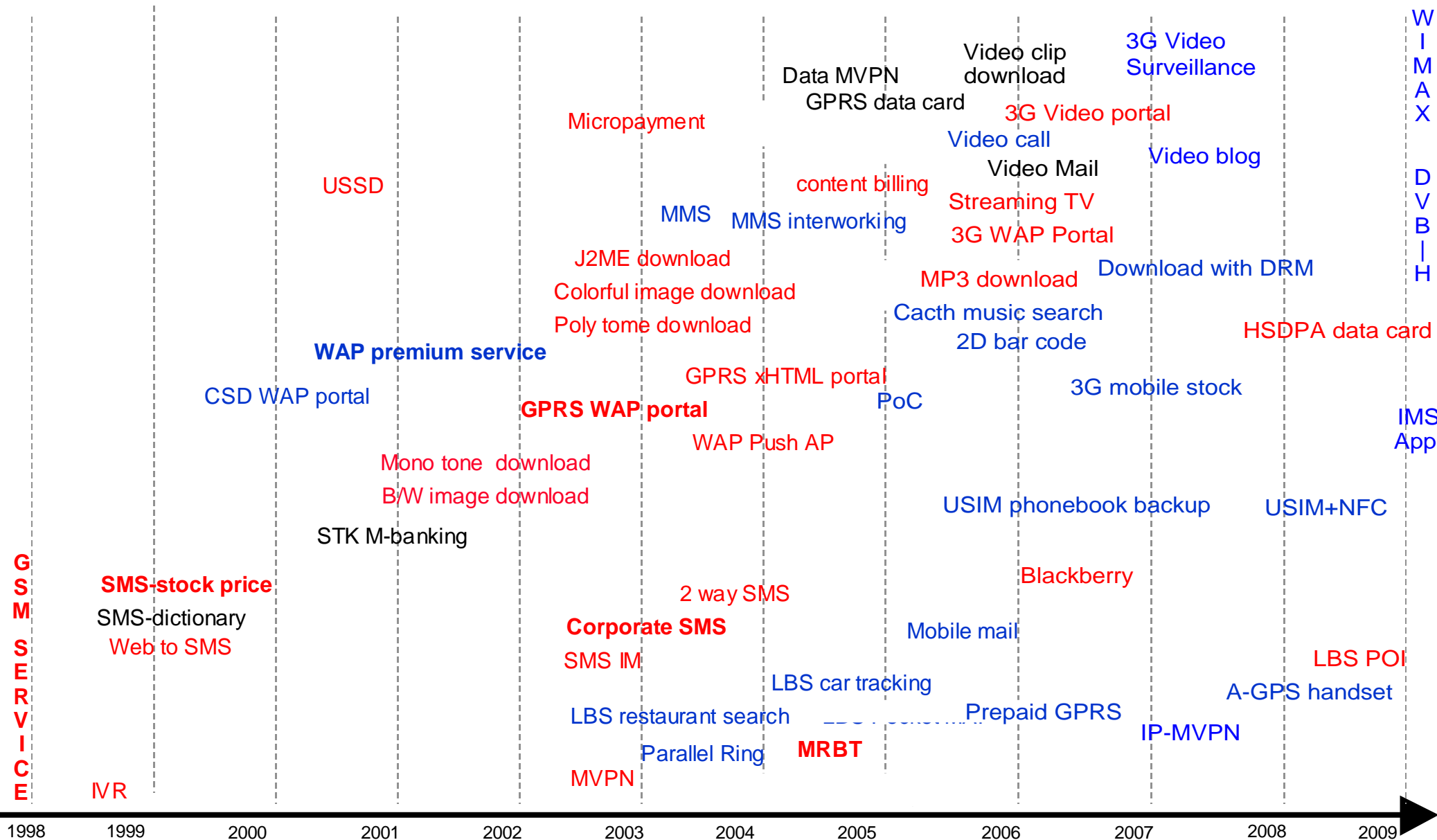
**T.C. Juan
VP new technology
Taiwan Mobile Co.,Ltd.**



- Evolution of mobile service/application development
- NGN convergence service architecture
- Mobile service re-engineering
- SDP + IMS + SOA + Web 2.0 integration in NGN
- Why we need SOA for service development
- IMS service management with SOA



Evolution of Mobile VAS in Taiwan





Categories of Mobile VAS

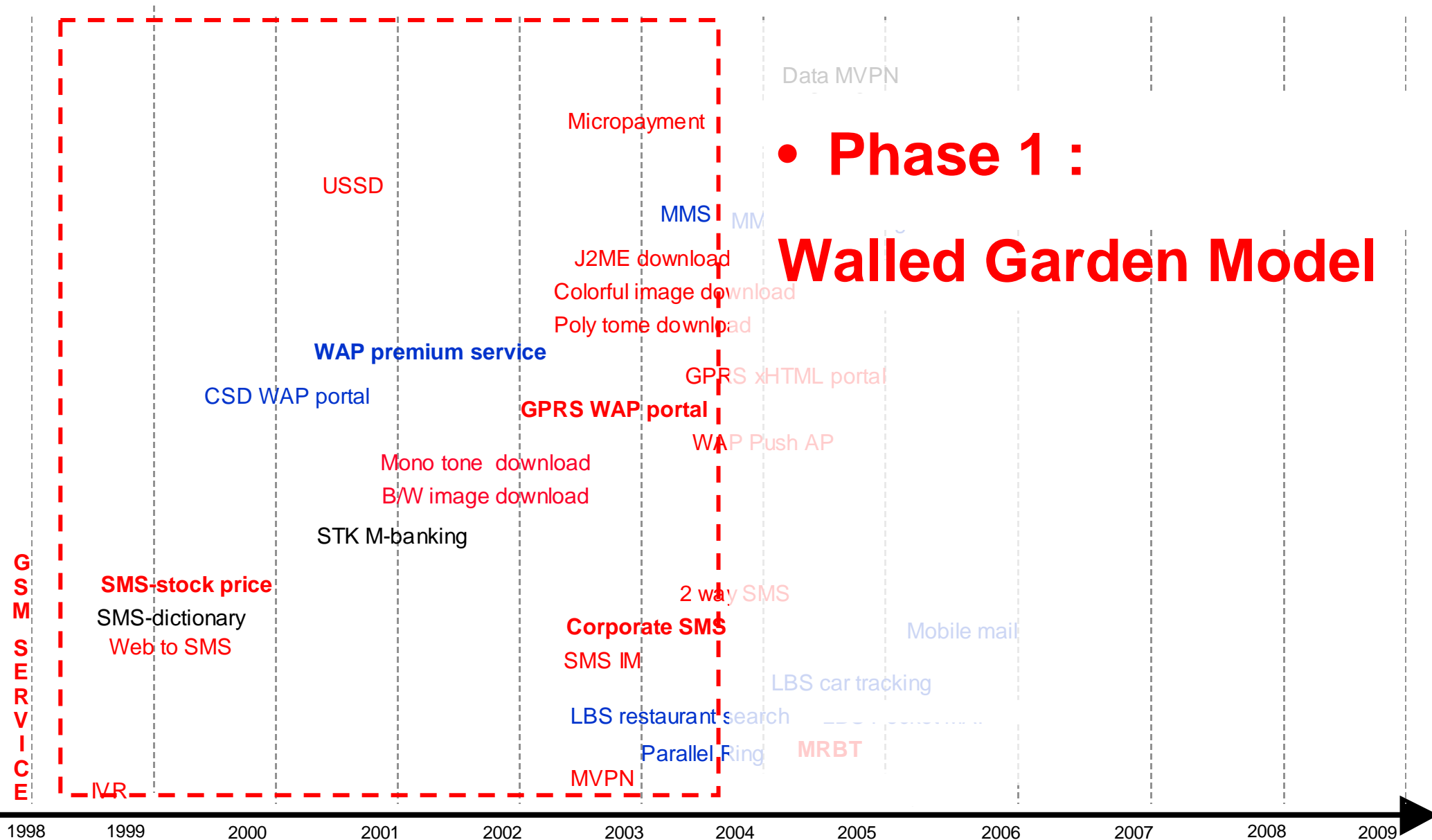
	<u>SP/CP involved</u>
• Communication services	
- Web SMS/MMS	V
- anonymous voice/SMS chatting	V
- IM/PS, V ² oIP Application	V
• Data access services	
- 3G data card, HSDPA data card	-
- WiMAX data access	-
• Content delivery services	
- IVR voice content (news, weather, stock info, etc.)	V
- content browsing (news, information, search, etc.)	V
- content download (music, image, video clip, game)	V
- video content streaming (MTV, TV, surveillance)	V
- video broadcasting	V
• Enterprise services	
- Push mail, Blackberry	V
- Dialer, MVPN, IP-MVPN	V
- Mobile data VPN, LBS fleet management	V
- IMS based MVPN	V



Mobile VAS Development Approach

• Phase 1 :

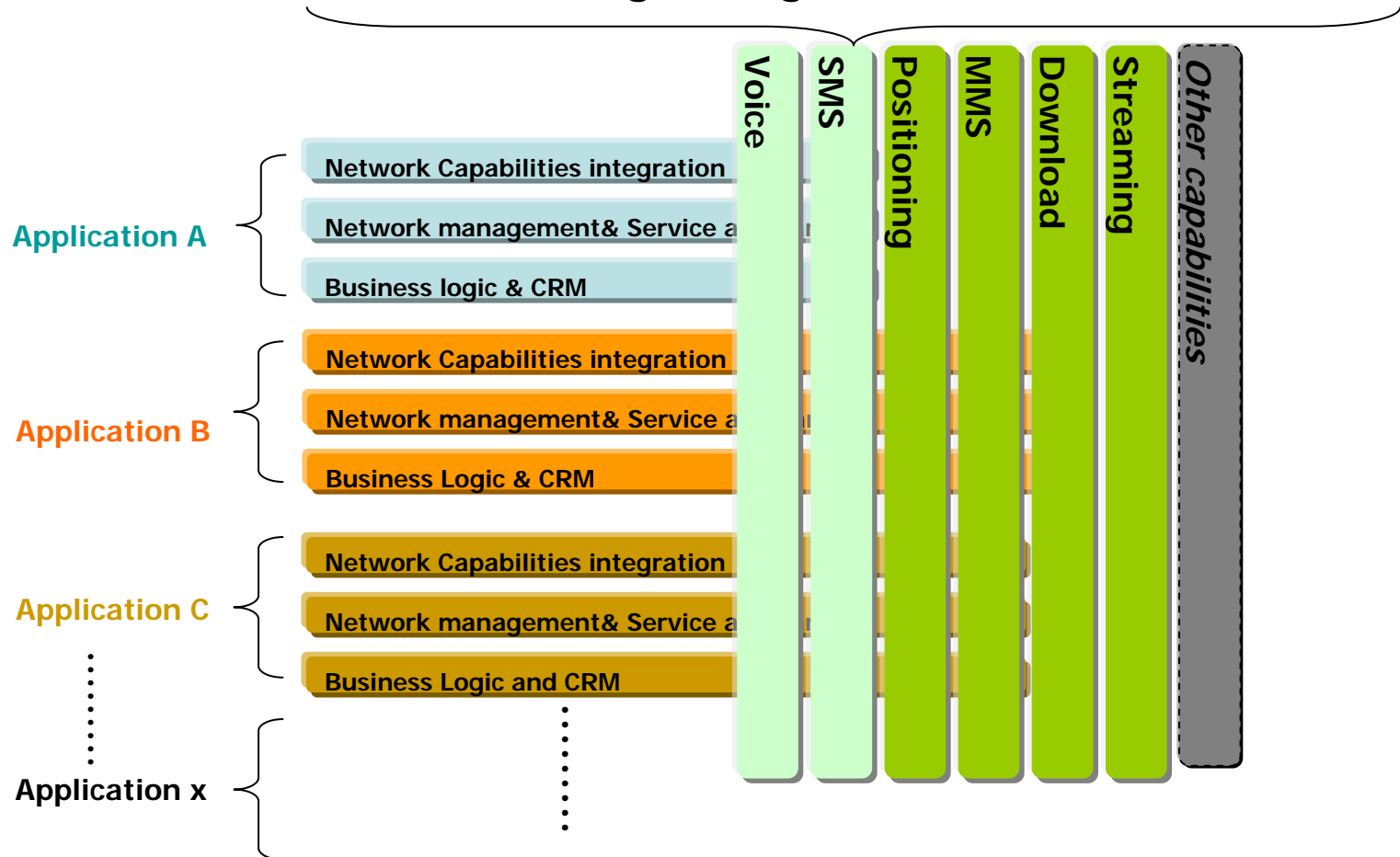
Walled Garden Model





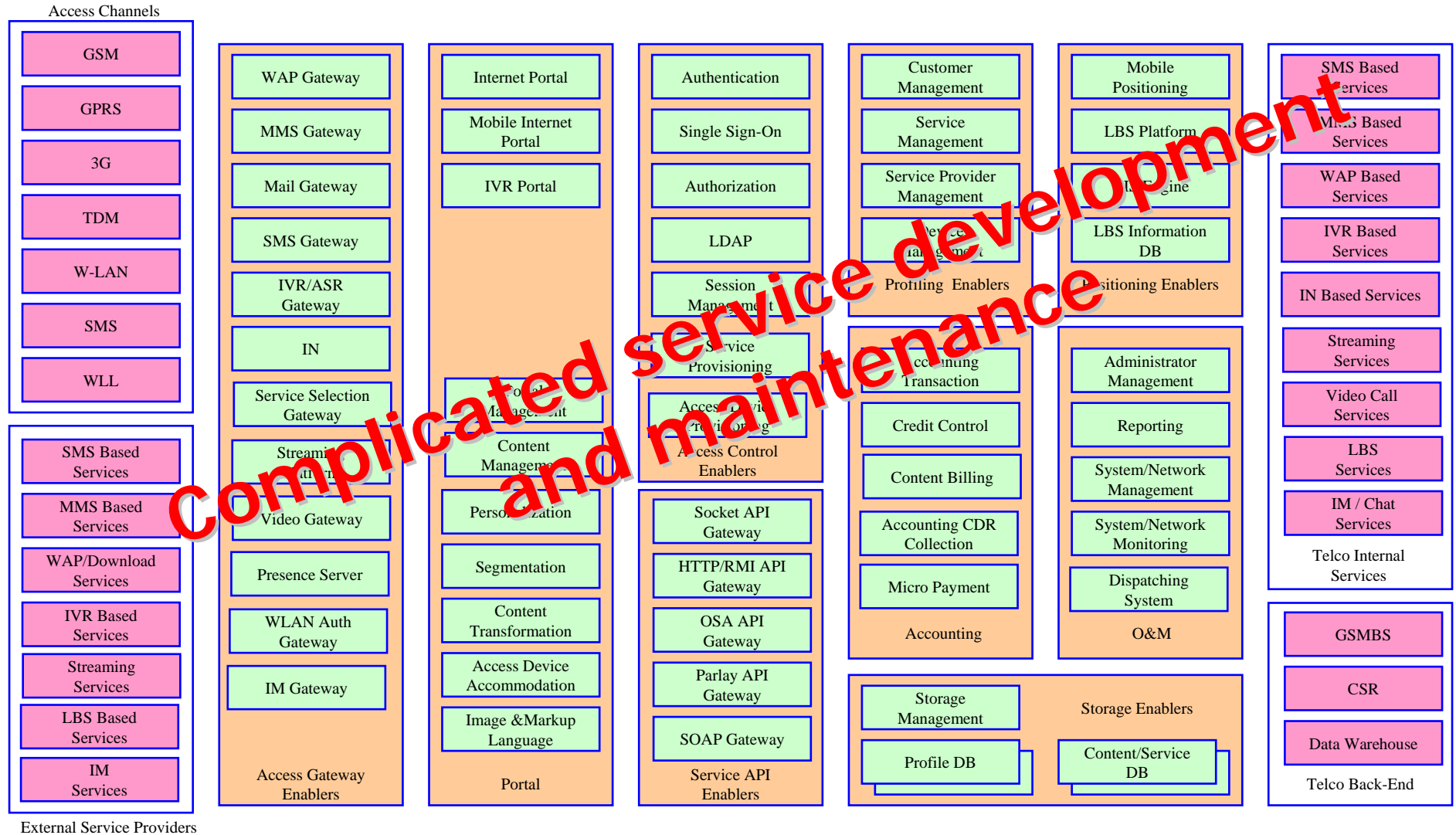
Legacy Walled Garden Service development Model

Service is triggered by independent network capabilities
with huge integration efforts



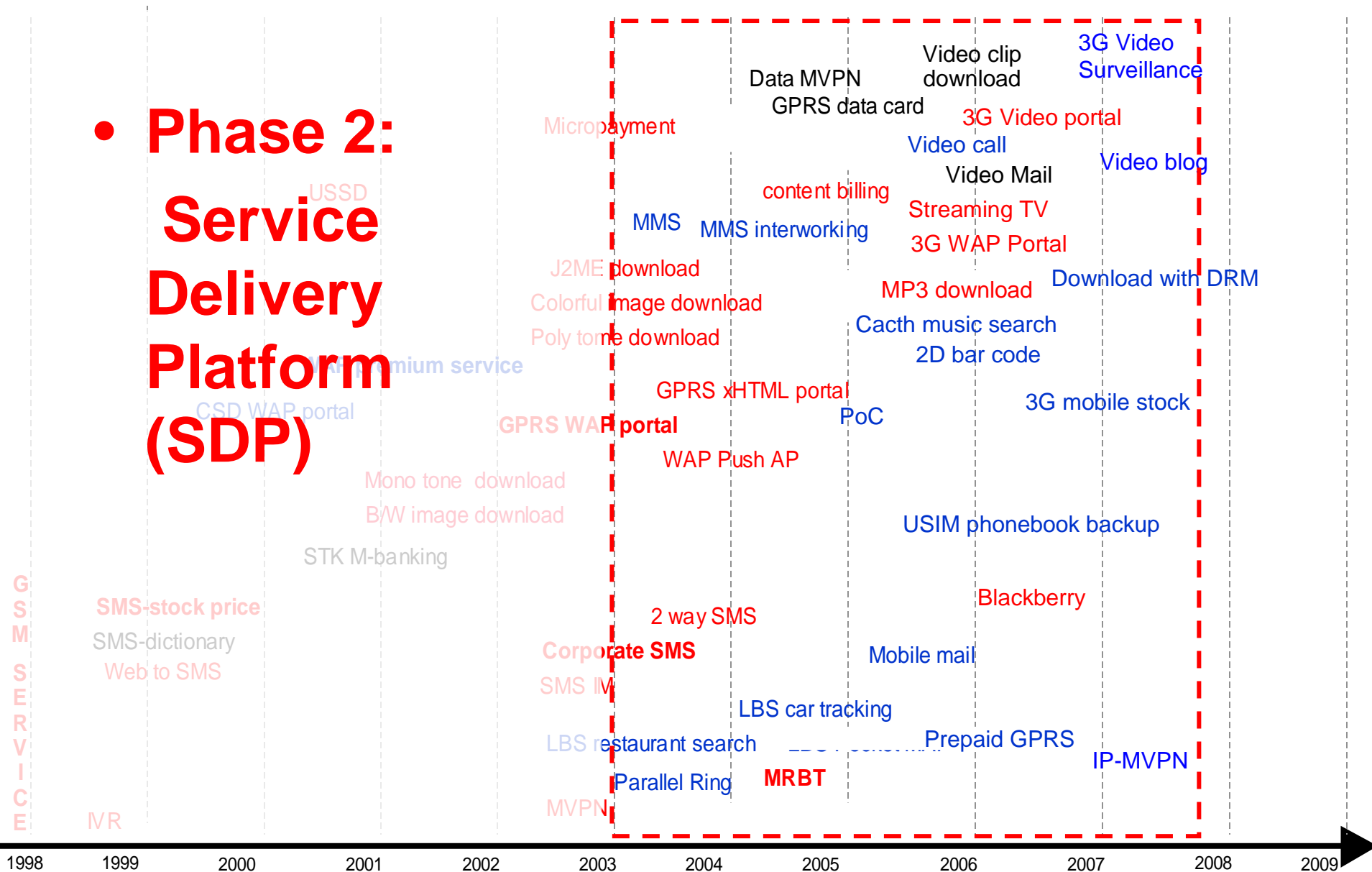


Legacy Mobile Service Architecture



Mobile VAS Development Approach

• Phase 2: Service Delivery Platform (SDP)





Service platform evolve from Vertical architecture to Horizontal architecture

Vertical Architecture

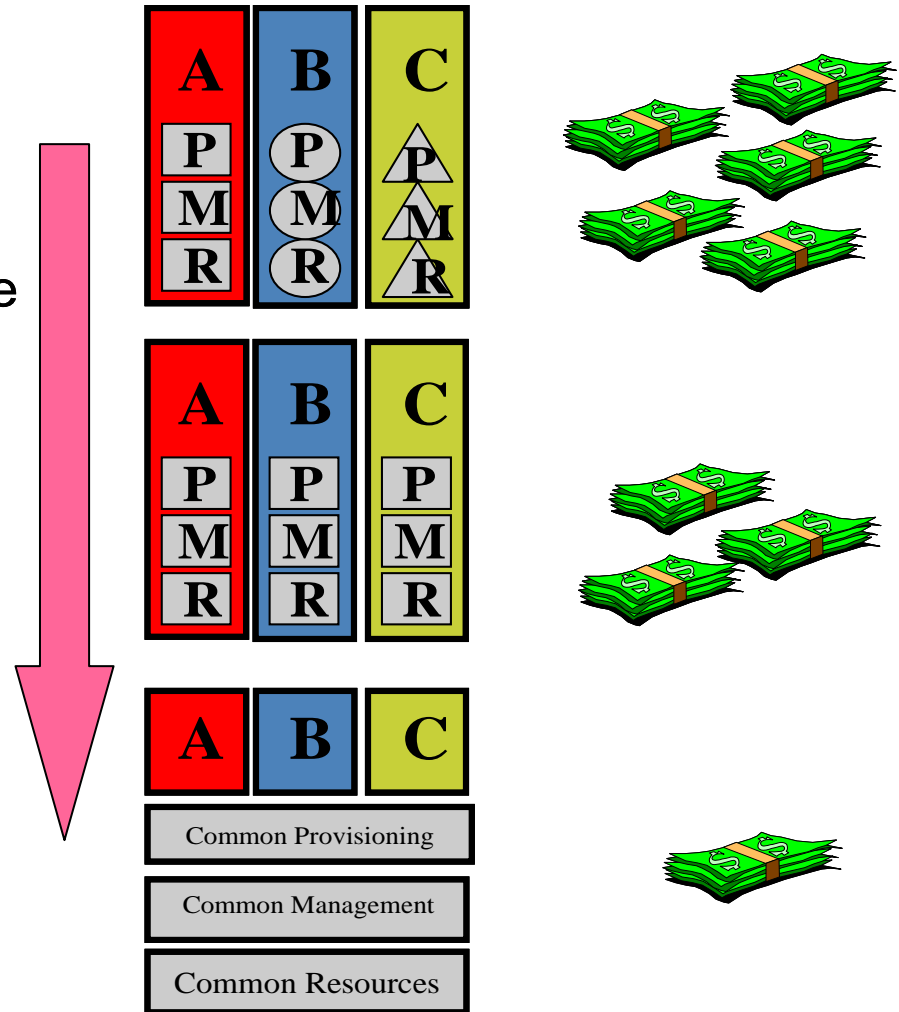
- Own Provisioning, Management and Resources (customer database) by each service
- Heavy investment
- High cost for O&M
- Increased TTM

Follow Common Framework

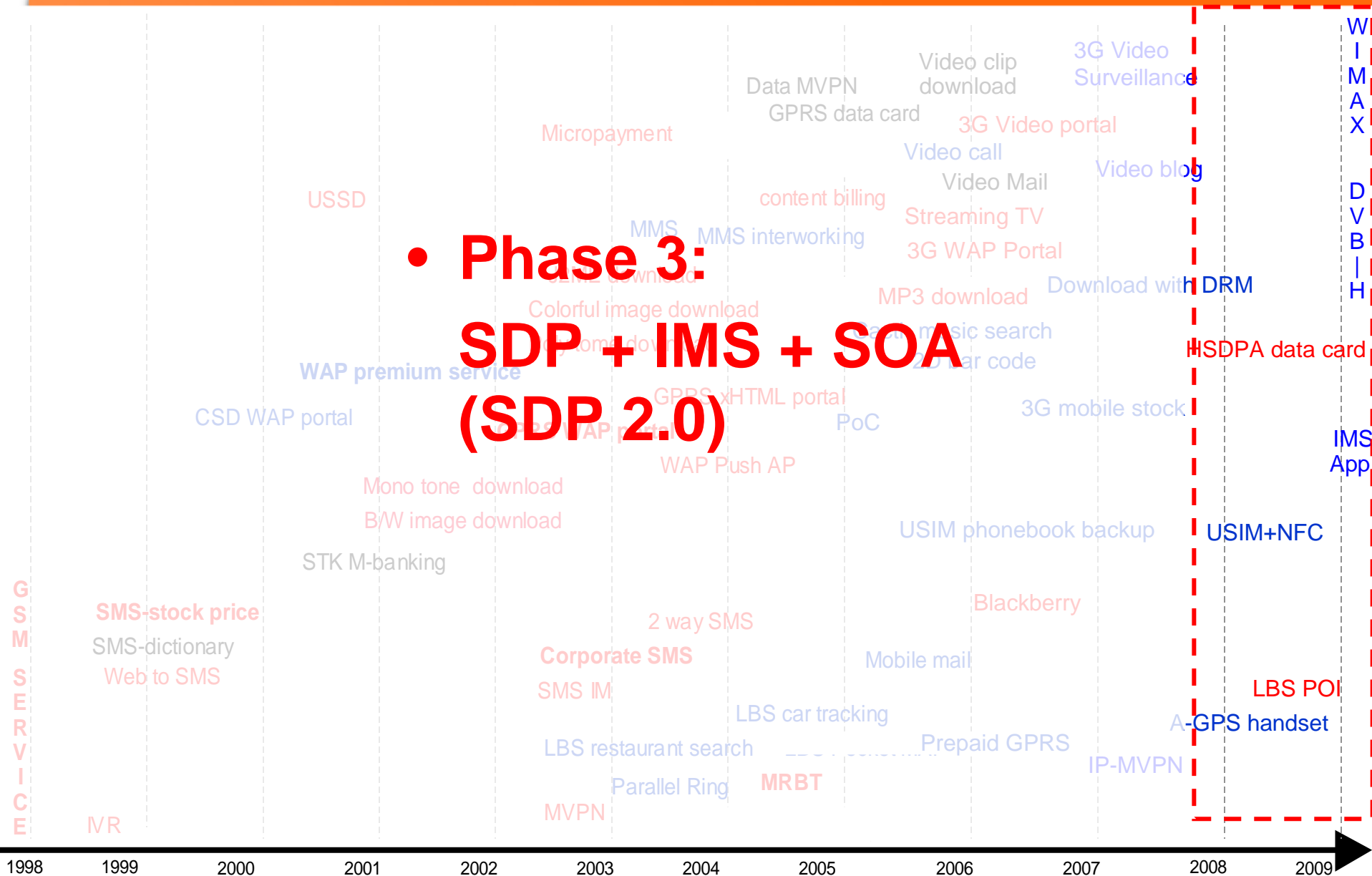
- Reuse common services

Horizontal Architecture

- Minimising cost
- Minimising OPEX
- Decrease TTM



- **Phase 3:**
SDP + IMS + SOA
(SDP 2.0)





Telecom Network & Services Evolution

Telecom Services

Voice & Messaging



Multimedia & Presence
Voice & Messaging

Service Network

Walled Garden



Horizontal Service delivery

Core Network

Circuit switched
SS7



Packet switched

IMS

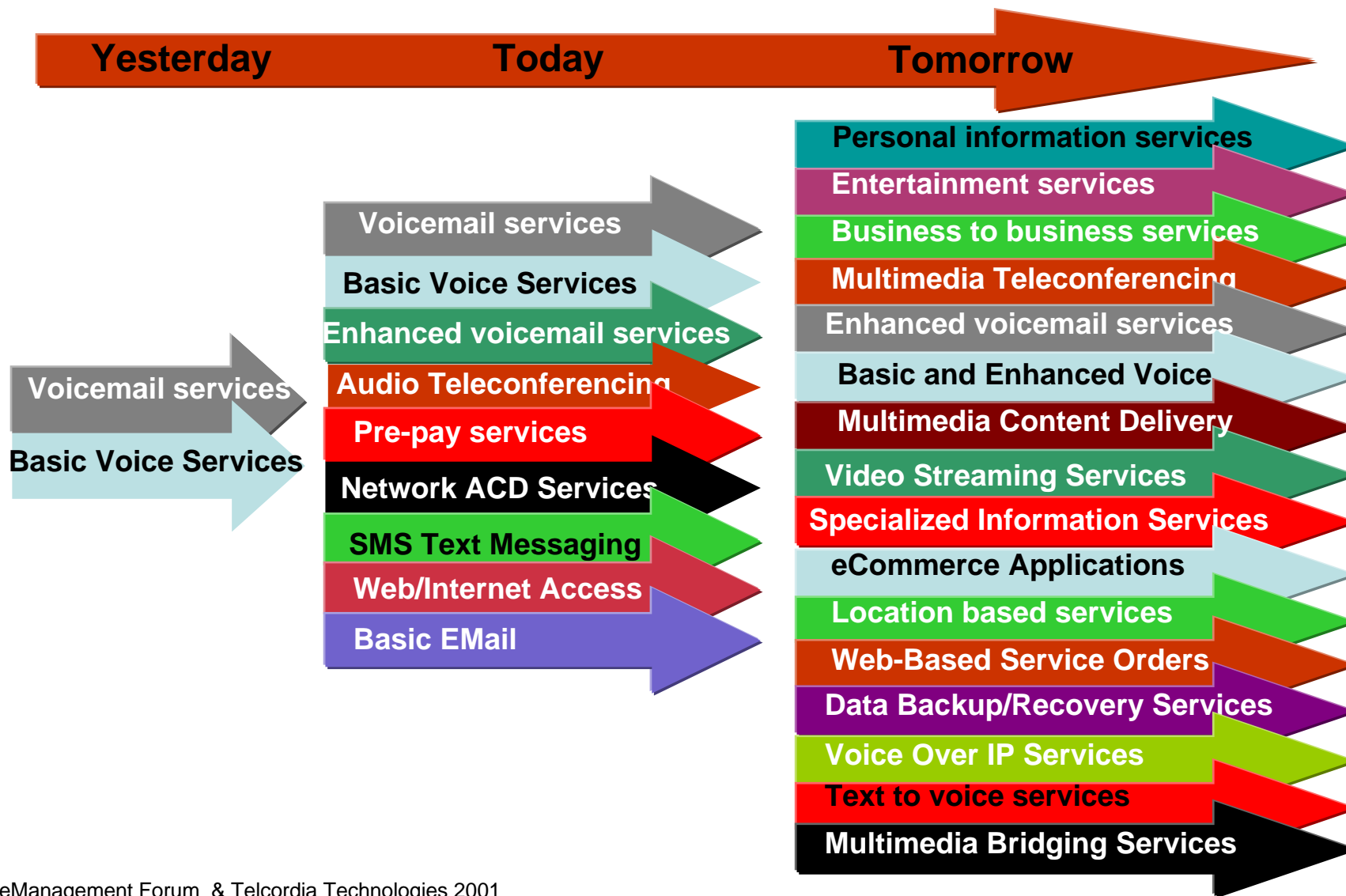
Access Network

Single Access
Narrowband



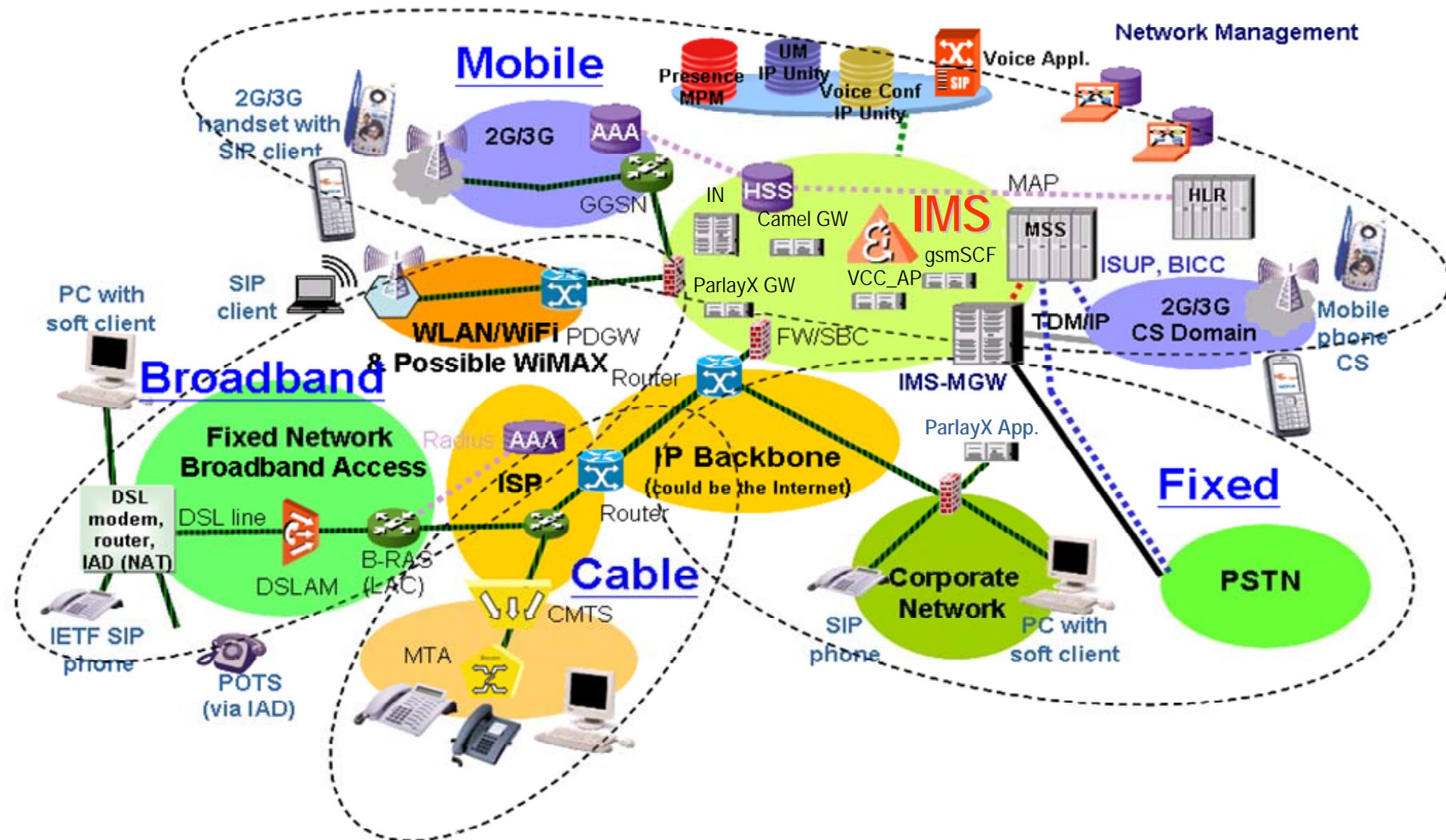
Multi Access Broadband

Services are Multiplying





Next Generation Service Convergent Architecture

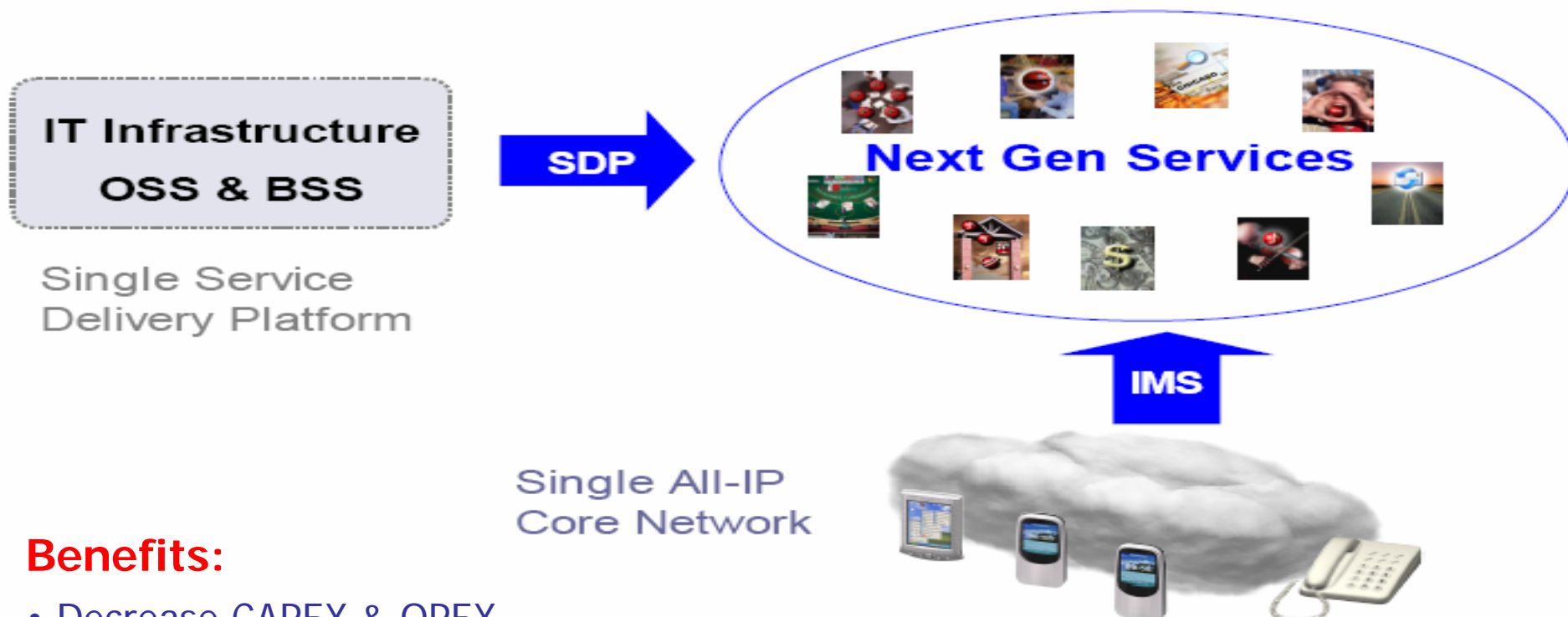




Benefit of IMS architecture

- Single service control platform to facilitate long-term innovative services – OPEX and CAPEX saving
 - IMS core (Single platform for multiply different access network, i.e. Mobile, fixed, cable VoIP, FTTx, DTV/IPTV,..)
 - IMS Application server (Host application with unified & simple 'SIP' technology)
 - IMS CAMEL gateway (reused legacy IN platform investment)
 - Parlay X interwork with 3rd parties web 2.0 applications (Leverage Internet CP portal resources)
- Due to reduce control nodes and adapted few control protocols & technologies, create new opportunity to achieve better service management architecture – OPEX and CAPEX saving
 - Service fulfillment
 - Service assurance
- Scalability and time to market service delivery – reduce OPEX & CAPEX

Enabling Next Generation Services

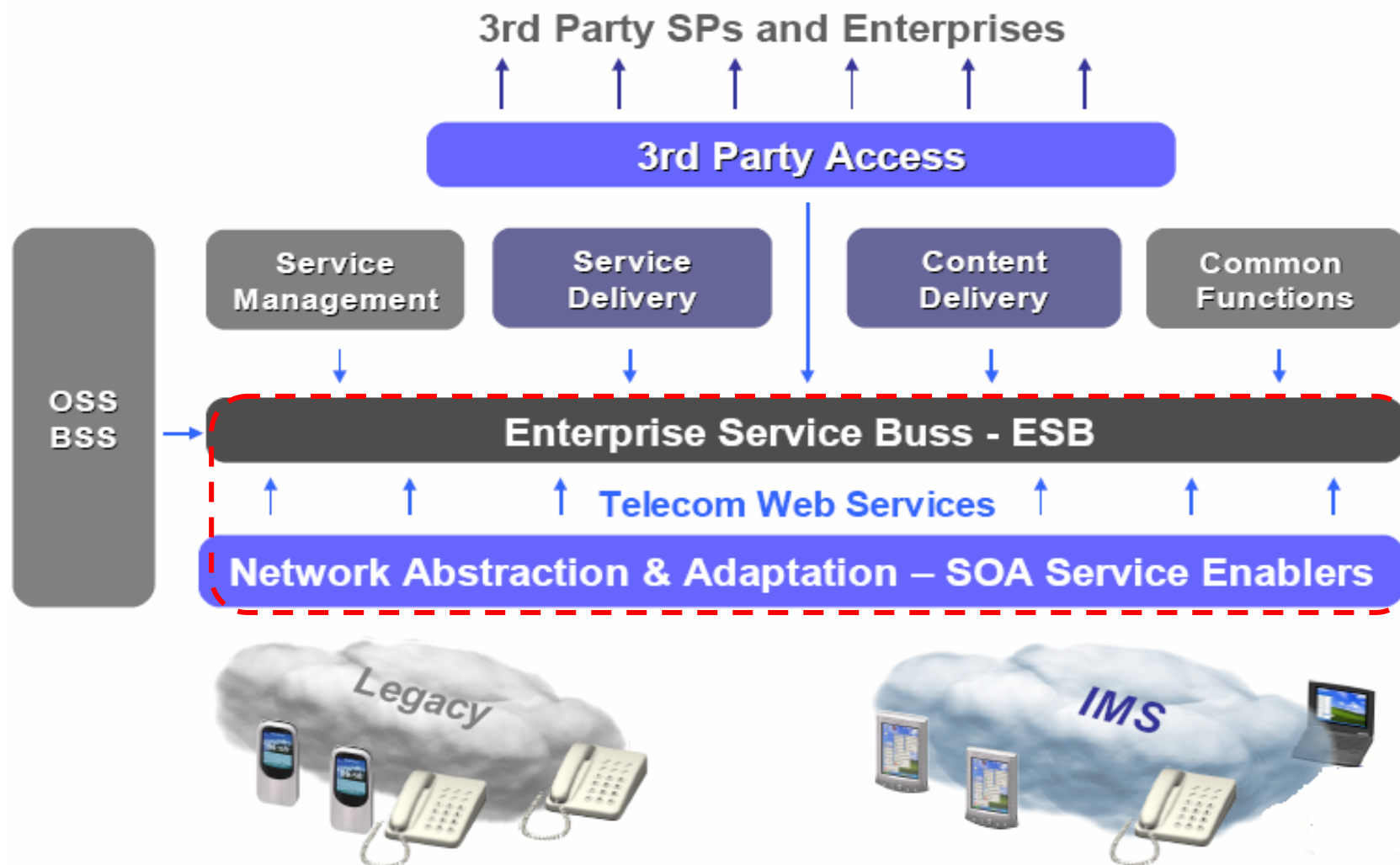


Benefits:

- Decrease CAPEX & OPEX
- Service continuity and seamless service migration
- Stimulate service innovation by enabling pen biz model with 3rd part service providers



Mobile service re-engineering -IMS+SDP with SOA Architecture

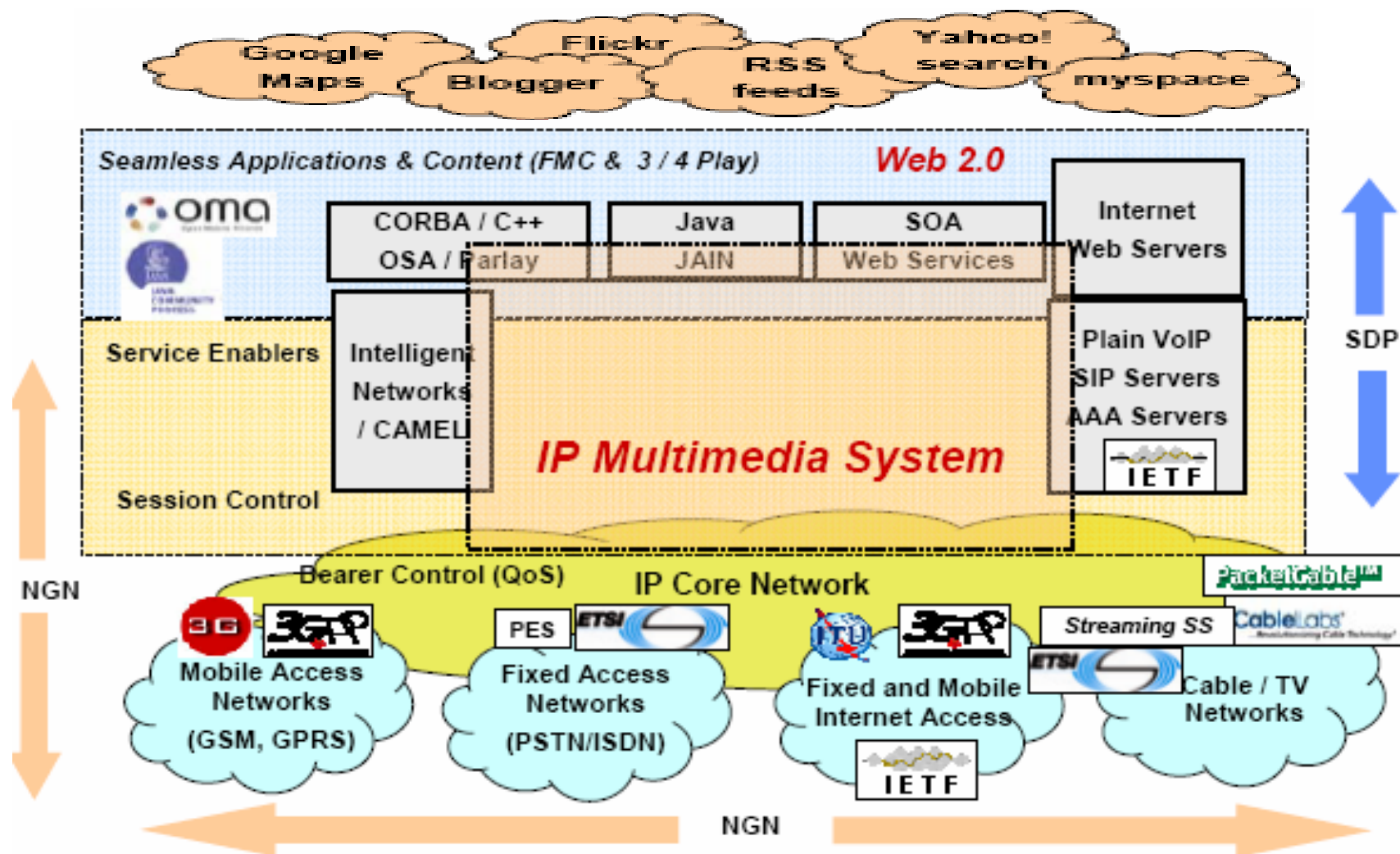


Parlay X IMS web service (web 2.0) for 3rd parties SPs

IMS Parlay X SOA Web services	Description
1. Common	Common infrastructure and XML definitions used by all the other services
2. Third Party Call	Connect call between two IMS terminals using your application.
3. Call Notification	Sends a status notification to your application when a caller makes a call, ends a call.
4. Short Messaging (SMS)	Allows your application to send out a SMS, receive a SMS.
5. Multimedia Messaging (MMS)	Allows your application to send out a MMS, receive a MMS.
6. Payment	Online charging Mechanism.
7. Account Management	Support account query, management, account direct recharge or charge with vouchers.
8. Terminal Status	Provide you with the status of an IMS Terminal.
9. Terminal Location	Provide you with the location of an IMS terminal
10. Call Handling	Allows your application to decide how to handle calls,forward a call, play audio for the incoming call...etc.
11. Audio Call	Provides a flexible way for the delivery of audio contents. E.g. VoiceXML, WAV, Text.
12. Multimedia Conference	Allows your application to create a multimedia conference, manage participants
13. Address List Management	Manage groups and members. Create, delete, manage access rights...etc.
14. Presence	Provide you with detailed location and presentity of an IMS Terminal.
15. Message Broadcast	Allows your application to broadcast a message to all the IMS terminals within a specified geograph.
16. Geocoding and Mapping	Transform the coordinates of a IMS terminal into a geographical location
17. Application driven QoS	Application controlled Quality of Service
18. Device capabilities and config.	Pushes the device configuration to a user's device by users' phone number and the configuration
19. Multimedia streaming control	Control the access right and management the charge for streaming services
20. Multimedia multicast session mtg.	allows application to control a multicast session and multimedia stream, and obtain channel presence information.



SDP + IMS + SOA + Web 2.0 integration in NGN





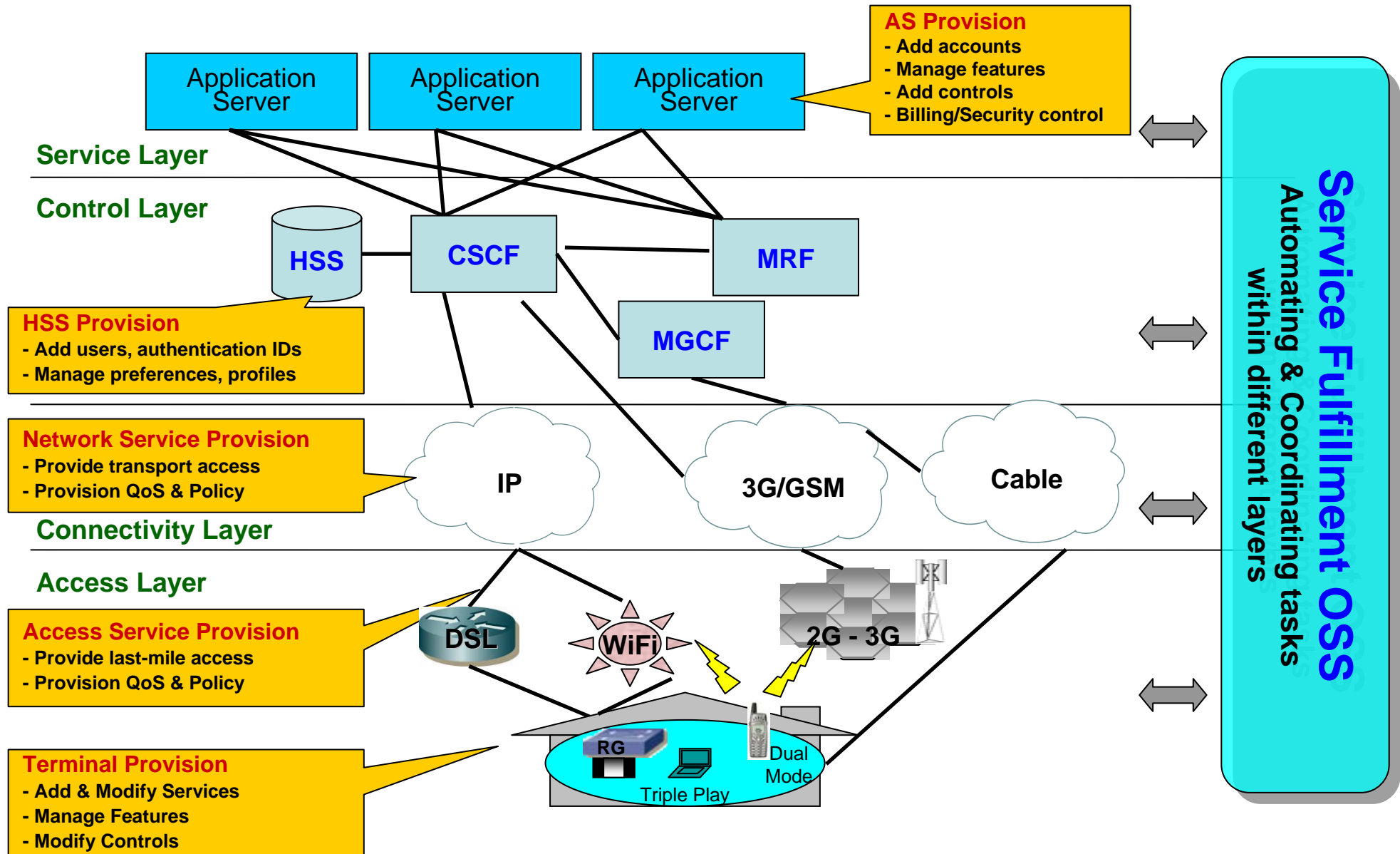
IMS Service management requirement

- IMS service fulfillment
 - Service fulfillment
 - Reduce provisioning operation cost
 - Saving CAPEX
 - Reduce OPEX
 - Self care portal framework
- IMS service assurance
 - Pro-active service monitoring
 - Increase customer satisfaction
 - Co-relative CP business development Web 2.0

- Challenge
 - Existing OSS system did not provide reliability, scalability and flexibility
 - Rapid service definition, deployment and provisioning of new services
 - Modular and configurable architecture needed to manage both network access service and “all play” IMS service offerings.
- Requirement
 - Need for IMS multiple network nodes (GSMBS, IMS, HSS, AS, CPE...) service provisioning.
 - Initial need for B2B BSS gateway
 - Deliver a common OSS architecture that can manage all current & future “all play” services



Example: Service Fulfillment in IMS service activation/provisioning



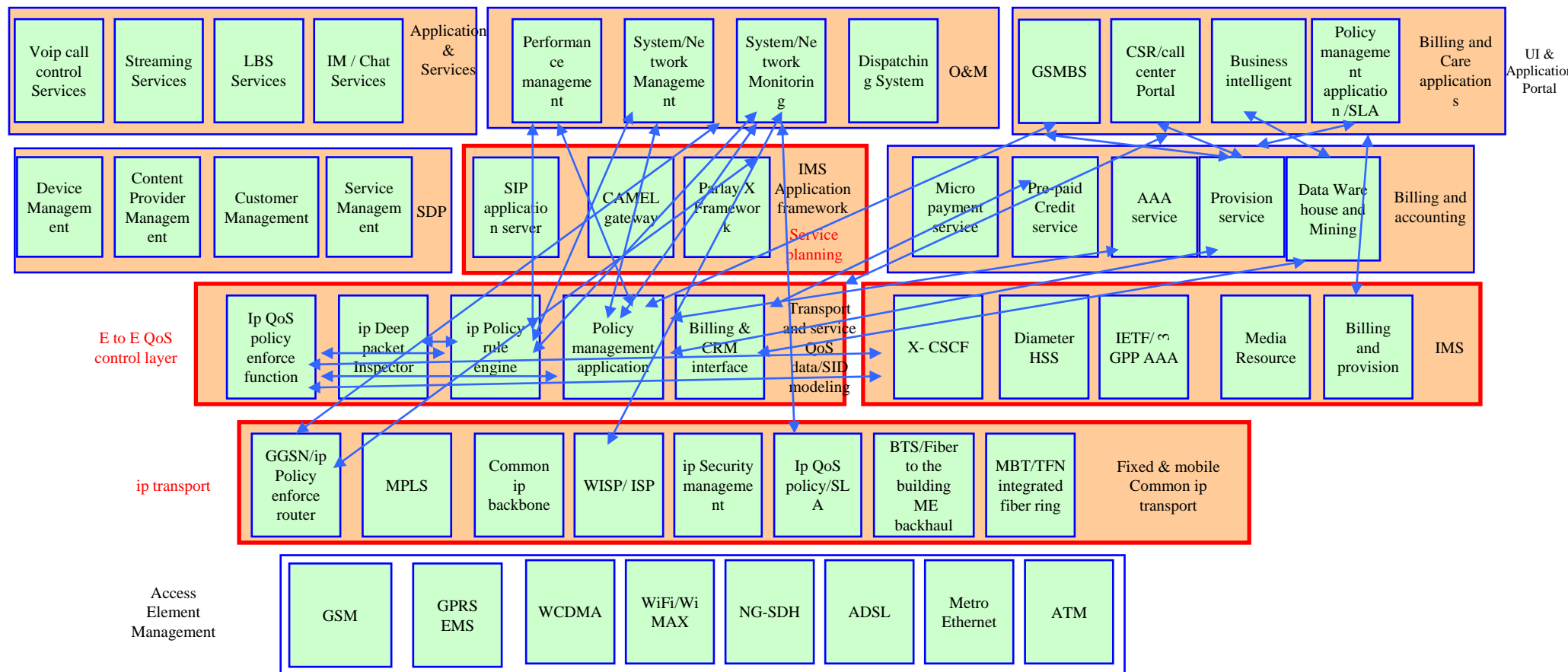


Why SOA for service development ?

- What SOA are for:
 - Unknown user requirement or business logic
 - Unknown user interface
 - Build up the data model first , can cope with the demand of later user application development
 - Re-used data model and long term saving of saving of CAPEX & OPEX
 - Easy to integration with ESB&BPM architecture
 - Authorization (Access control) 、 flow re-engineering 、 unified data formation 、
- SOA is the best solution for innovative service development with time to market and great flexibility benefit

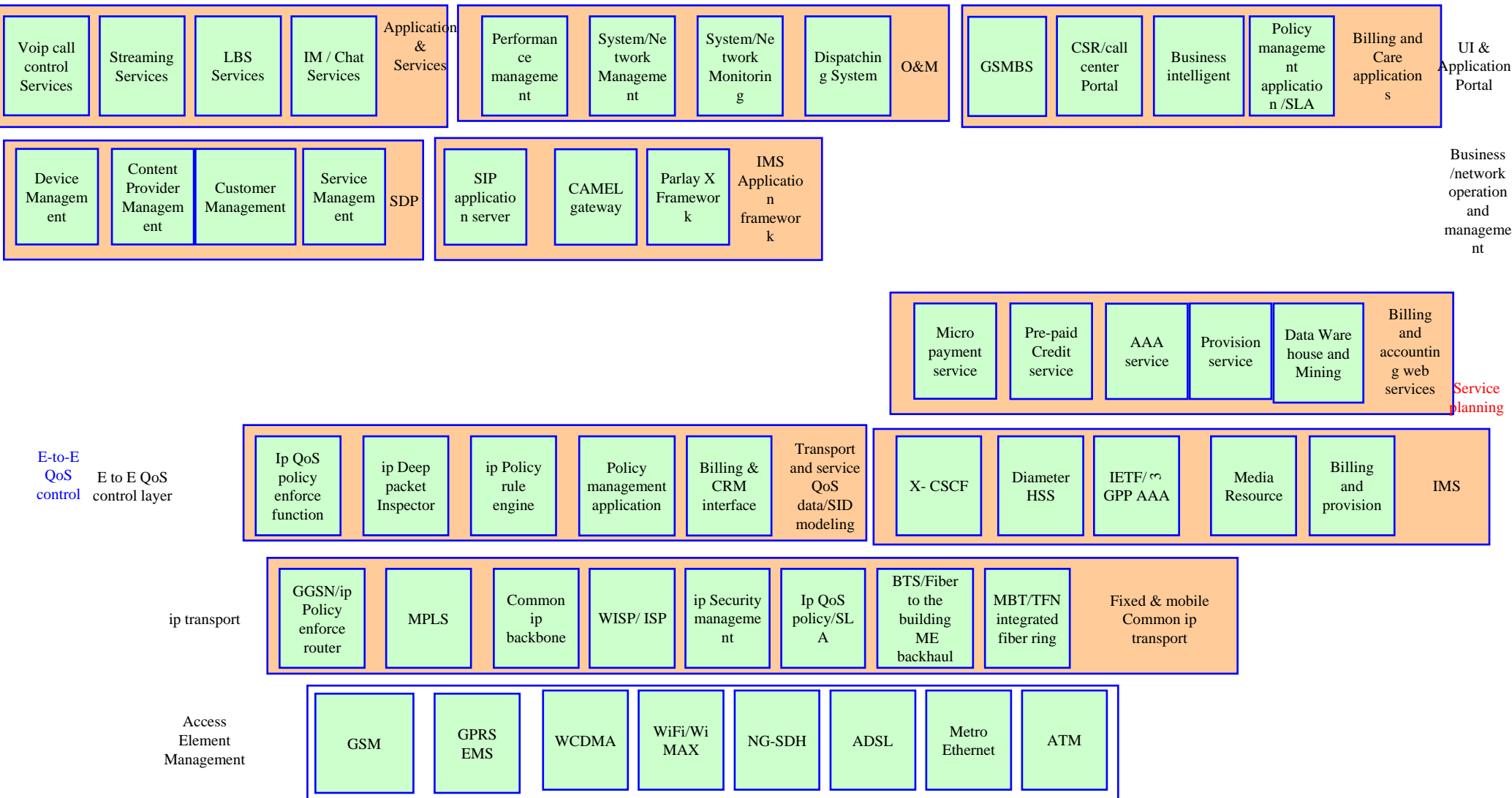


IMS service management architecture without new management support framework (Non-SOA)



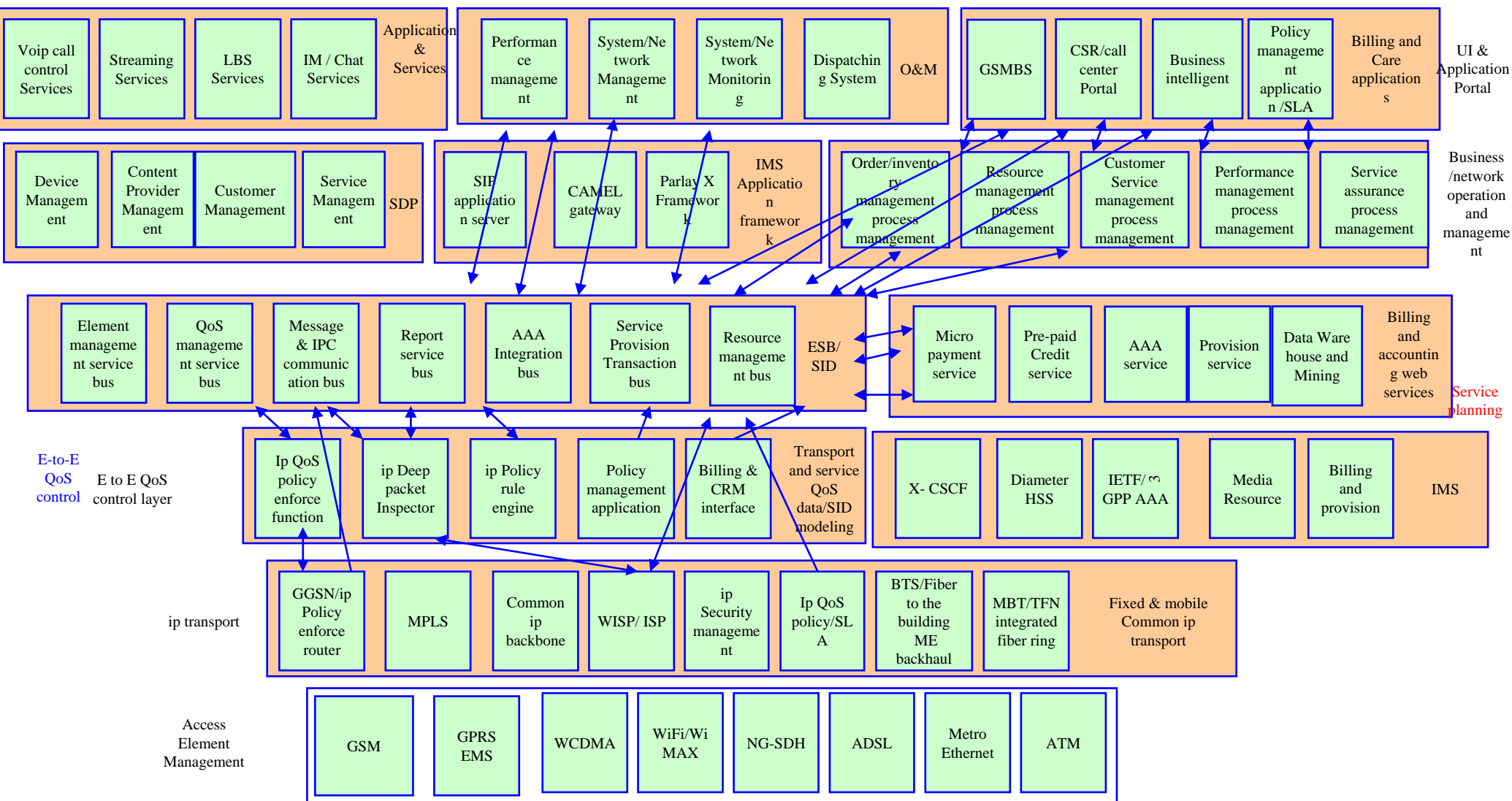


IMS service management architecture with new management support framework



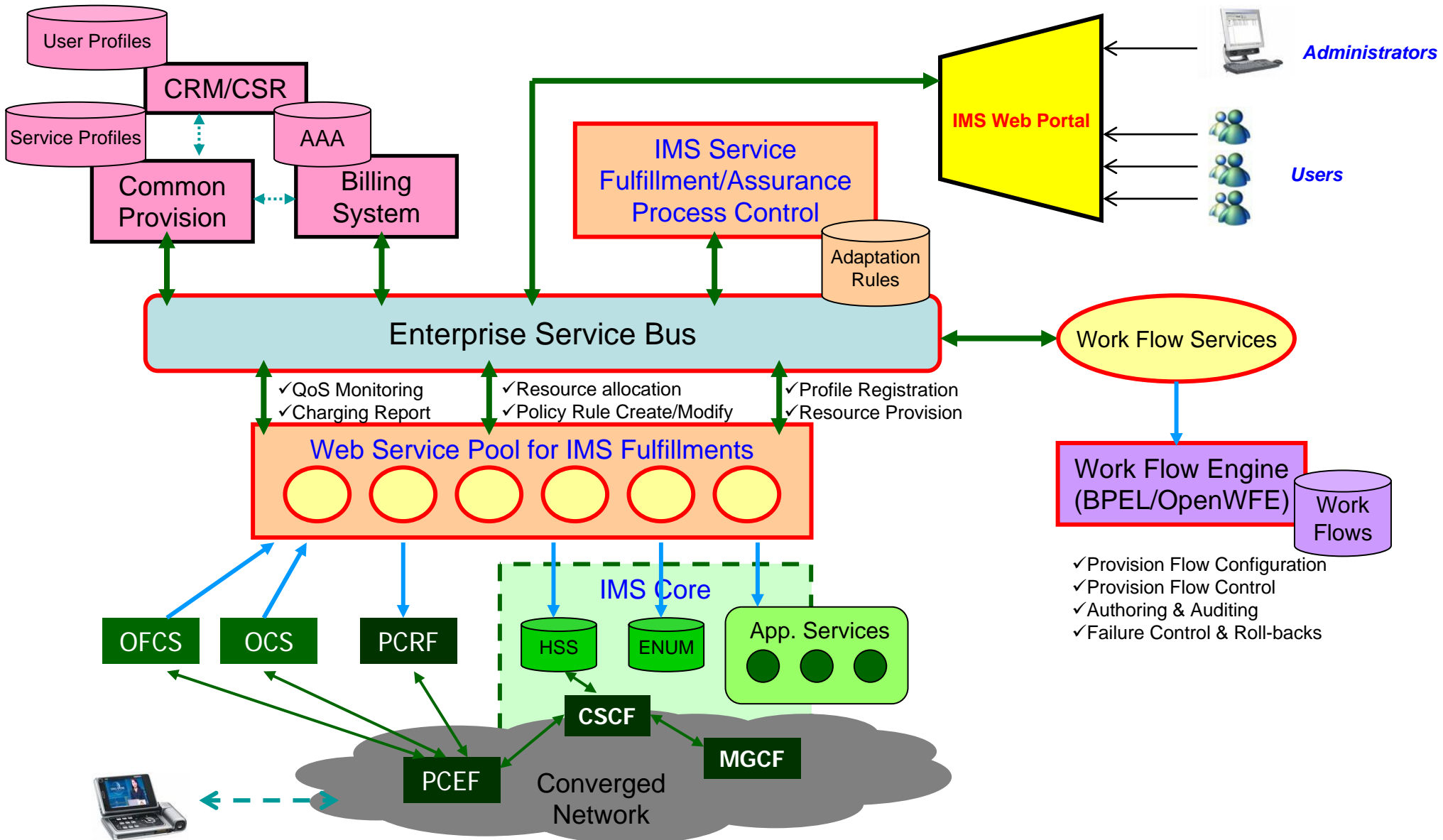


IMS service management architecture with SOA





Example: SOA-compliant Architecture for IMS Service Fulfillment





Thank You !