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Telecom Service Delivery Platforms in Next Generation Networks

Marco Carugi - Senior Expert, ZTE Corporation
ITU-T SG13 Vice-Chairman and Q.3/13 Rapporteur
Marco.Carugi@zte.com.cn

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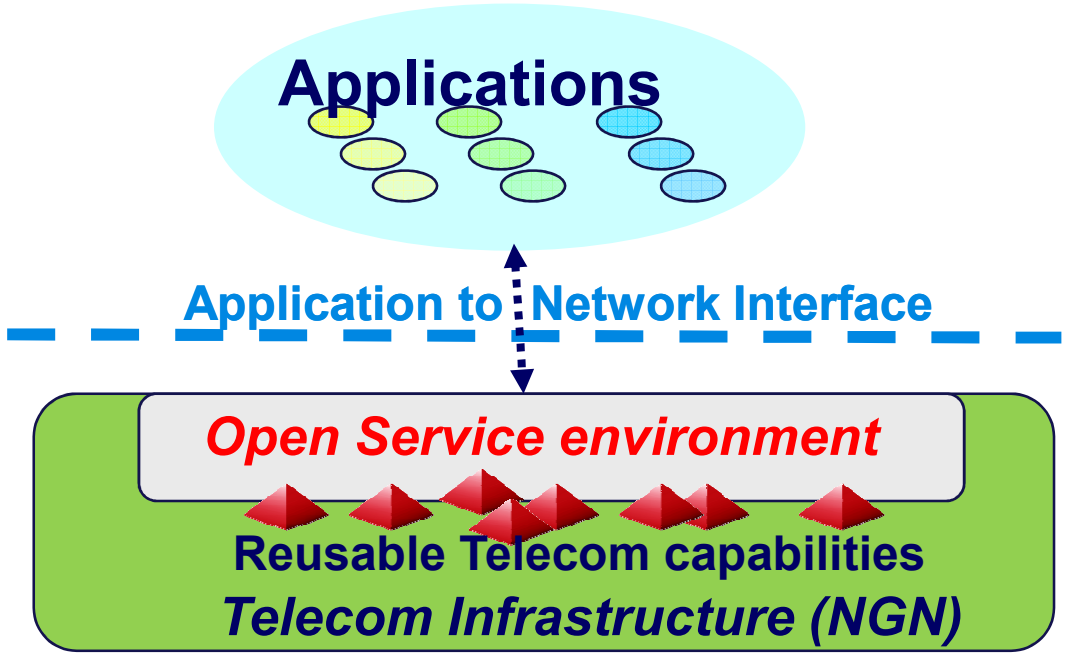
Outline

- Telecom SDP
- ITU-T NGN SDP developments
- Current status and evolution paths (SDPaaS)

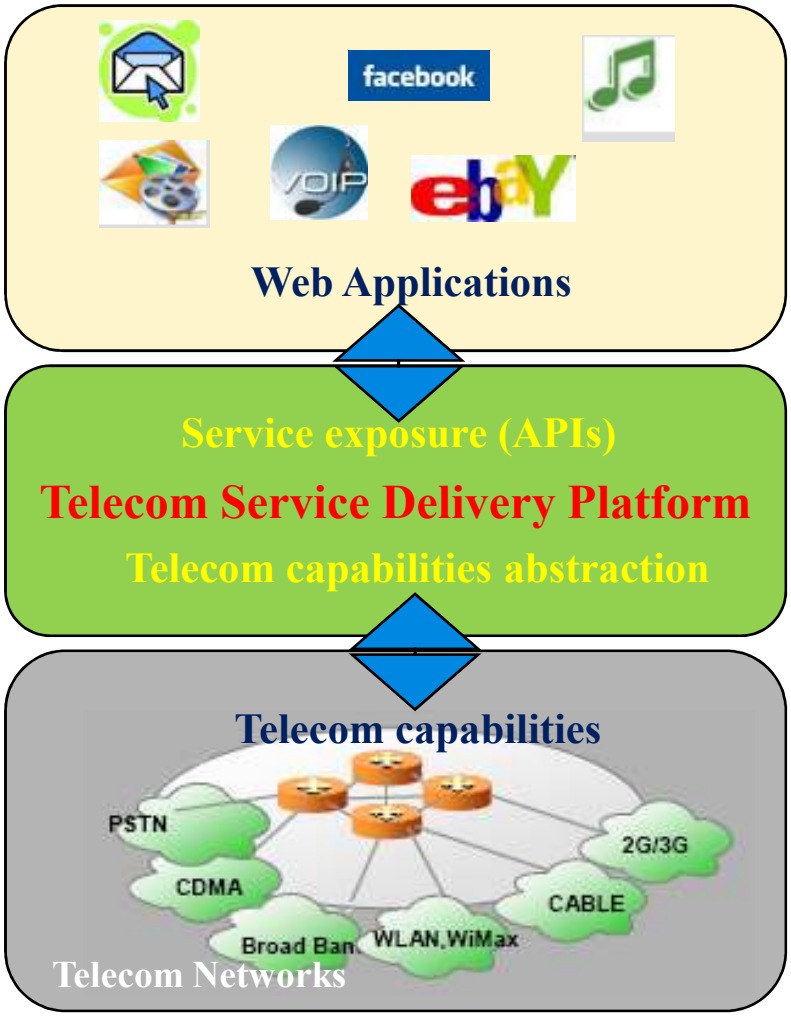
An open service environment for the Telecom Infrastructure



- **Reusable Telecom capabilities for reduced service development costs**
  - **Applying the development approach from IT industry to telecoms**
- **Open service environment for flexible and agile service creation, execution, management and deployment**
  - **"Rapid change" is key for satisfying the changing customer needs**
  - **New business opportunities via an environment integrating applications and telecom infrastructure**

Telecom "Service Delivery Platform" (SDP)

A Telecom SDP for competing with Web Companies



Telecom Providers and Web reality

- Web apps: many, diverse, rich, high speed dev.
- « Web » is the platform of Web companies
- Telecom providers face the risk to become only 'bit pipe' providers (Over The TOP services)

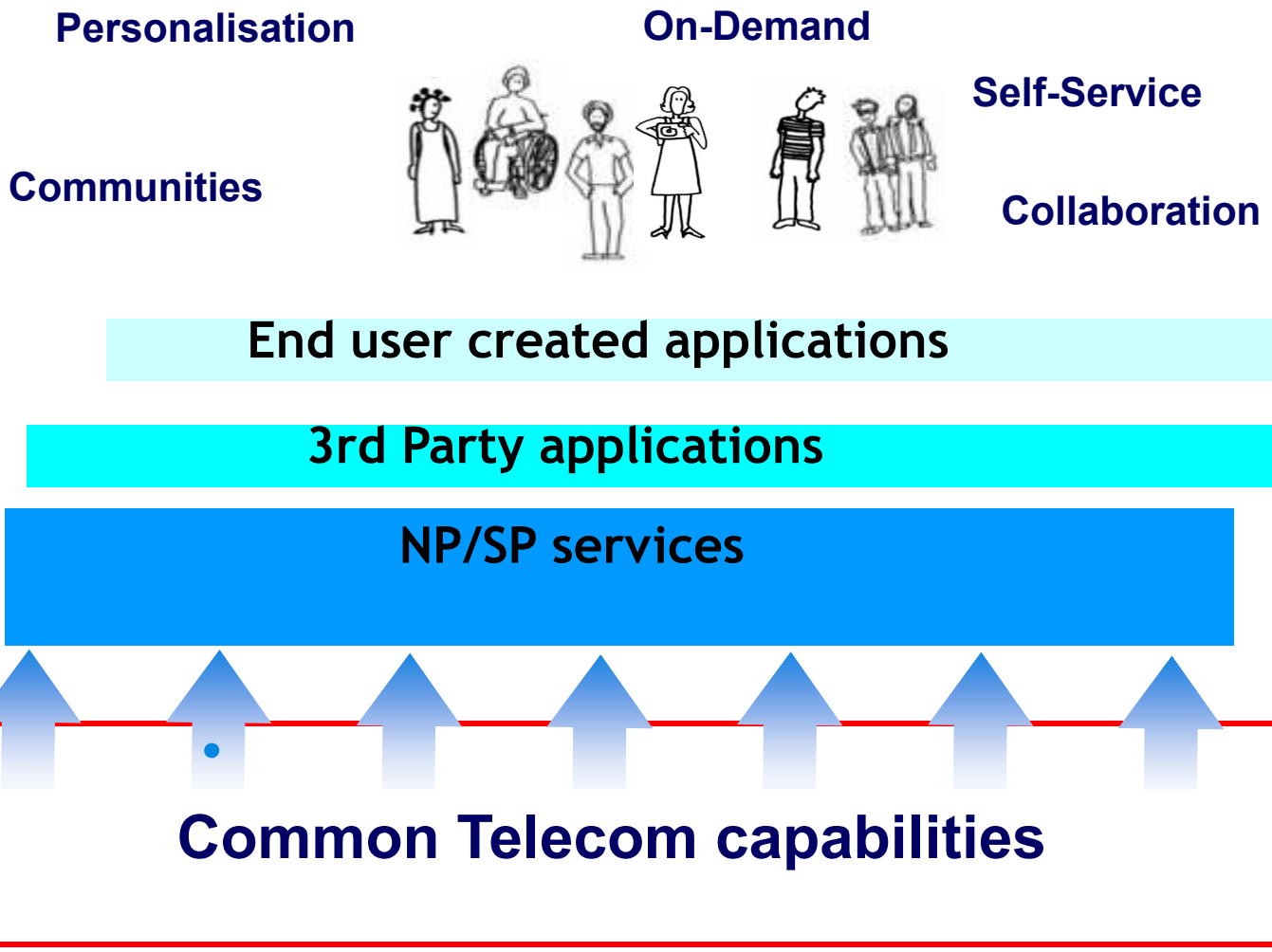
New services are a strategic differentiator for Telecom Providers and a way to counter lower voice revenues

Legacy service delivery: inefficient, expensive

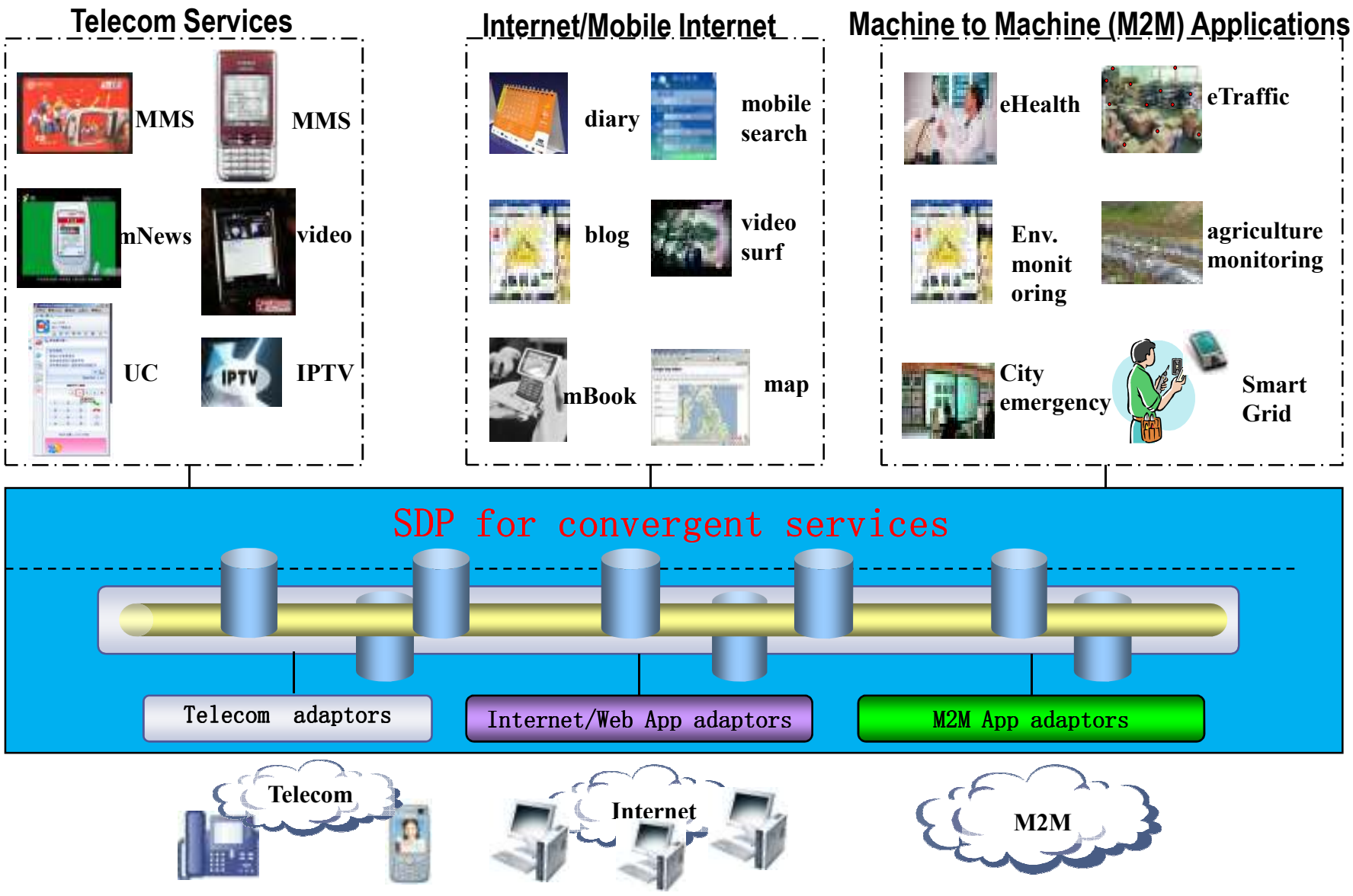
Telecom SDP as a new framework for service deployment

- **Multi-party business model**
- **Multi service**
- **Web orientation, mashups**

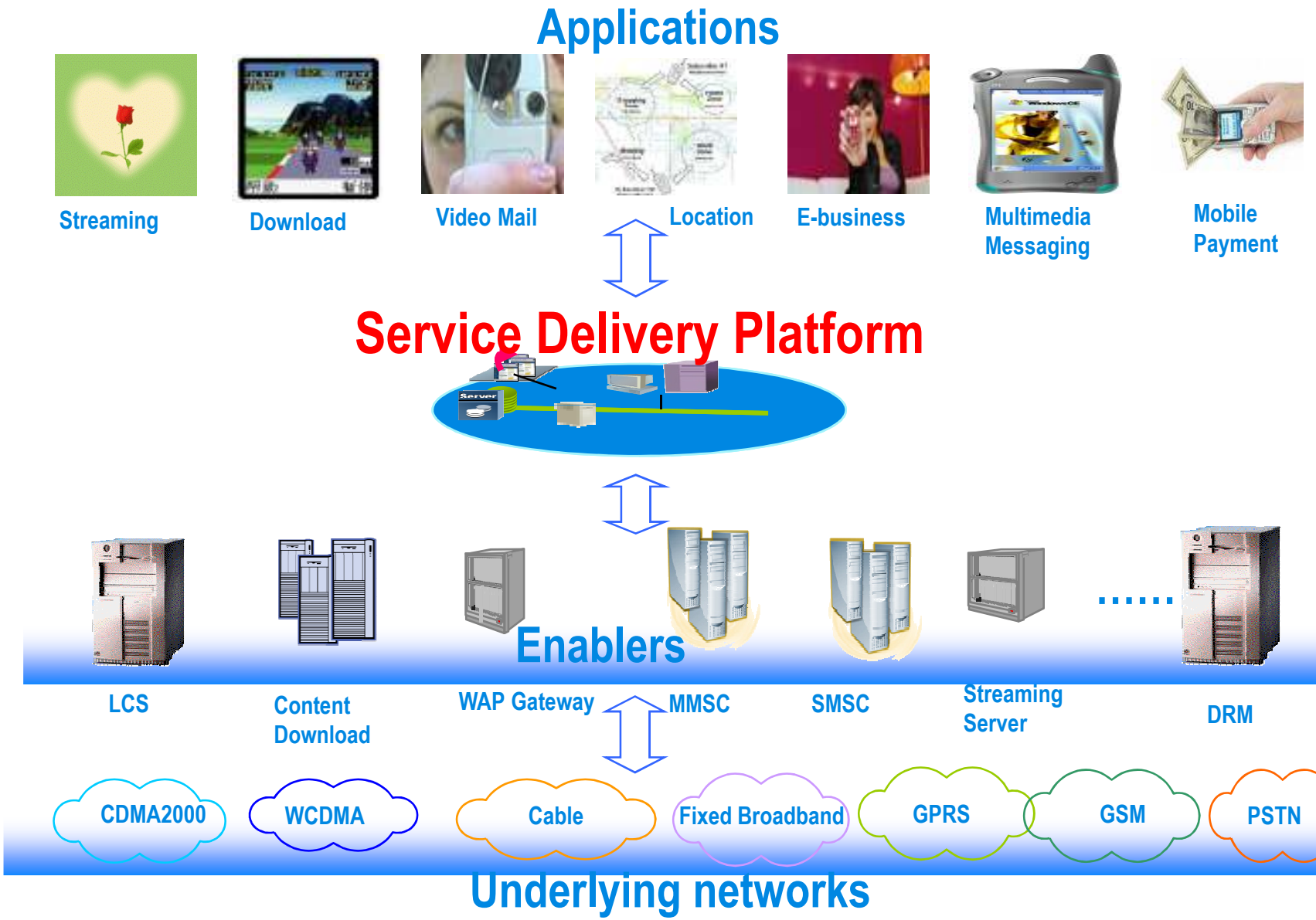
Increased business opportunities in a SDP ecosystem



SDP for convergent services (service examples)



Position of SDP in Telecom Infrastructure



NGN SDP (NGN-SIDE)

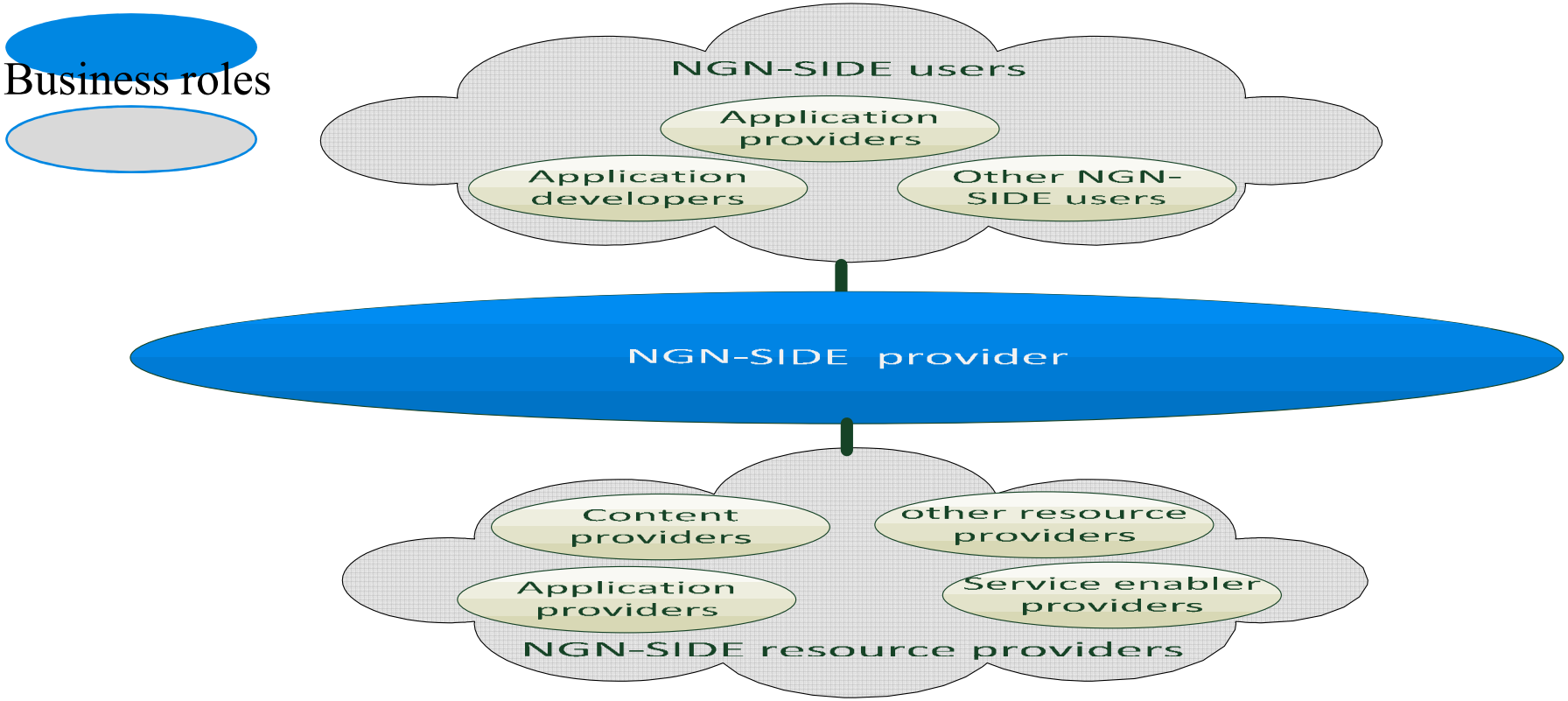
ITU-T draft Rec. Y.NGN-SIDE-Req (Q.3/13)

Requirements for NGN Service Integration and Delivery Environment

- NGN-SIDE ecosystem
  - Business roles
- Functional overview
  - Layers and functional positioning within the NGN architecture
- General requirements
- NGN-SIDE capabilities
  - Description and requirements for each capability
- NGN-SIDE interface requirements
  - For Resource Interfaces, for Service Interfaces (UNI, NNI, ANI, SNI)
  - *No reqts among different NGN-SIDE components*
- Appendixes
  - Application scenarios (3rd party app., in-house app., M2M app.)
  - Survey of API standardisation *(no survey of overall SDP activities)*
  - Cloud computing service models and NGN-SIDE
  - Business deployment scenarios in the NGN-SIDE ecosystem

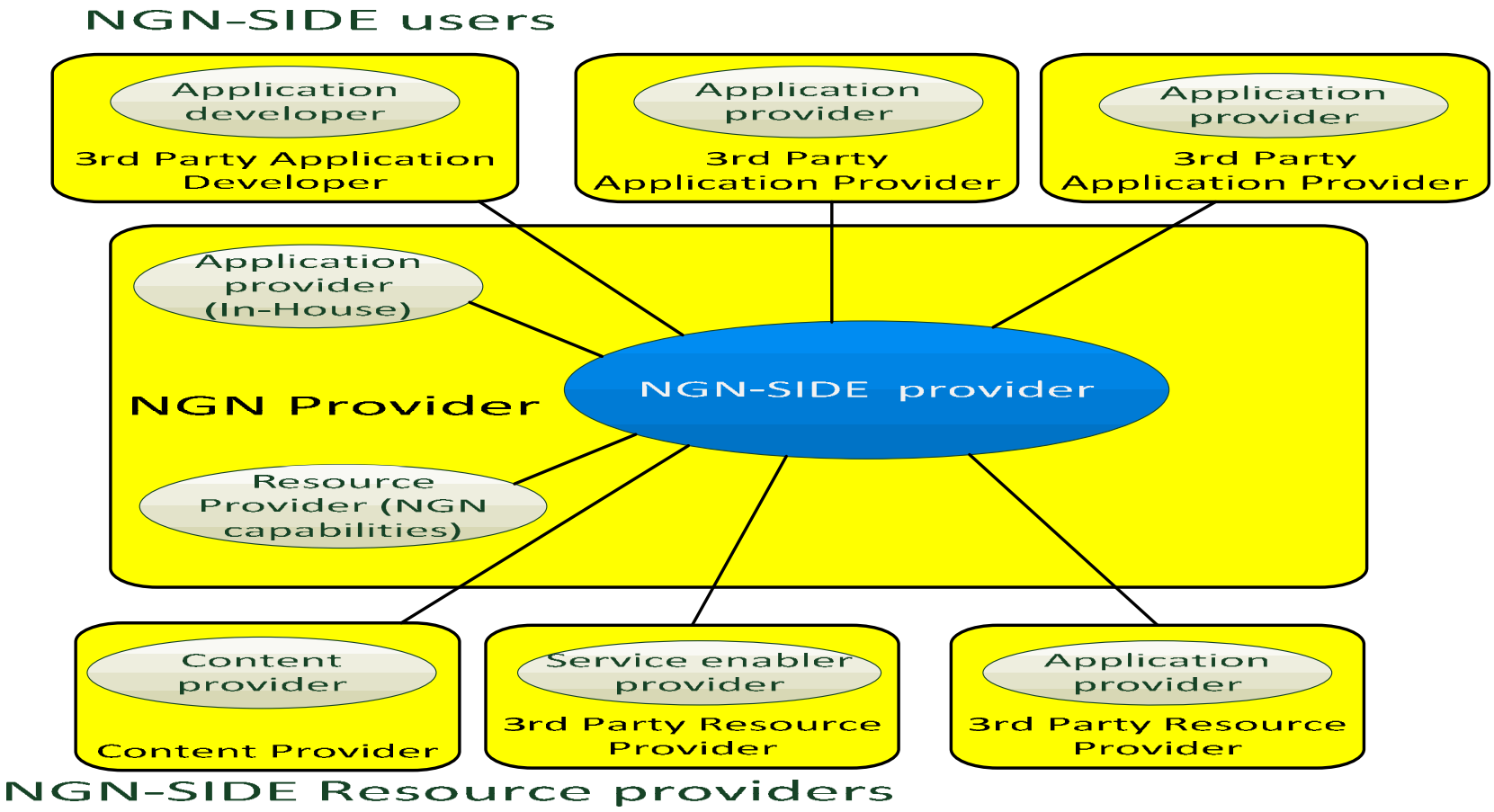
NGN-SIDE eco-system

NGN-SIDE aims to support a multi-fold business model and a comprehensive ecosystem for all stakeholders in the NGN value chain



NGN-SIDE provides an open environment in NGN, with integration of resources from different domains, including Telecom domain (e.g. Fixed and Mobile Networks), Internet domain, Broadcasting domain, Content Provider domain

NGN-SIDE business deployment scenarios



Actors

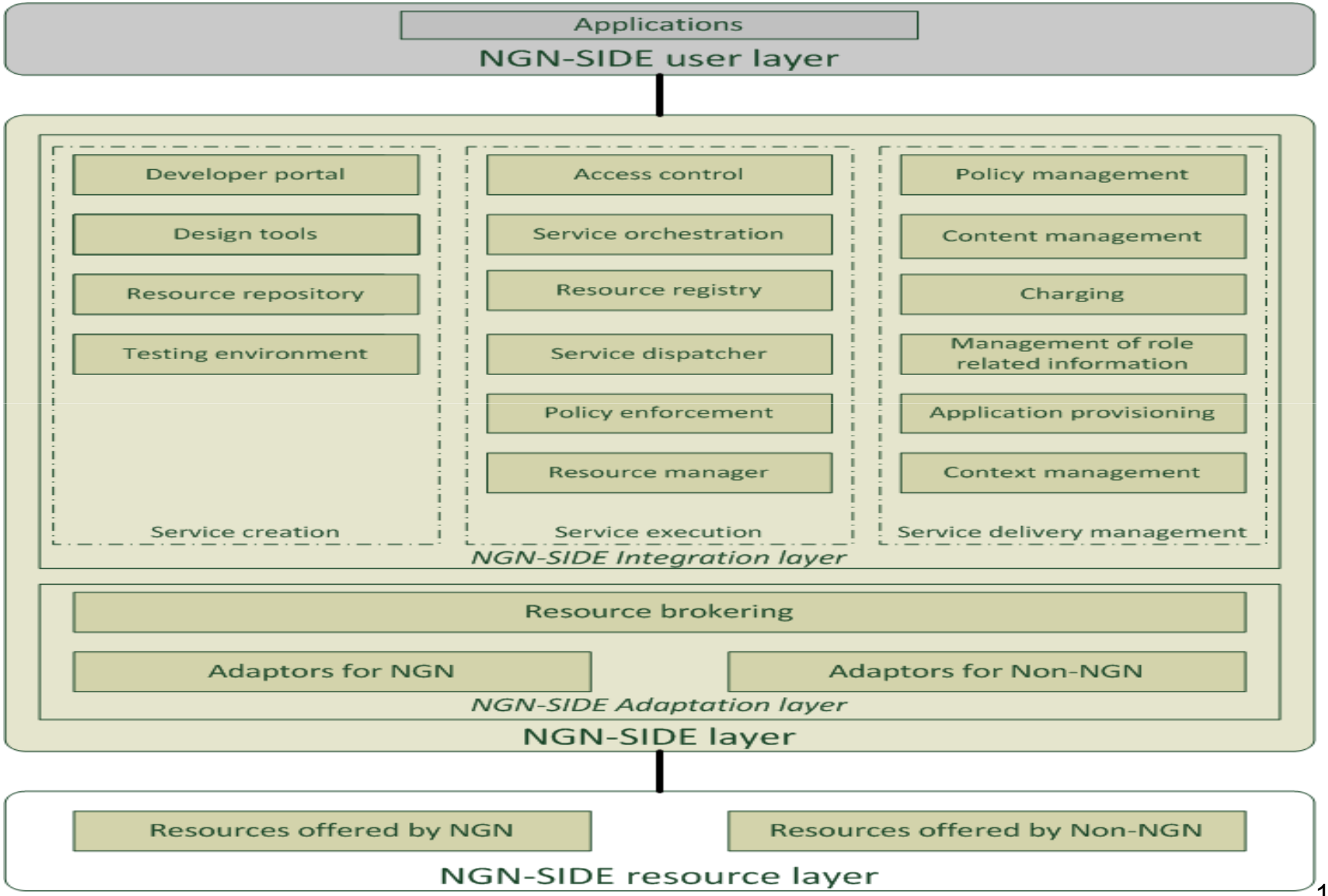
Business roles

In this example scenario the NGN provider acts as NGN SDP provider

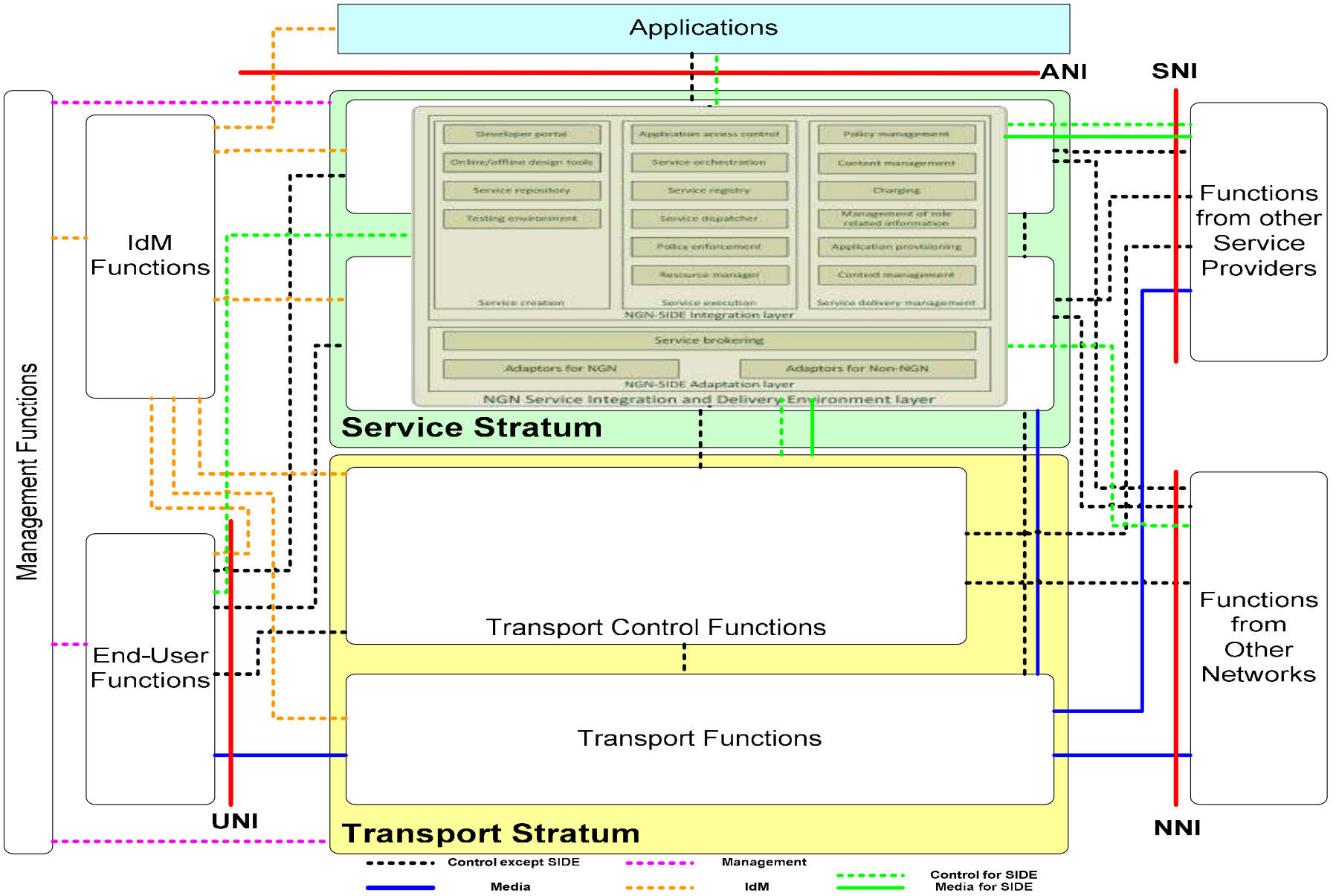
Main functionalities of NGN-SIDE

- **Integration of resources from different domains** over NGN (e.g. telecom domain (fixed and mobile networks), broadcast domain, internet domain, content provider domain etc.)
- **Adaptation, including abstraction and virtualization, of resources** from different domains
- **Resource brokering for mediation** among applications and resources
- **Application development environment** for application developers
- **Different service interfaces across ANI, UNI, SNI and NNI for exposure** of NGN-SIDE capabilities and access to resources in different domains
- **Mechanisms for support of diverse applications,** including cloud, machine to machine, and ubiquitous sensor network applications
- **Mechanisms for support of context-aware services**
- **Mechanisms for content management**

NGN-SIDE functional framework – current ITU-T draft



NGN-SIDE within the NGN architecture (Y.2012)



Telecom SDP standardization

Various SDOs/Forums/Consortia involved in the ongoing process

- Framework perspective
  - ITU-T: SG13 (NGN/Future Networks), SG16 (IPTV)
  - OMA : OMA Service (Provider) Environment, enablers, APIs
  - IEEE: NGSON (Next Generation Service Overlay Network)
  - ATIS: Service Oriented Networks (SON)
- Management perspective: TMF Service Delivery Framework
- IMS focus: 3GPP
- Others (Wholesale Application Community etc.)

Some challenges of the standardization process

- Process coordination among relevant SDOs
- A minimum set of standardized APIs to be adopted by each SDP
- Interoperability among different SDP implementations

Telecom SDPs today and Web (platform) attributes

Current Telecom SDPs status

- Emphasis on “control and management” - SDP (and IMS) are centralized environments
- Services are geographically-bound (with service interoperability issues between Telecom Providers)
- Function-centric service architectures
- Not so open
  - Proprietary control mechanisms, SDK, market is restricted
- Existence of multiple domain-specific SDPs (for mobile, IPTV, legacy and broadband services, Machine-to-Machine applications etc.)

The good attributes of Overlay SDPs (Web 2.0 platform)

- A single and distributed environment
- Services are global, always available
- Data-centric service architectures
- Open APIs for 3rd parties and social features

Some interesting evolution paths for an enhanced value Telecom SDP

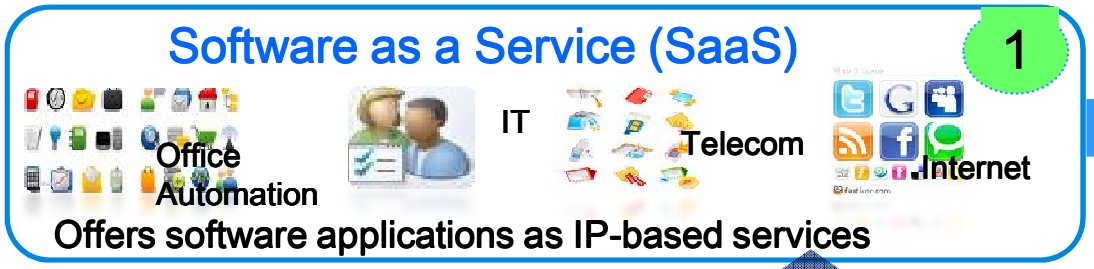
- SOA and open APIs pave the way to **open and decentralized (distributed) SDPs**
- All services on demand: **a Cloud-based SDP**
- **SDP offered as a Service of the Cloud (SDPaaS)**
- **Modular SDP architecture** with common general purpose functional modules and device/service-specific functional modules
- **Data enhanced SDP** (e.g. via data mining capabilities)
- **Interconnection/federation of SDPs for geographical pervasiveness**
- Others (SDP as a Broker)

Cloud based service models

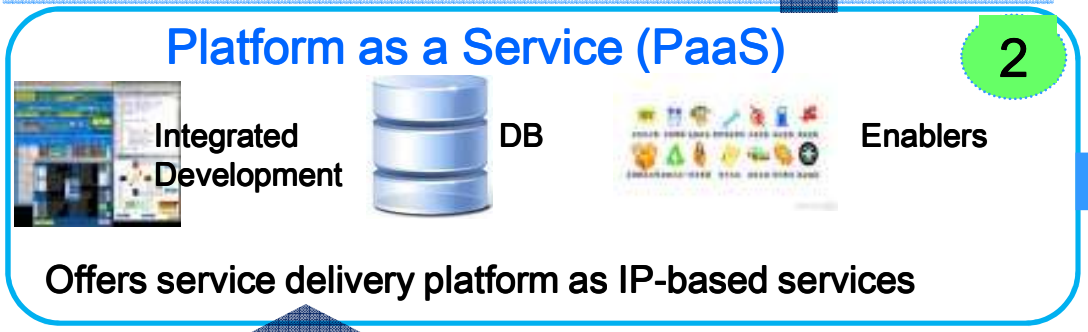
ITU-T FG Cloud definition proposals

►**Cloud Services**: products and solutions delivered and consumed on demand (utilizing IT Resources and capabilities of Platform) at any time, through any access network and using any connected devices

►**Cloud Computing**: an emerging IT development, deployment and delivery model, enabling on-demand delivery of products, services and solutions over any network and for any devices



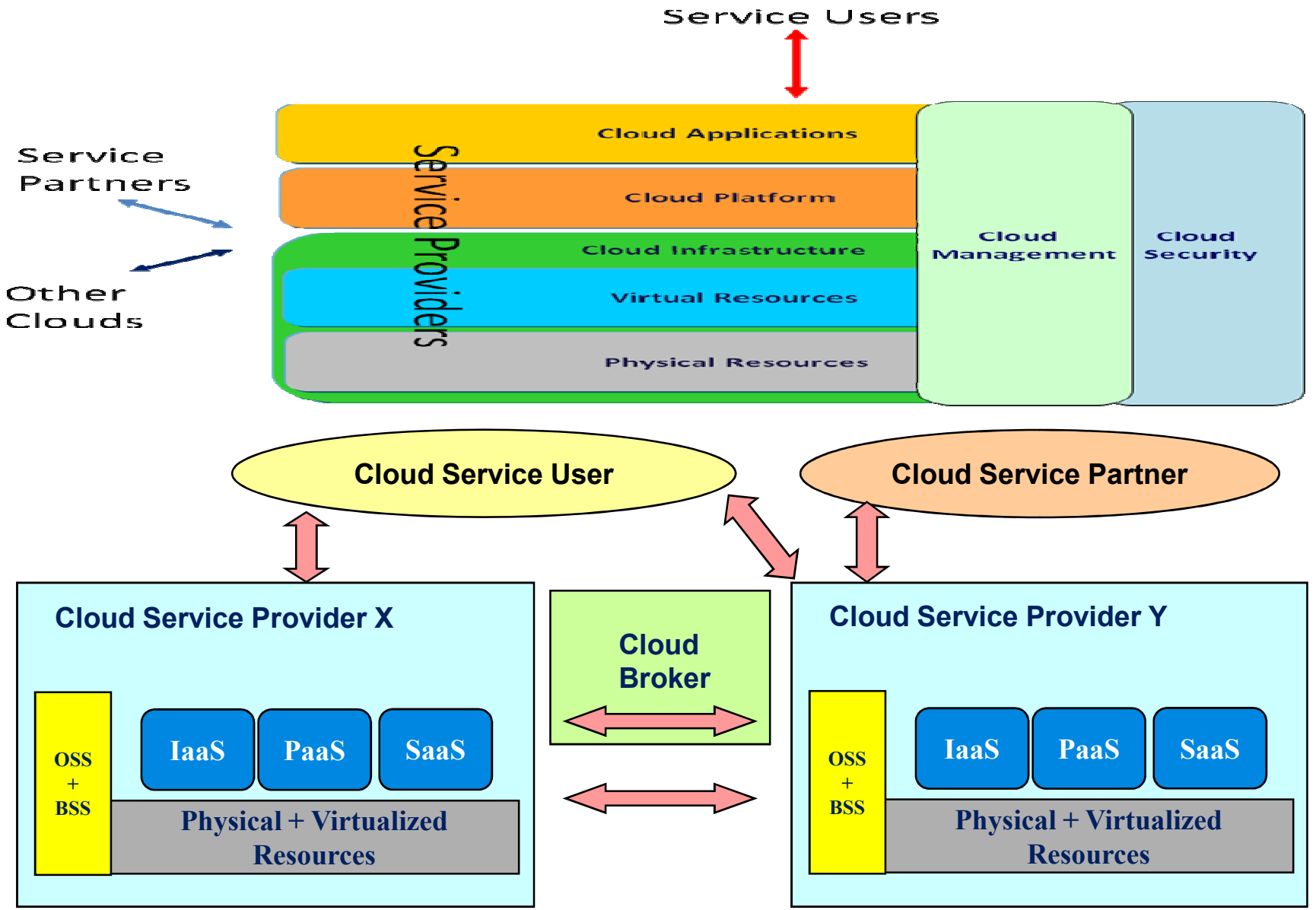
✓Lower CAPEX
✓Configurable
✓Multi-Tenant
✓Elasticity



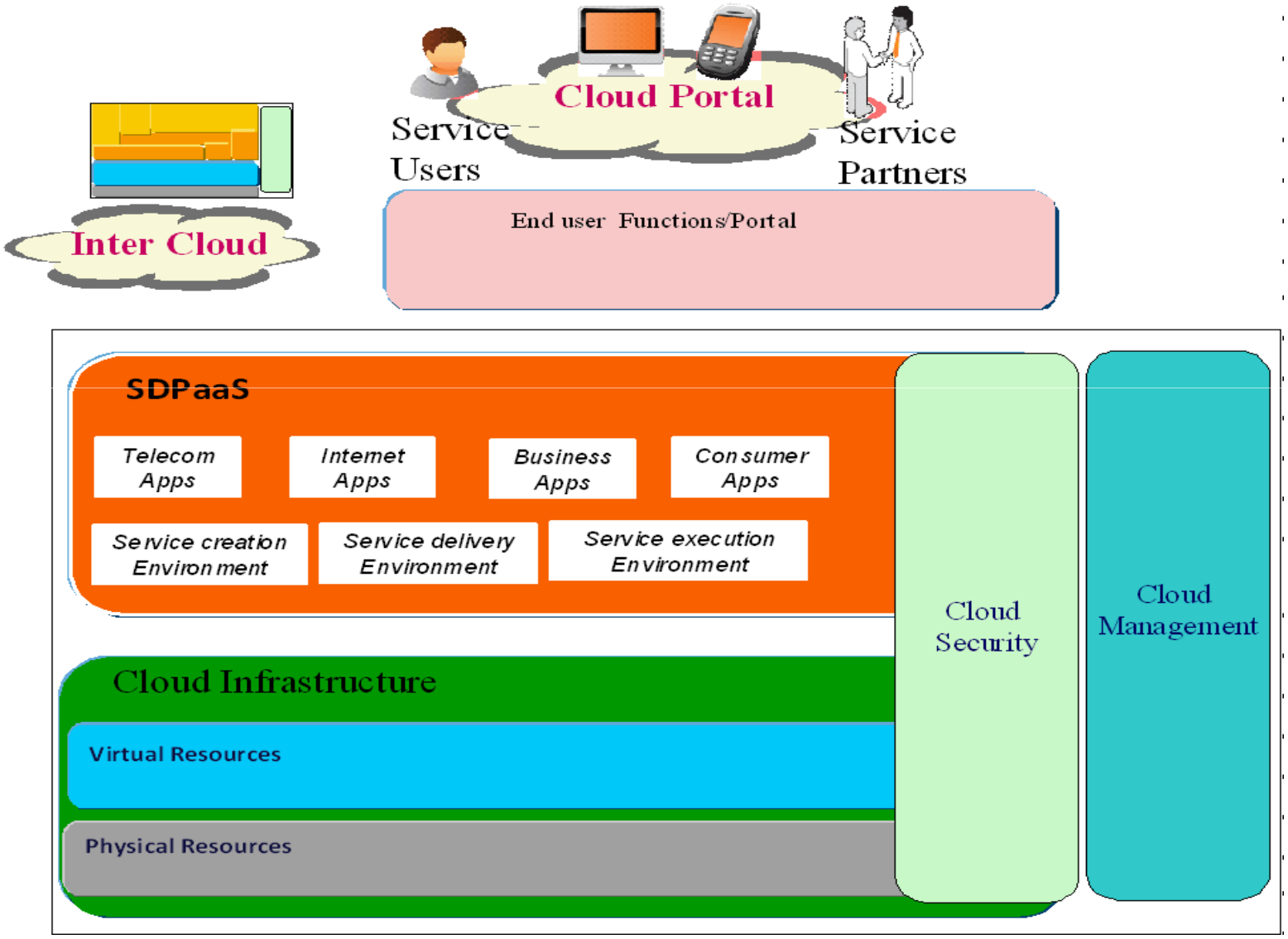
✓Enablers opened as APIs
✓Mash-up
✓SDK, Testing Environment
✓Managed Operations
✓Developer community

Massive, efficient, cheap way to offer infrastructure via hardware resource abstraction

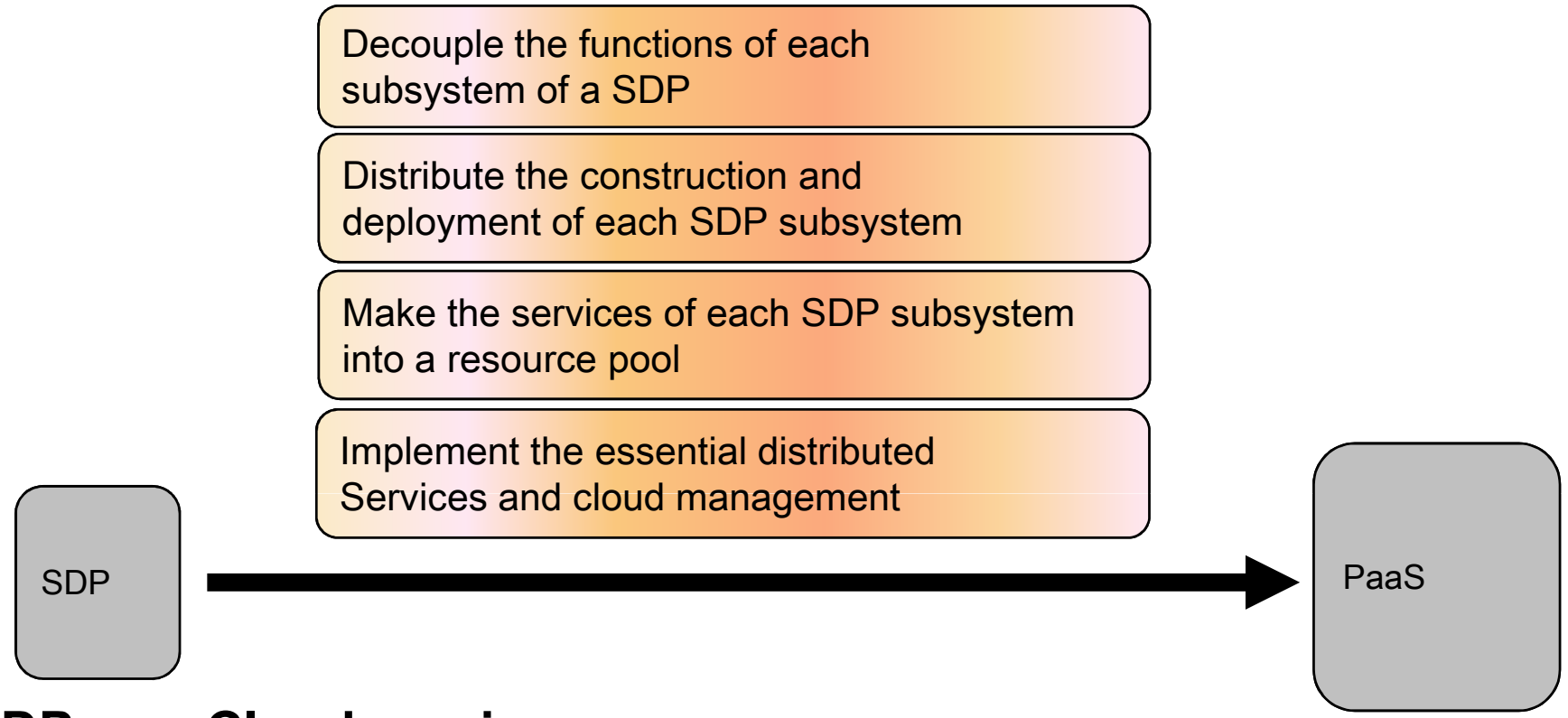
Cloud Ecosystem (ITU-T FG Cloud)



SDPaaS functional overview
(extract from ITU-T FG Cloud Ecosystem draft)



Evolution from SDP to SDPaaS

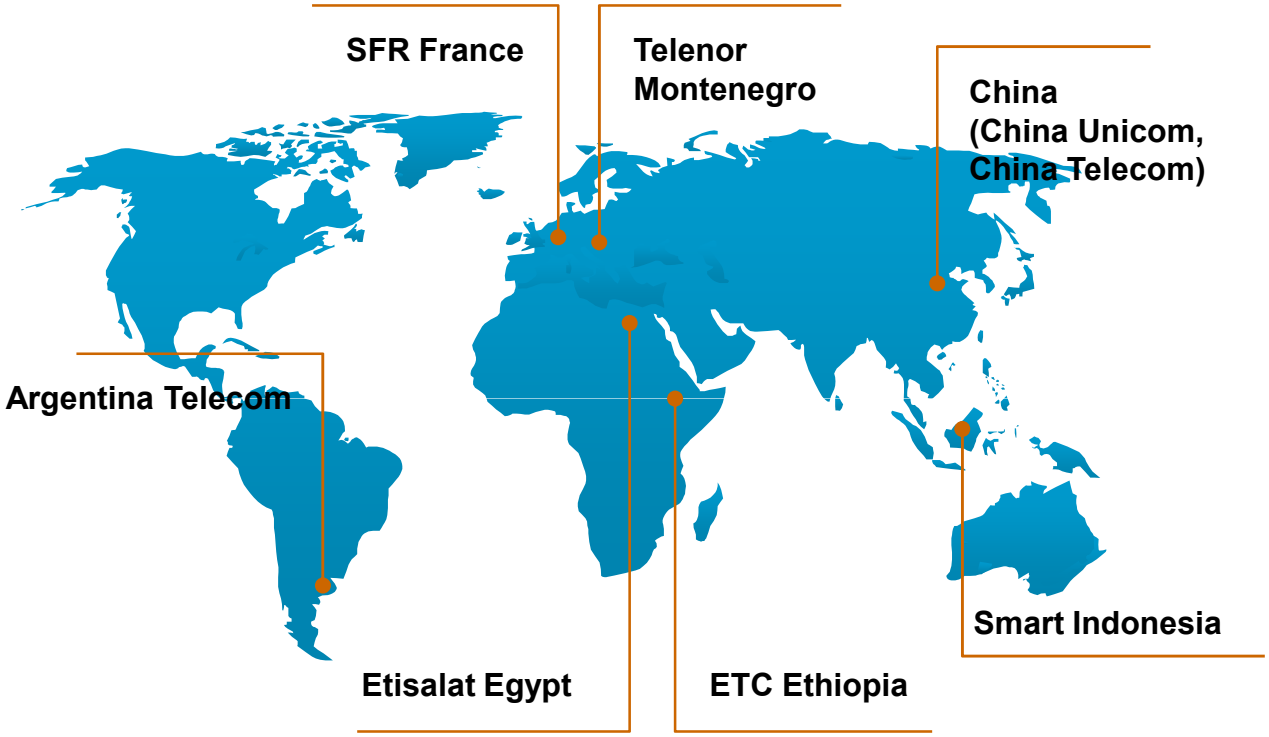


SDP as a Cloud service

- Web offers today include service marketplaces and SDP in the cloud (developer support, SDP capabilities as a service, API-based mashups)
- **Key requirements of Telecom SDP in the cloud**
  - platform exposure in the cloud
  - developer support and governance with respect to 3rd parties
  - service discovery and agile service composition and provision

ZTE SDP product achievements

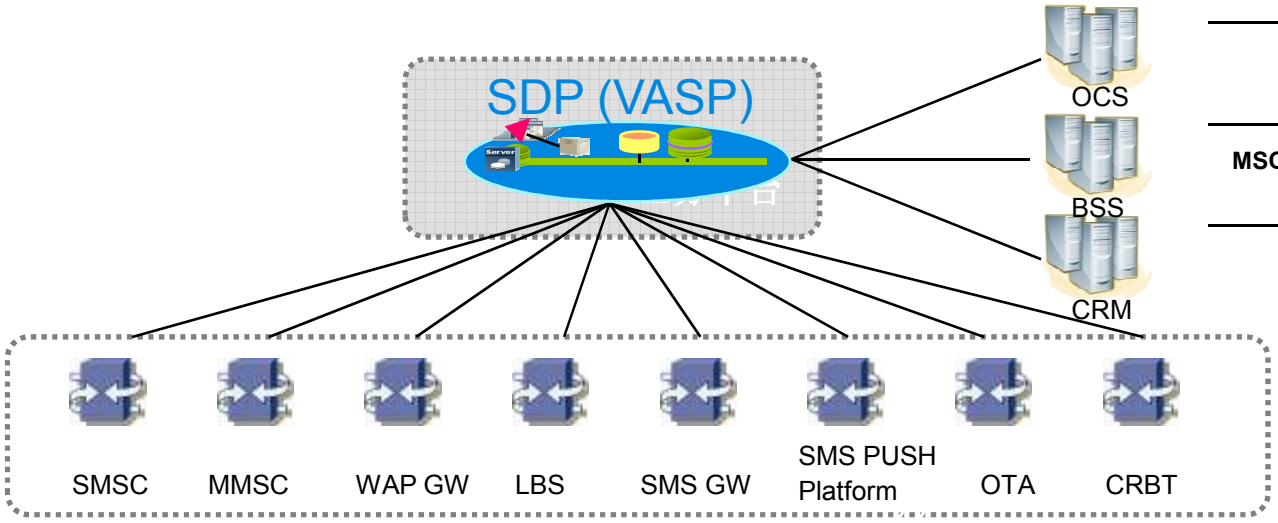
Around the world more than 50 sites, serving 100,000,000 subscribers



The biggest SDP - China Unicom Guangdong Branch

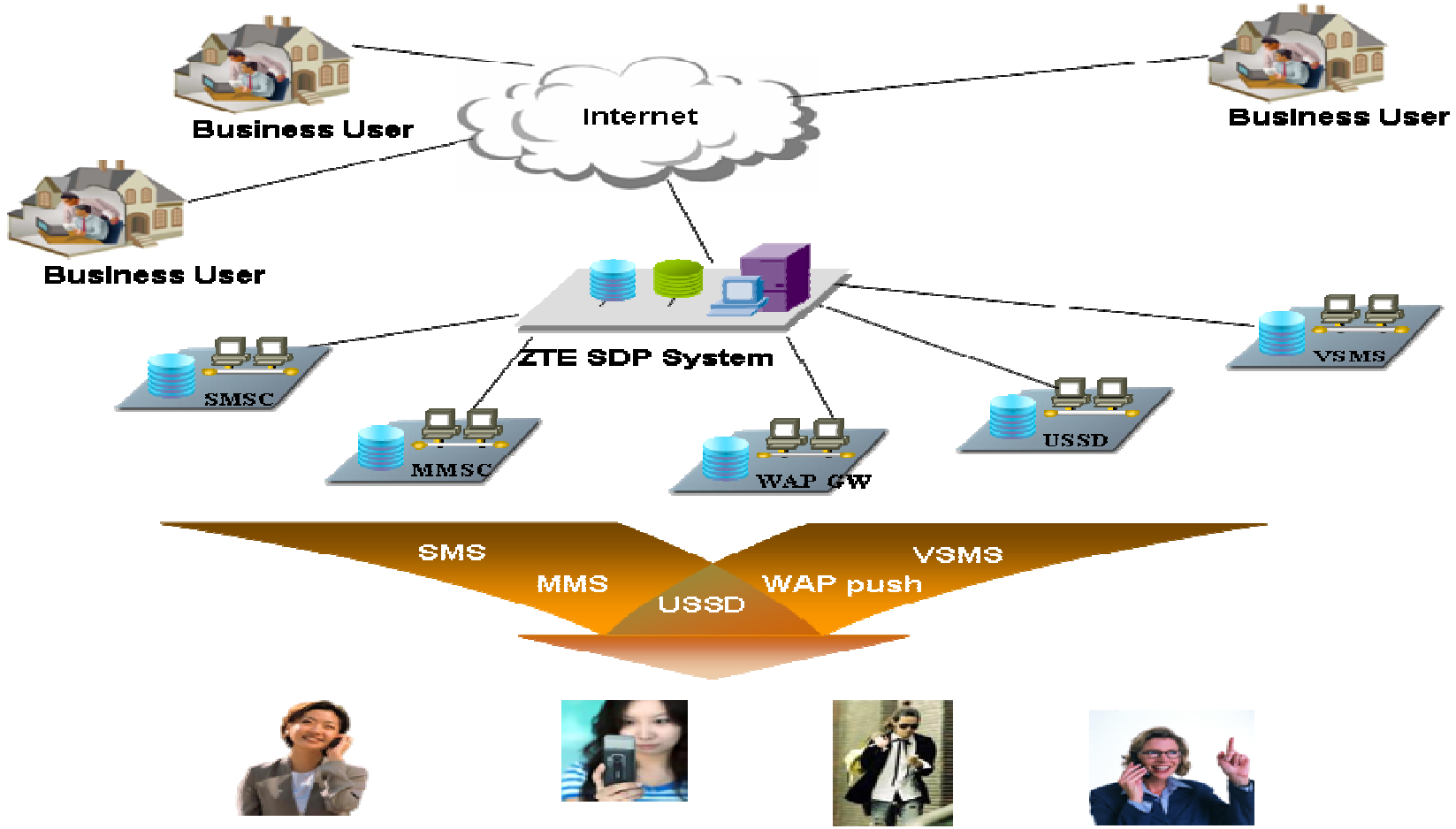
- The largest SDP platform in China with 35 M users, 1000 CP/SP, 2000 active applications, 41 M subscription data, 174 M $ revenue per year.
- The most complex SDP project with integration with a lot of service engines and systems (see table)
- Fast engineering deployment in 4 months
- Attentive customized service helps quick service deployment
- Statistical analysis & report system helps operator master service operations status in real-time

System	Protocol	Vendor Name
SMSC	SMPP	ZTE
MMSC	MM7	Comverse, Huawei
WAP GW	PAP	Huawei
LBS	Le/LIF	Moto
SMS Gateway	SGIP/ISMAP	ZTE
SMS PUSH Platform	SGIP	ZTE
OTA	ISMAP	Jingpeng
CRBT	ISMAP	Jingpeng
IN/Prepaid	SMPP+	ZTE/Huawei
OCS	Diameter CC	ZTE
MSC/VLR/HLR/AUC	CAP	Ericsson
GGSN	Diameter	Nokia-Siemens

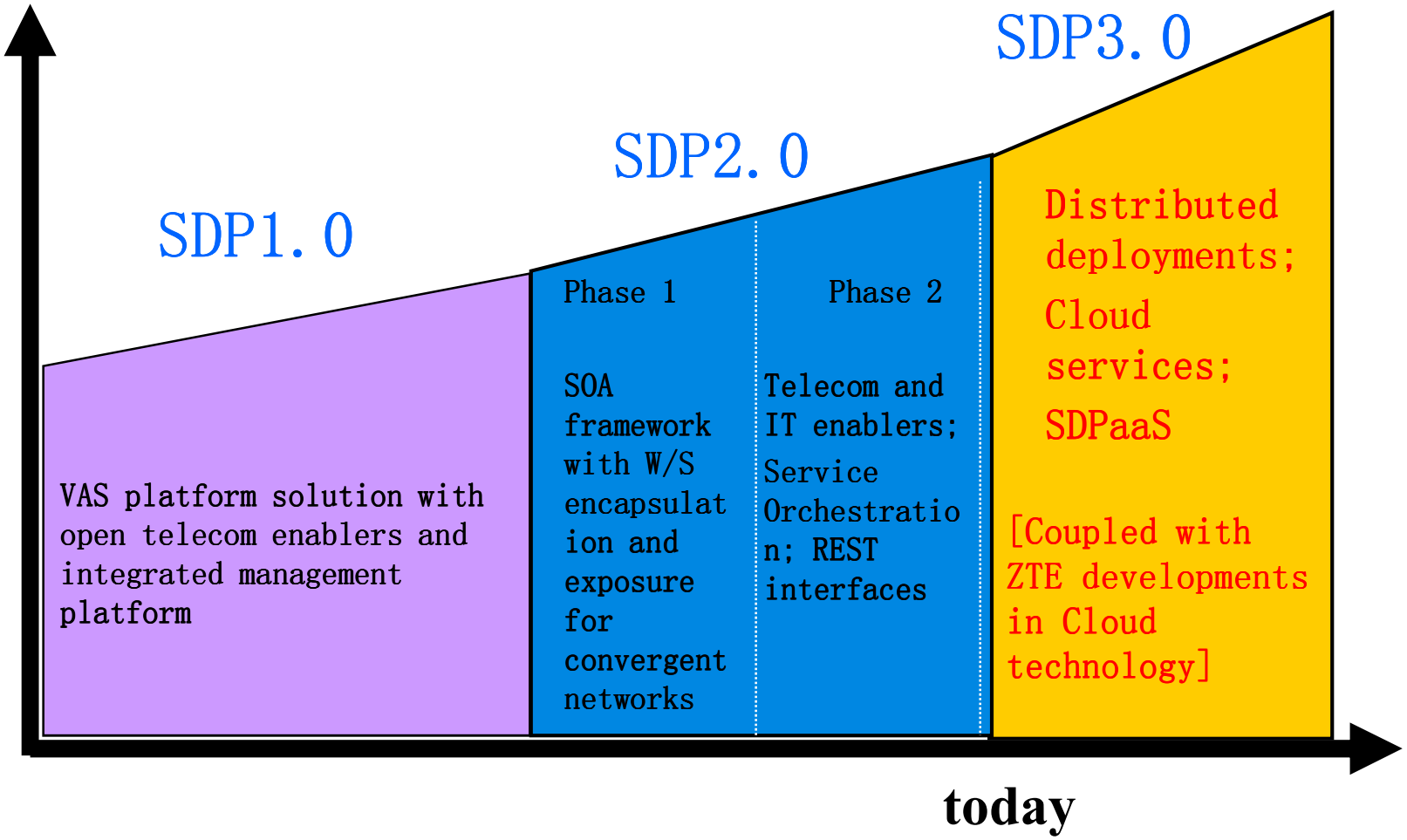


ZTE SDP in Etisalat Egypt (ready for launch)

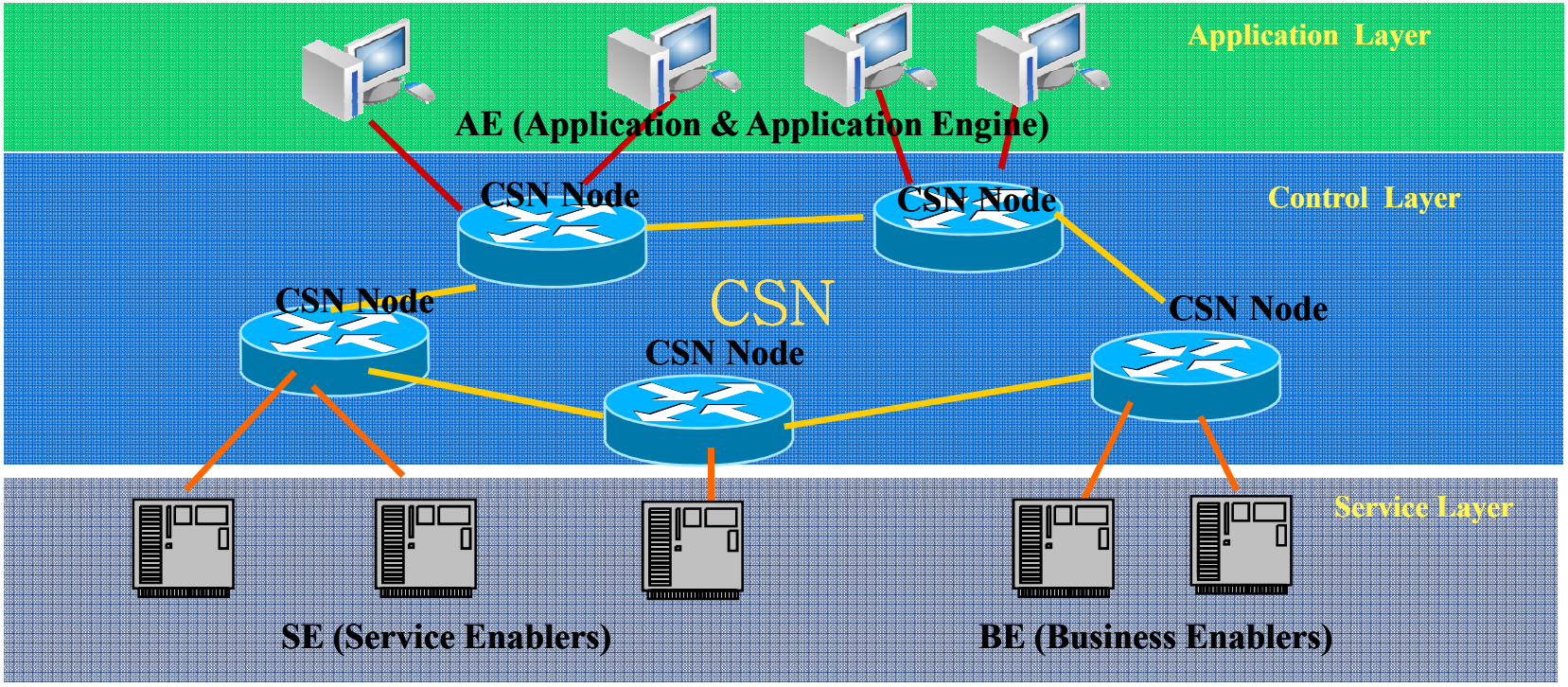
- ZTE SDP is helping Etisalat Egypt to deliver service applications like business advertisement and promotion information message by SMS, MMS, WAP PUSH, USSD and VSMS (1000 TPS as target).

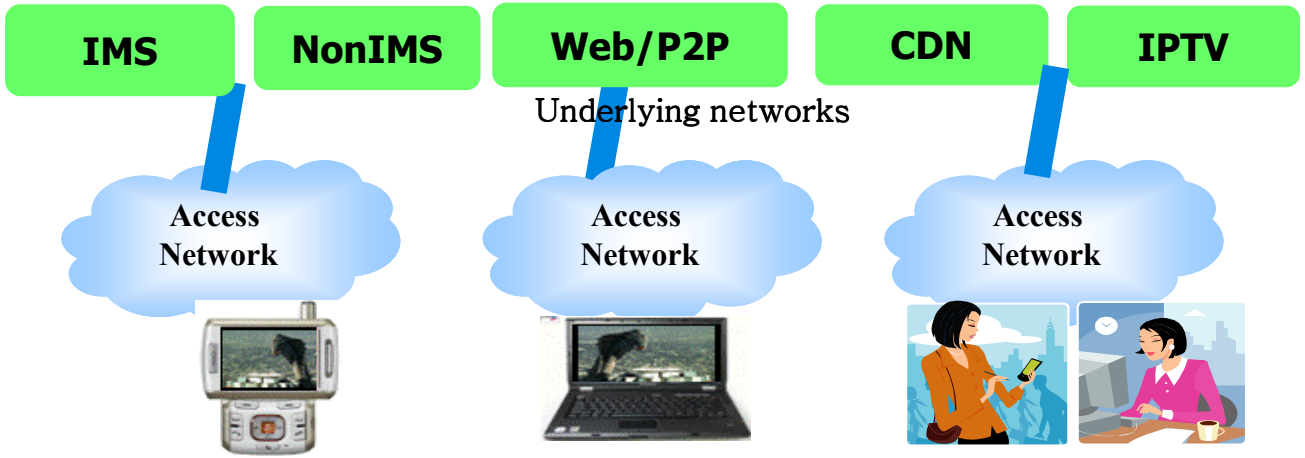


ZTE SDP roadmap



ZTE Convergent Service Network (CSN) platform





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