
ITU-T SG4 workshop report

OSS Planning and Development in China

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Part1: OSS Definition and Applications

■ IT Supporting system

In China, IT Supporting System include OSS、 BSS、 MSS, which based on Enterprise Level, provide supporting bases for service fulfillment, service assurance and service billing. From the view of human body, IT supporting system is just like the Blood Transmission System which carries nutritious and useful elements to their corresponding destinations. So, if we want to enhance management level ,we must make all departments work orderly and efficiently, the other thing we need is the planning and construction of IT supporting system effectively. IT supporting system has gradually become one of the important factors which indicate the competitive abilities of Tele-operators.

■ Definition

OSS is a computer network which integrated Computer, Telecommunications and Network management Technologies. Mainly covers Element Management Layer、 Network Management Layer、 Service Management Layer in TMN, realize centralized monitor、 control and management for Telecommunications Networks. The Object of OSS is to make Network operates effectively, reliably and safely。 OSS is independently from BSS and MSS . Only inter-operate in some degree.

■ OSS meaning

In Narrow Sense:

Network Management System for One specific Network..

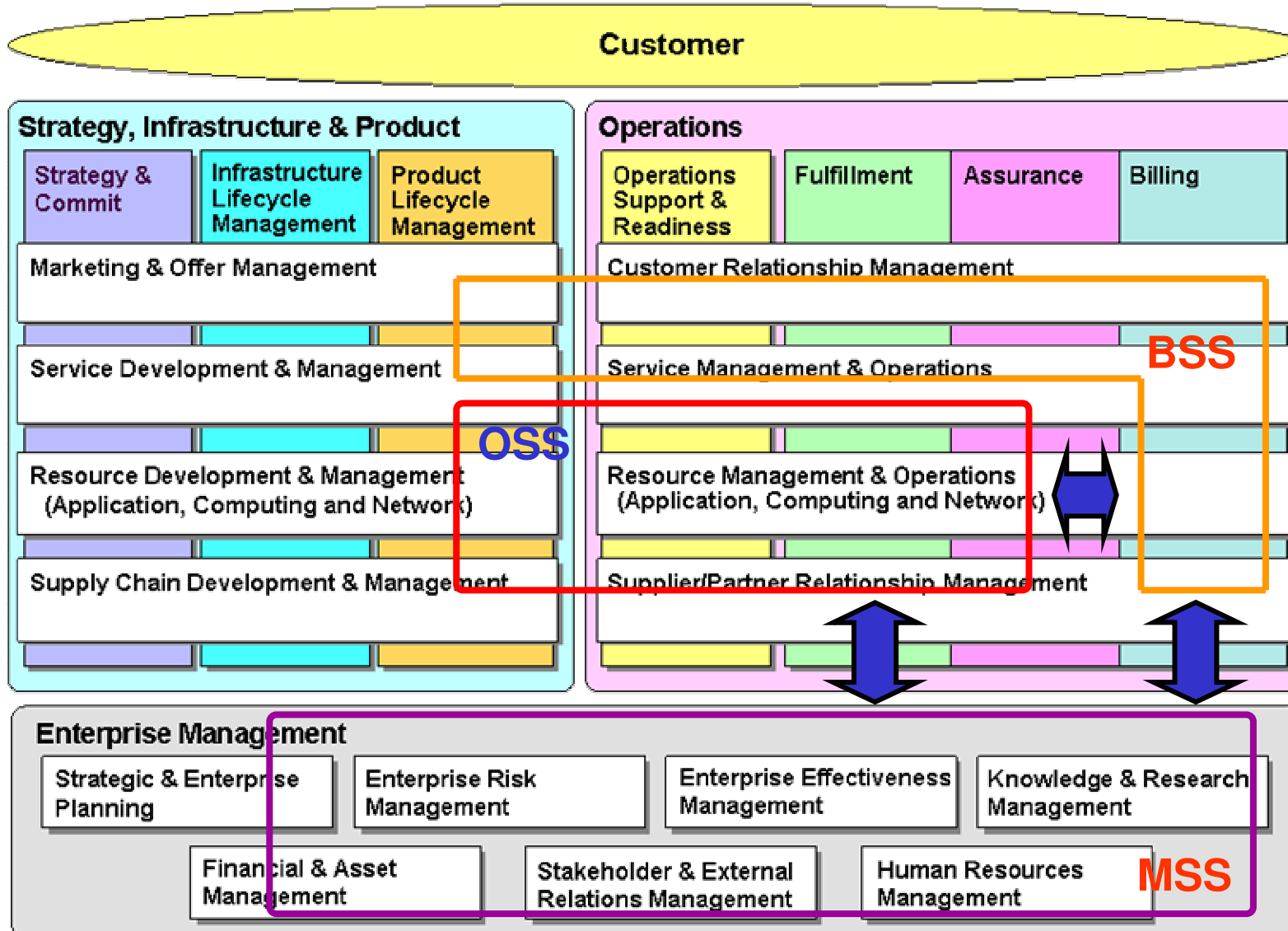
Integration Network Management System for all Networks.

In Broad Sense:

Electronic Operation & Management System for OA&M..

The coverage of OSS and BSS/MSS within eTom

eTom is driven by markets and TMN by Technologies.



The theoretical analyses of OSS applications for Network OA&M

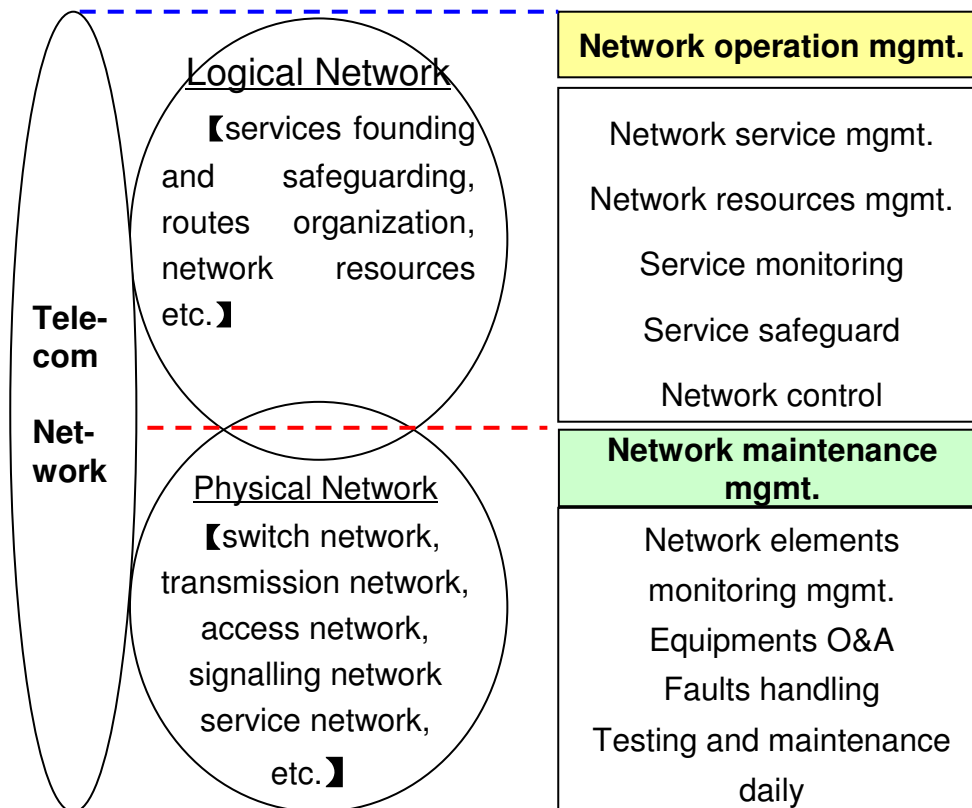
Def. of OAM (Operation & Administration & Management):

The software, hardware, organization and the related produce activities and management activities to ensure the telecom networks work normally, safely and efficiently.

Software : produce and mgmt. rules, work flows etc.

Hardware : computer networks, e.g. OSS, MSS etc.

Organization : organizations of OAM



Comprehend OA&M:

– Operation

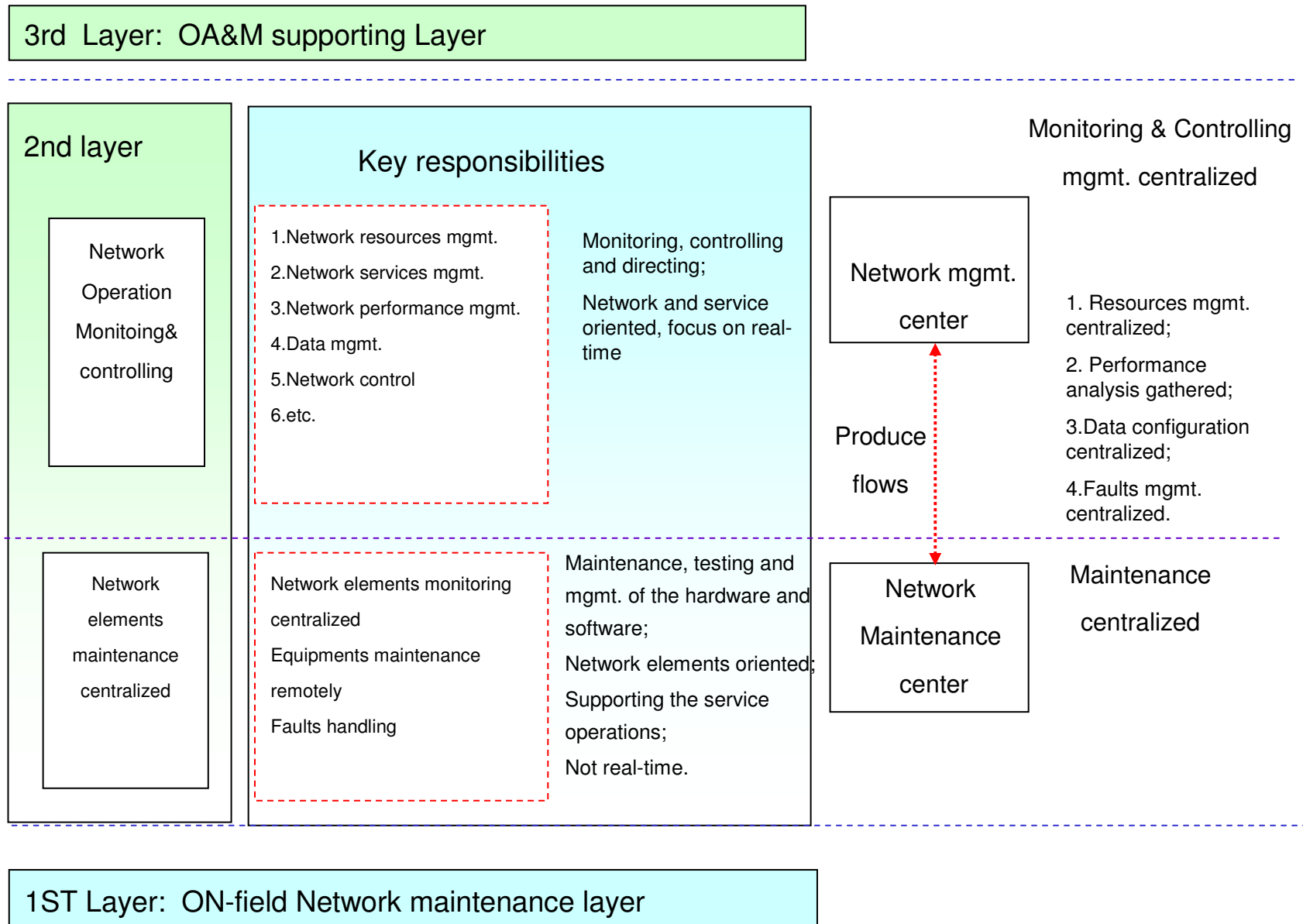
Monitoring, controlling and directing;
 Network and service oriented, focus on real-time.

– Administration

– Maintenance

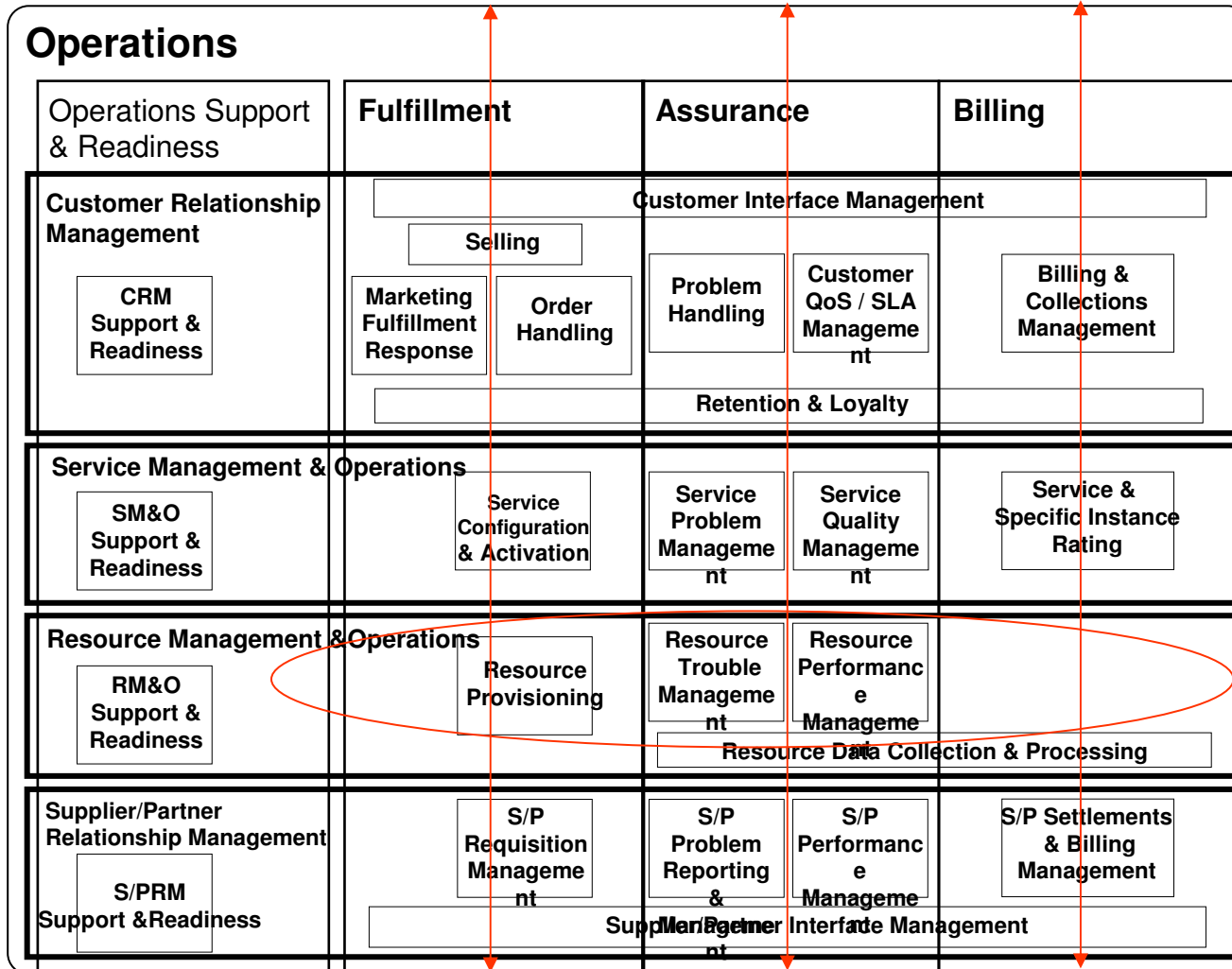
Maintenance, testing and mgmt. of the hardware and software;
 Network elements oriented;
 Supporting the service operations;
 Not real-time.

Relations between Network Operations and maintenance



OSS supporting kernel operation flows

Kernel flows 1 Kernel flows 2 Kernel flows3



- Service supporting ability
 - Service assurance ability
 - MTBF-Mean Time Between Failure is longest
 - MTTR-Mean Time To Repair is shortest
 - Operation in low cost
 - To organize the HR,MR,FR well
 - To optimize networks and improve the network utilizing rate
- – From : [The Lean Communications Provider]

Part2: OSS Requirements and Developing Trends In China

1. OSS Driving powers

A. Network Evolution and OSS Technologies

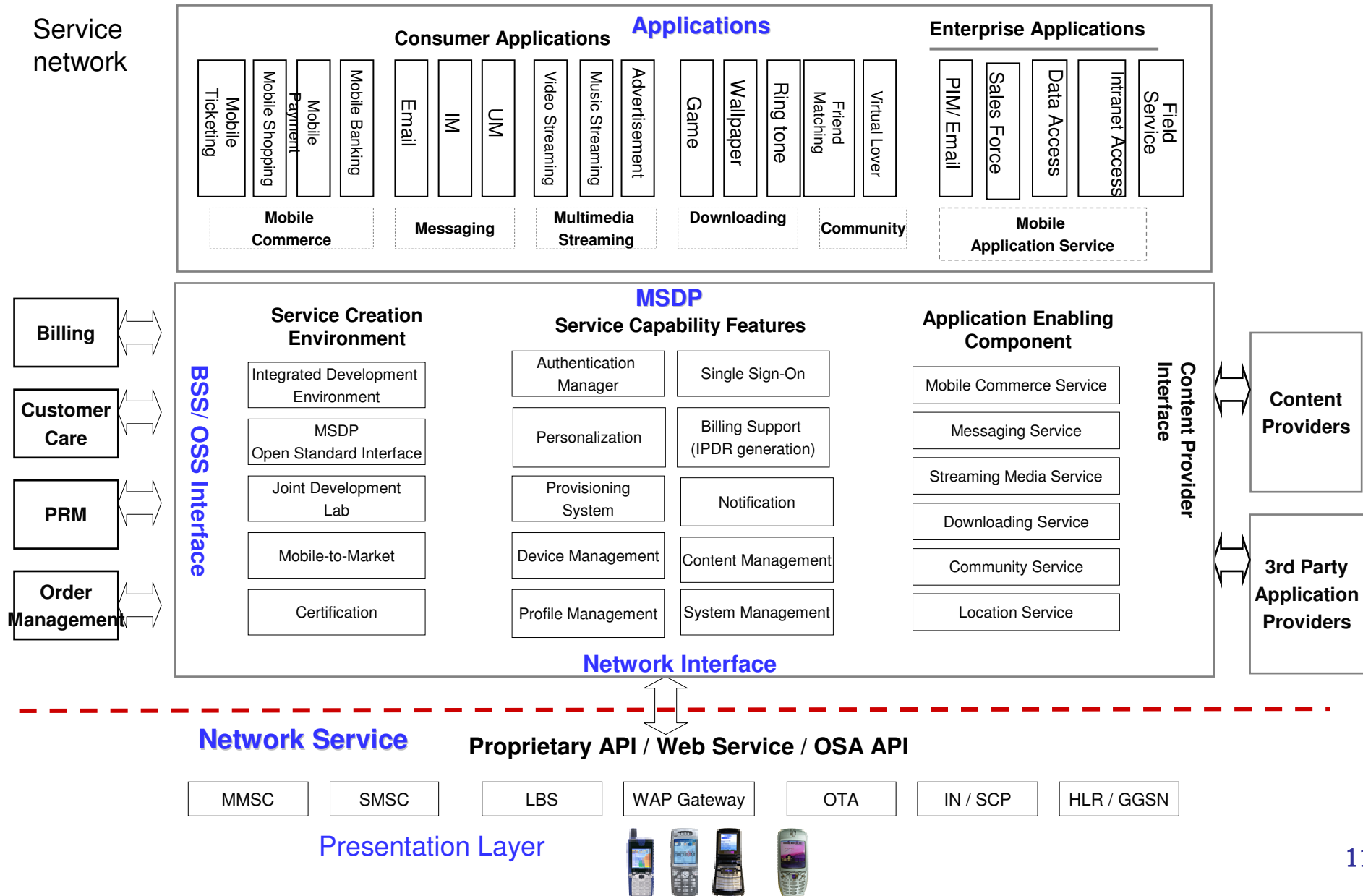
B. Market competition and Operation transformation

C. Target for modern network OA&M

2. OSS Requirements

3. OSS Development Trends

1. OSS Driving powers A.Network Evolution



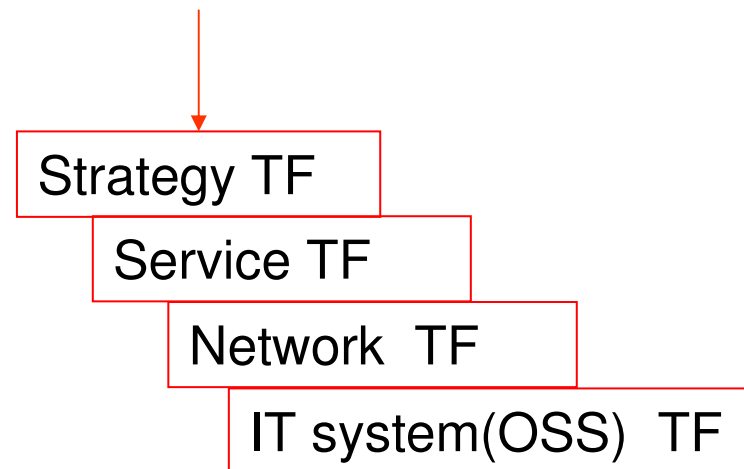
B. Market competition and Operation transformation

■ Market competition

Tele-operators are facing fierce market competition. especially for fixed-line Operators .The disturbing problem is how to keep revenue increase and make sustainable development.

OSS should evolution scientifically to fit for the market competition.Which include: Market competition, Service competition, Network Competition, and IT competition.

■ Operation transformation



C.Foundation of moderation network OA&M

Catering for the centralized trends of network OA&M in the world, All the Tele-operators in china, such as China Mobile, China Telecom, China Unicom, China Netcom, have reformed their old OA&M system in the past years or doing it now, They are trying to improve their management system to adapt to the development of OSS ,to catch up with the modern network OA&M trends in the world.

China Mobile have set up Two-level centralized OA&M system and Two-level OSS, which is highly centralized and modernized.

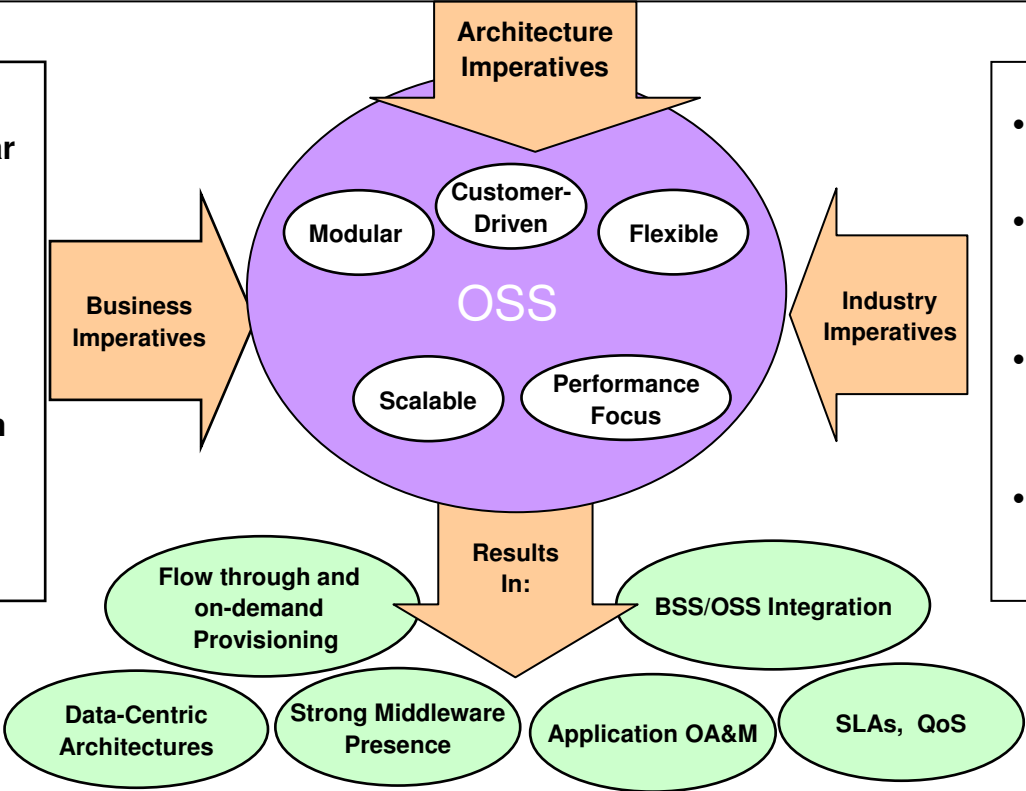
China Telecom have set up local centralized OA&M system.

China Unicom reformed OA&M system recently, target for modern OA&M.

Driving powers Summarized

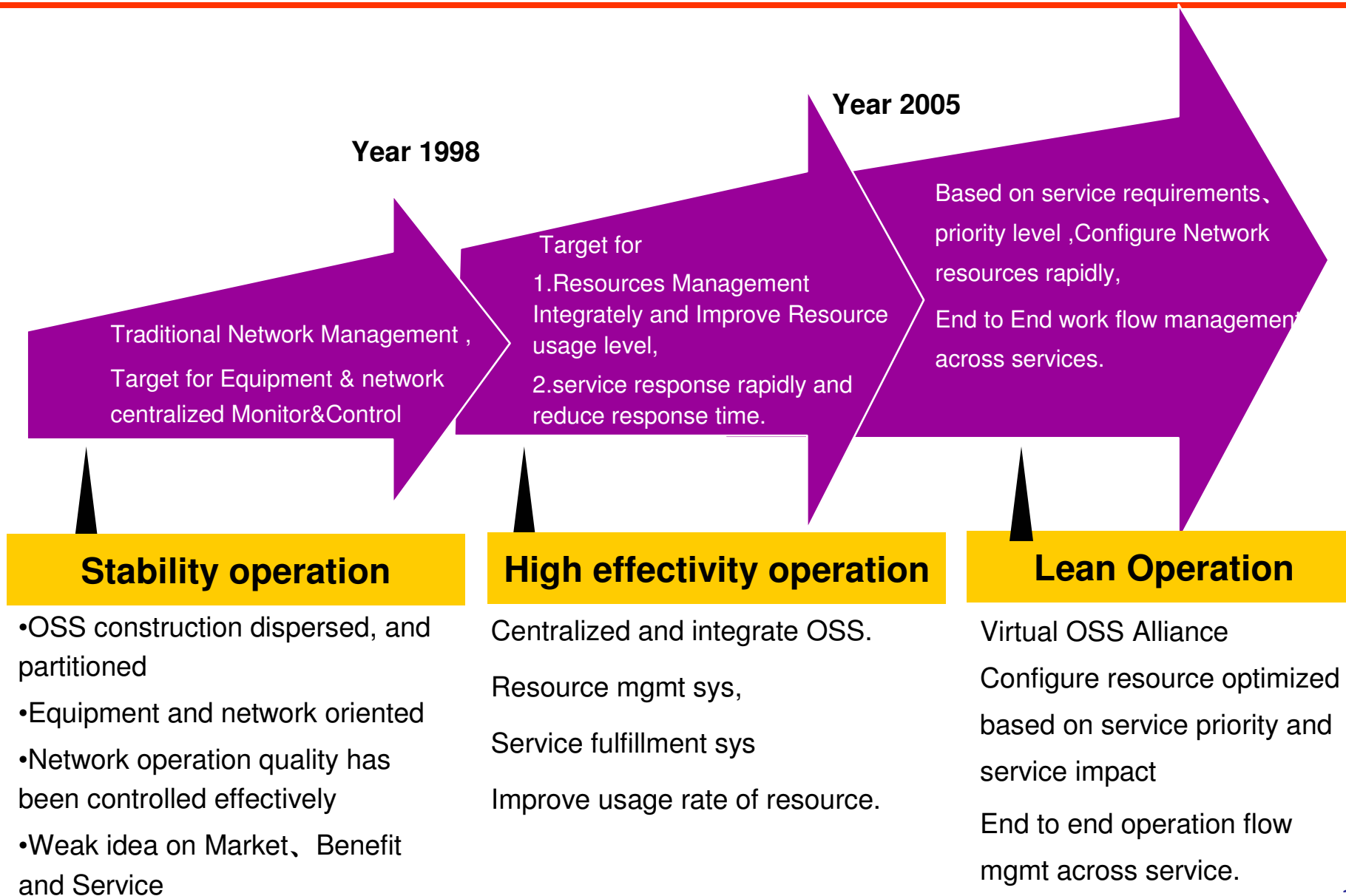
- Sustain high degree of interoperability with existing infrastructure
- Extend select operations to subscribers, trading partners, and VARs.
- Near-Real-Time solution responses for critical business activities

- (NAR, EMEA) high revenue/CAPEX near term
- (EMEA) Increase ARPU to cover licenses.
- (APAC) Maximize wireless penetration
- (All) Keep OPEX in control; reduce where possible



- Contain costs for existing networks.
- Maximize revenue subscriber growth for new networks
- Increase revenue per subscriber or business.
- Leverage existing IT infrastructure

2.OSS requirements



■ Requirements Summarized

1. Service Fulfillment

Enhance Service Fulfillment Speed
Especially for New date services.

2. Service assurance

Improve customer assurance abilities
and level, especially for Group
customers.

3. Resource Integration

Integrate Customer line resources
and Network Resources

4. OA&M Administration

Improve OA&M administration work
including: organization, work flow,
assess index etc..

■ OSS Function Extend

1. Integrate Service Fulfillment system
in BOSS and network resource
system and service configure system
in OSS

2. OSS faces not only Network, but
also customer services, Group
customers requirements.

3. Before OSS construction, OA&M
organization and responsibilities
should be defined and keep stable in
a relatively period.

3. OSS Development Trends

- Centralized Management

- Principle1 :

- Management by speciality network, Then Management Integratedly.

- Principle2 :

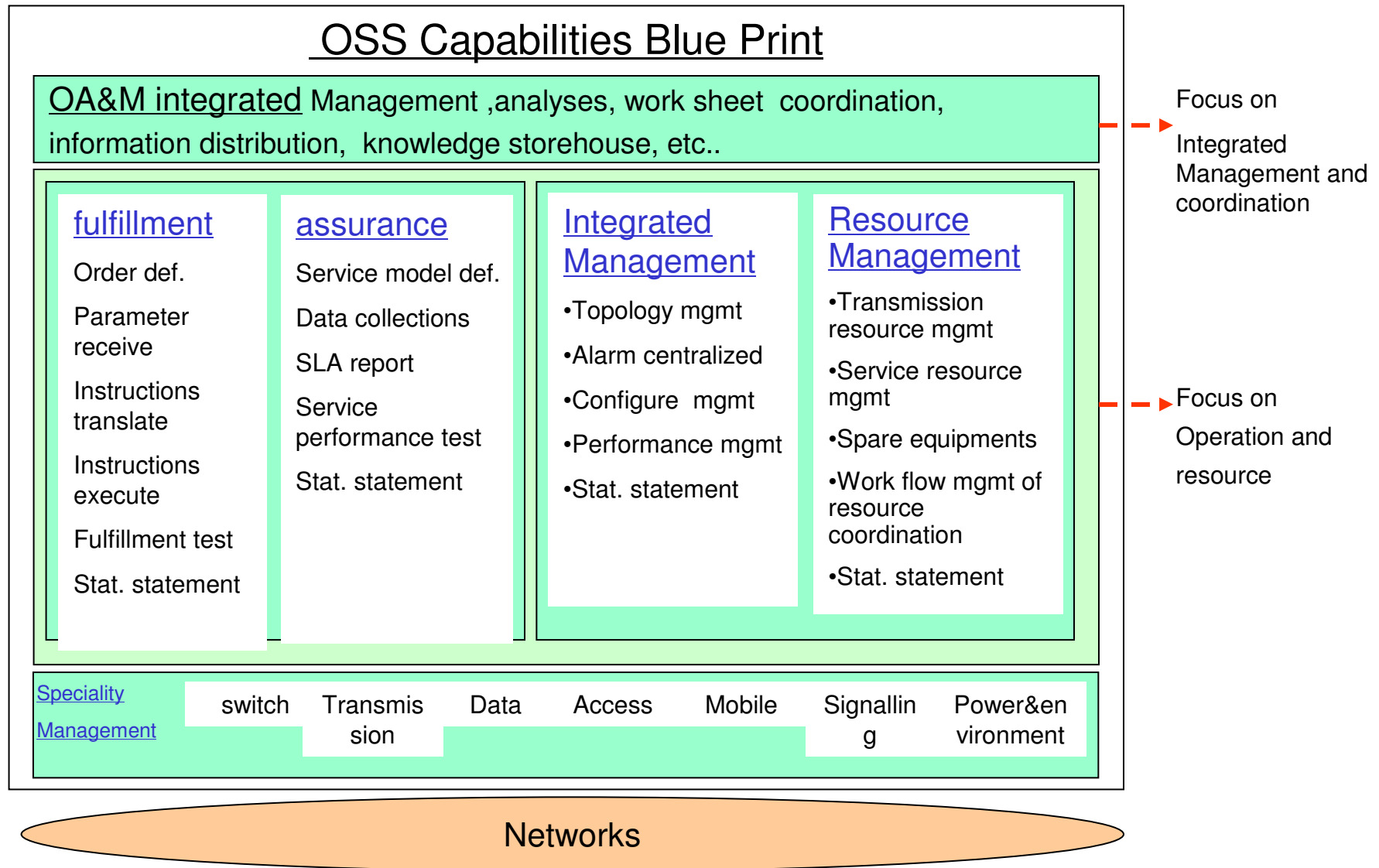
- Centralized by physically office, Then centralized by management Function.

- Constration all-round speciality network center. Centralized physically.
 - When OSS has the abilities of centralized management and operate, Adjust organization and innovate Non-centralized network management system.

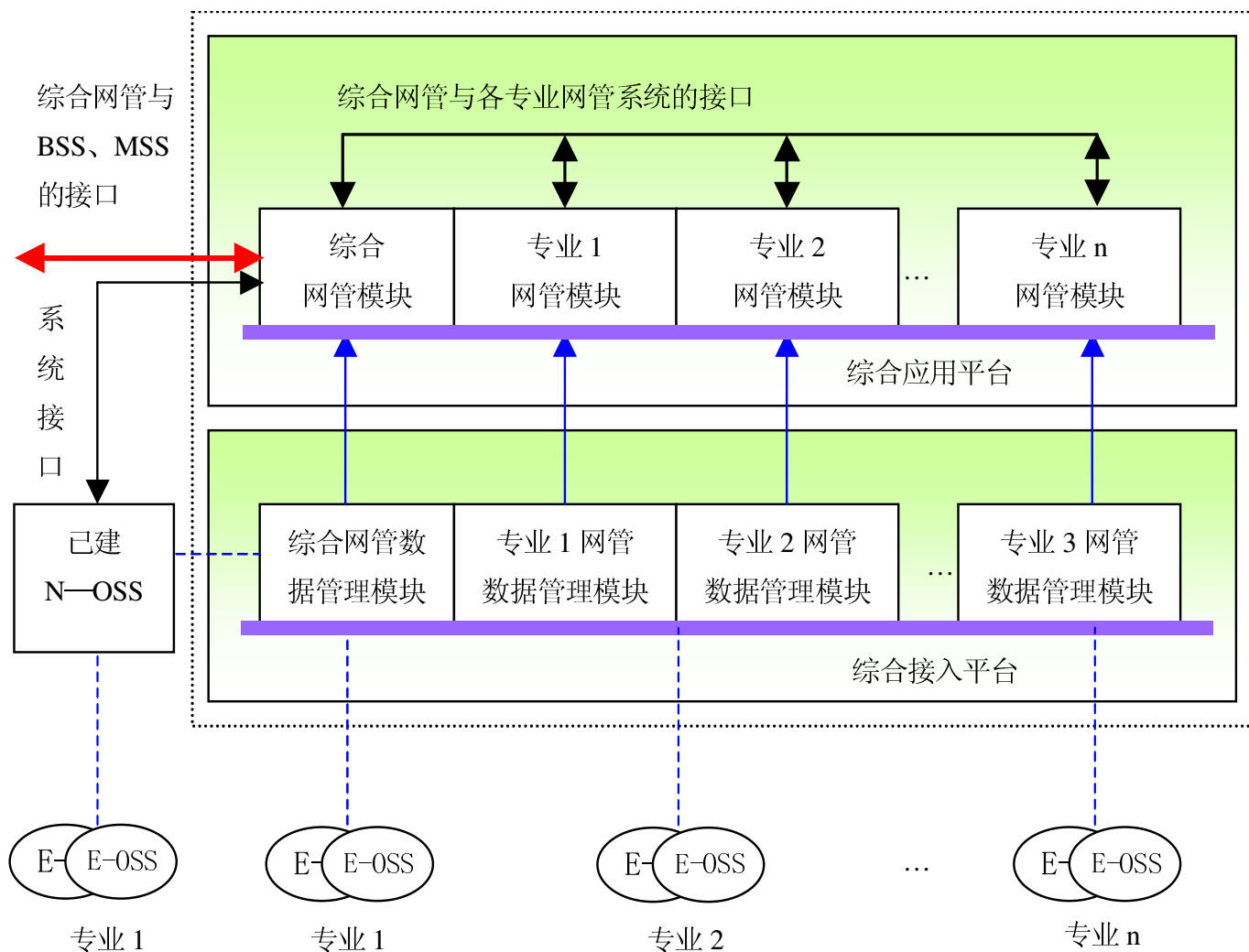
- Principle3:

- Meet the requiremnets of network OA&M, Then face customer service gradually, improve service management level.

OSS Blue print



Integrated Network Management System construction Case (INMS)



1. Based on 2 Hardware Platform which used by one specific network management system: Integrated access and Integrated application platform.

2. INMS comprise 2 modules : Integrated network management module and data management module.

注：E-OSS 子网/网元管理级网管系统;

N-OSS: 网络管理级网管系统

3. OSS Development Trends

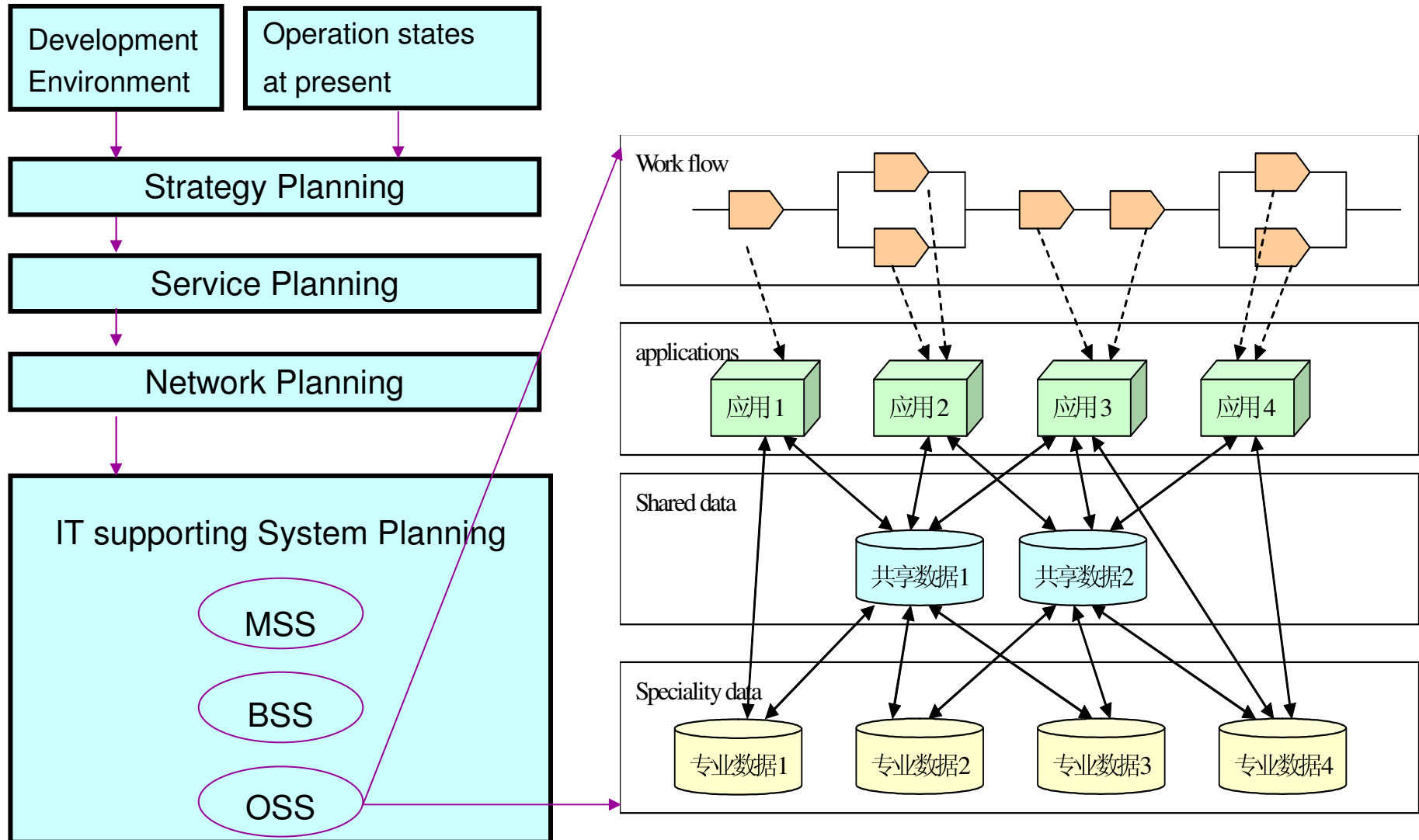
- Market oriented Management
 - OSS is simply a way to realize market care and management, OSS should perform more service layer management function for important customers, Group customers.
 - Transform from network management to service management. Based on OA&M, in line with the market development and customer requirements , provide all-round network assurance 、 optimize、 fast service access 、 quality assurance、 network appeal disposal、 Network resource difference service etc.. Support market retain and extend.
 - OSS provide end to end service assurance to customers in OA&M.
 - Provide lean service by using SLA。

3. OSS Development Trends

- work flow Management
 - Standardization of management flow.
 - Stability of work flow
 - Supporting evolution of work flow

Part3: OSS Planning Method

OSS Planning is only a part of Enterprise Planning systems.



Important factors be considered in OSS Planning

Factors	Notes
Centralized construction	Local-centralized Provincial-centralized
Customer and service oriented	Focus on the network resource occupied by customers. Establish relations between customers and network resources.
Service flow	Drive OSS construction by service work flow ; Optimize and stabilize work flow by using OSS. Improve service providing speed and efficiency.
Speciality network management	Deal with relationships correctively between the Specific Network OSS and INMS
Element network management system provided by vendors	Exert Vendor's OSS function
Technologies used	CORBA, GDMO, SNMP, Web