

TKK Telecommunication Forum
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Behind Subscription and Bill

Kari Pasonen

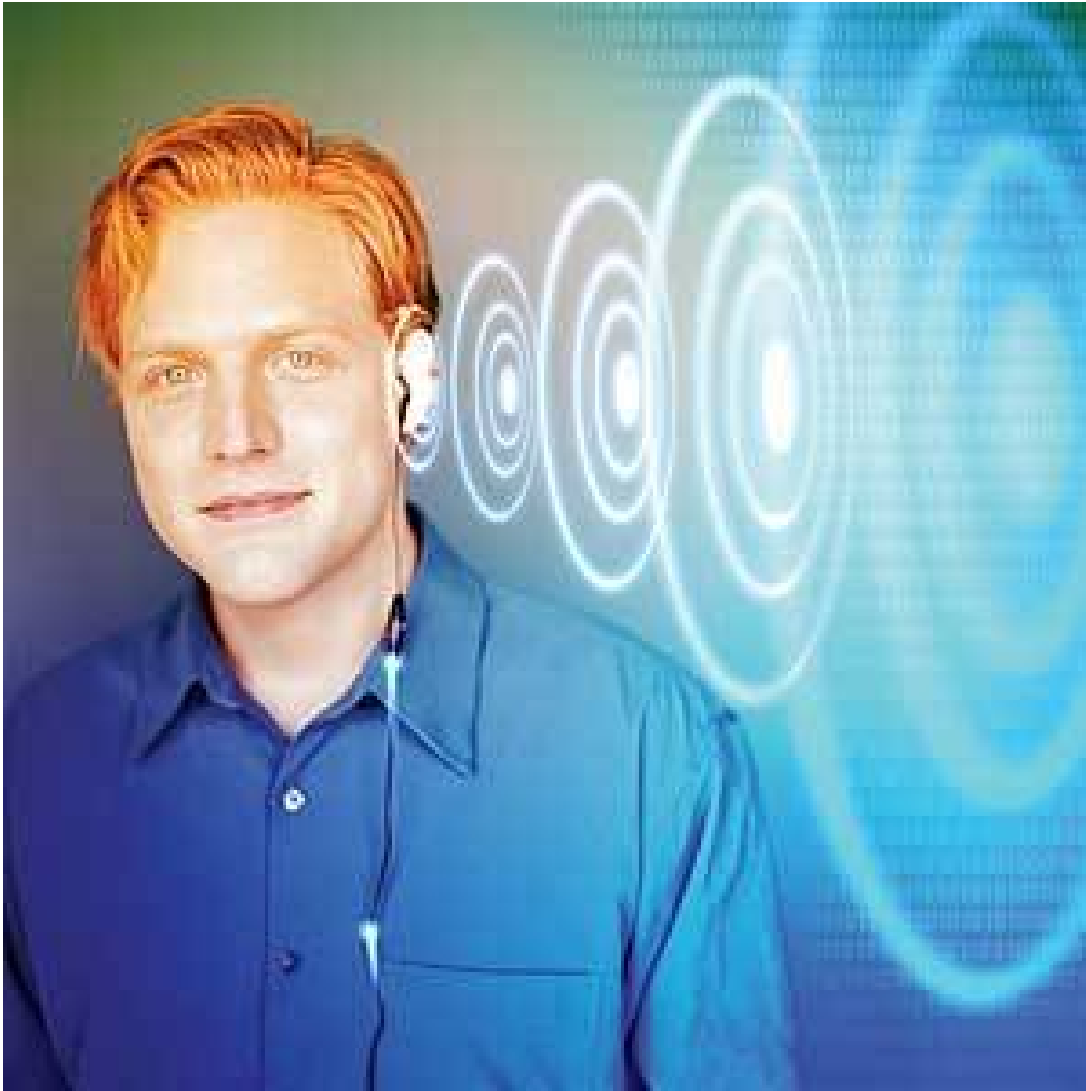


Agenda

The Back Office

Subscription Management = Fulfilment

The Delight of Billing



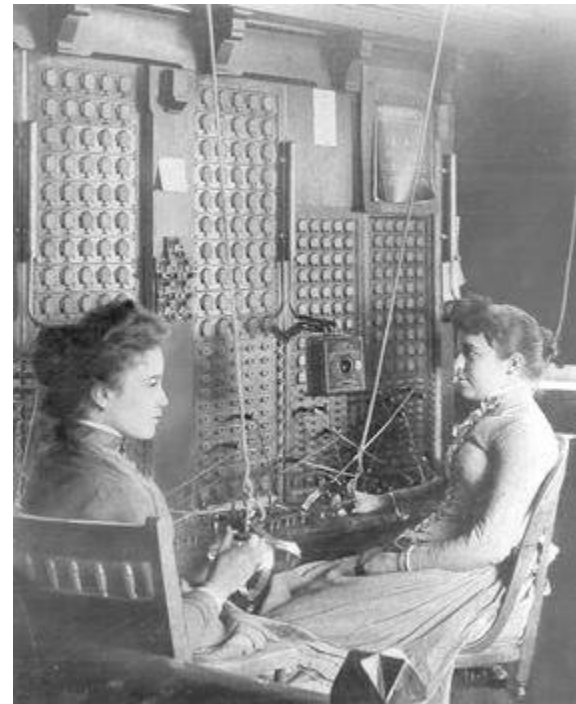
Communication from the Back - Office

"To overcome the complexity of network technologies do we require twice as complex management systems?"

*Unknown from
the floor of
Optimizing OSS
Seminar, October
2005*

What is Subscription?

A Wire and a Hole in a Switchboard



What is Subscription?

A Wire and A Hole in a Switchboard

A Phone number



What is Subscription?

A Wire and A Hole in a Switchboard

A Phone number

A SIM Card



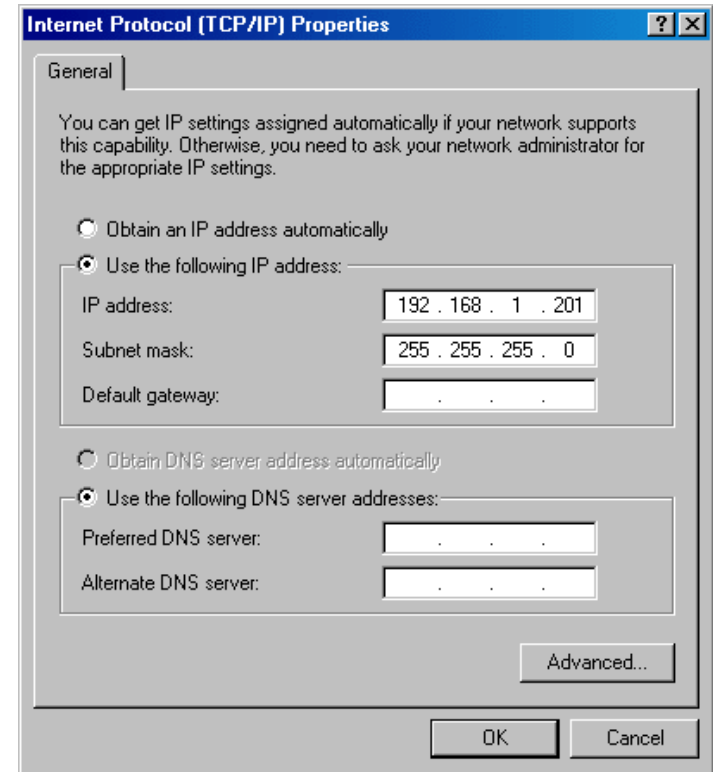
What is Subscription?

A Wire and A Hole in a Switchboard

A Phone number

A SIM Card

An IP Address



What is Subscription?

A wire and a hole in a switchboard

A Phone number

A SIM Card

An IP Address



An agreement with customer to provide a range of services
- not at all a technical issue.

A portfolio of communication products offered to the customer

What can a Subscription contain?

20 - 30

100 - 300

5 - 15

5 - 10

3 - 10

Service Category	Core Services	Capabilities & Features	Customer Segments	Time Frame	Channels
Voice / Voip	Local / Long dist International Unified messaging Conferencing	Call forward Caller ID Follow me Virtual TN	Region 1 Region 2	Summer Winter Olympics Anniversary	Stores Call Center Self Service Retail Virtual operators
Mobile	Minutes SMS MMS WAP Streaming GPRS HSDSP	Push-to-Talk Location IM / Chat A number Balance	Teen Young adult Family Traveller	Week-end special	
Data xDSL	Internet access eMail Webpace Security	Speed SLA	Postpaid Prepaid		
TV / Video	IPTV DigiTV VoD Conferencing	Basic service Sport package	Enterprise SME Home office		
Office	Storage Firewall ASP applications				

**Thousands of Products
In Portfolio!**

OSS and BSS

The IT (Information Technology) Infrastructure behind the telecommunication services

OSS = Operations Support Systems

- Fulfilment automation
- Network management
- Service assurance

BSS = Business Support Systems

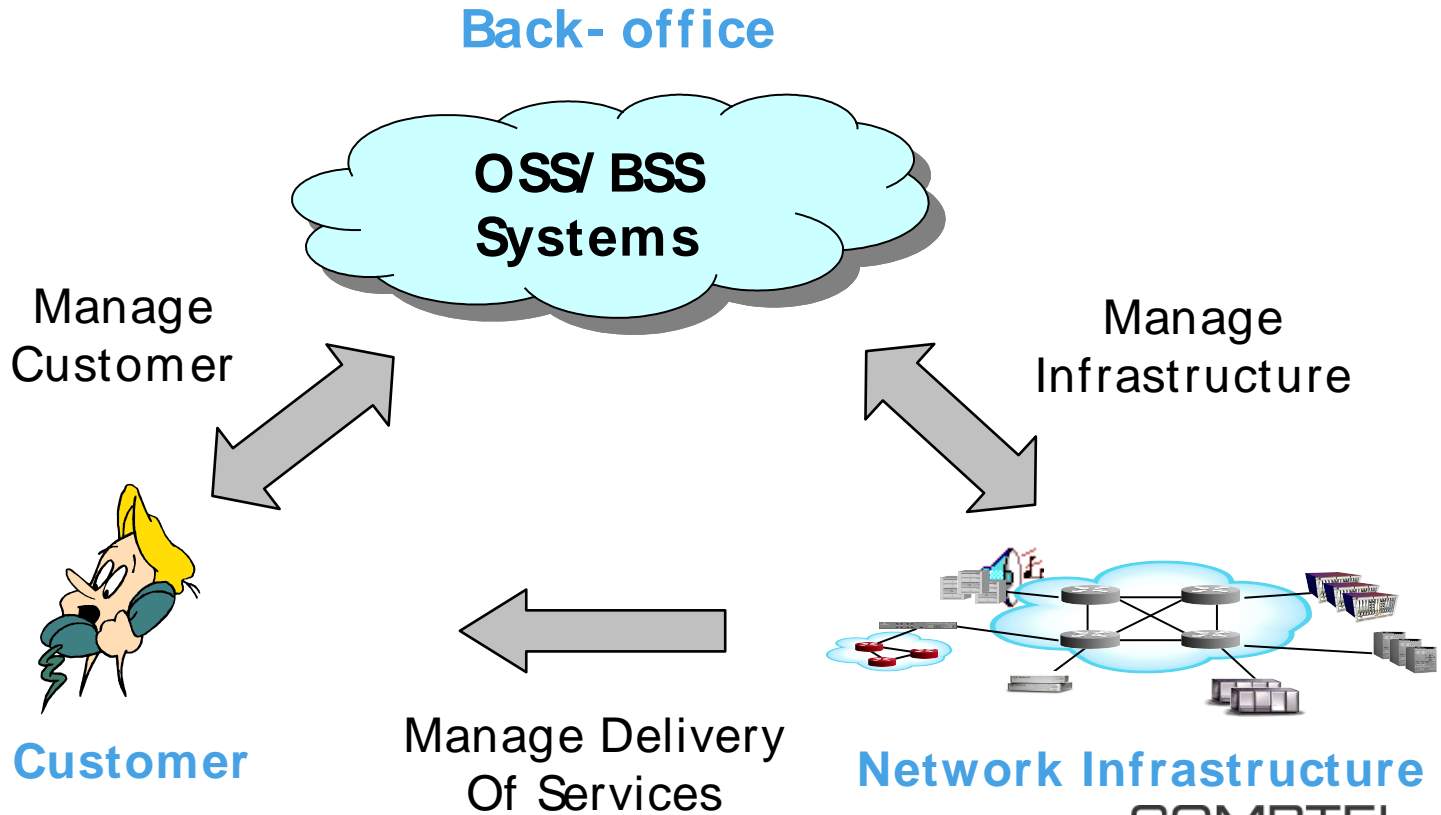
- Billing
- Customer care

Annually 30 – 40 B€ market

- Legacy replacement
- Automation to save operational costs
- Service quality
- Differentiation

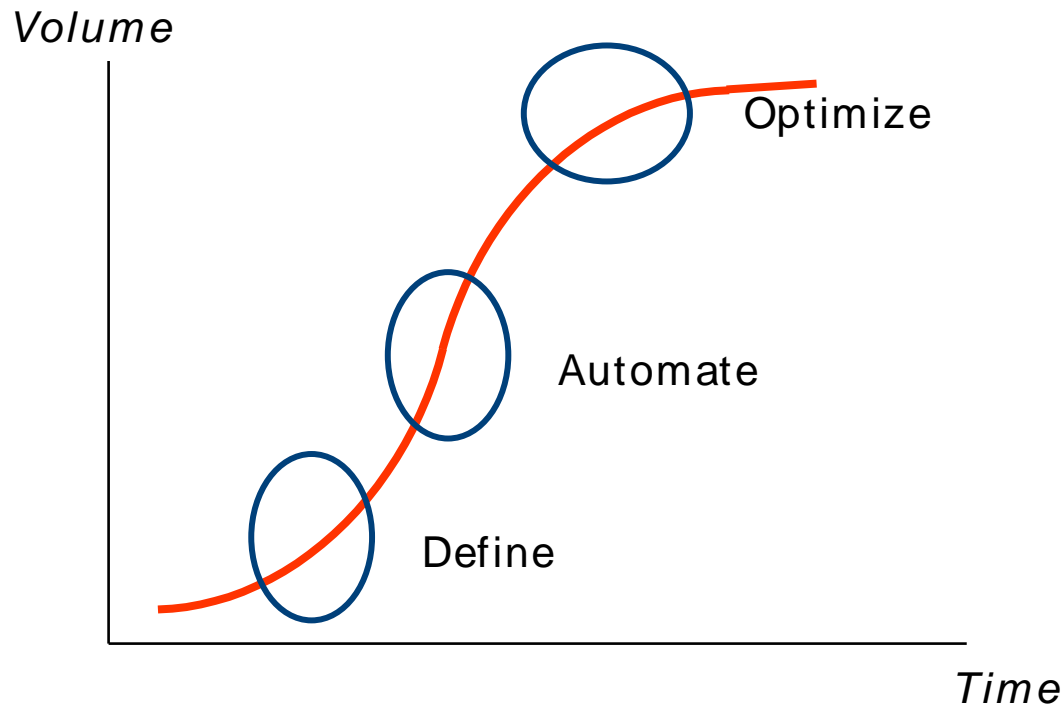
IT Back-office as Business Front-end

Translate the technical systems to commercial products that are sold to customers.



Role of OSS

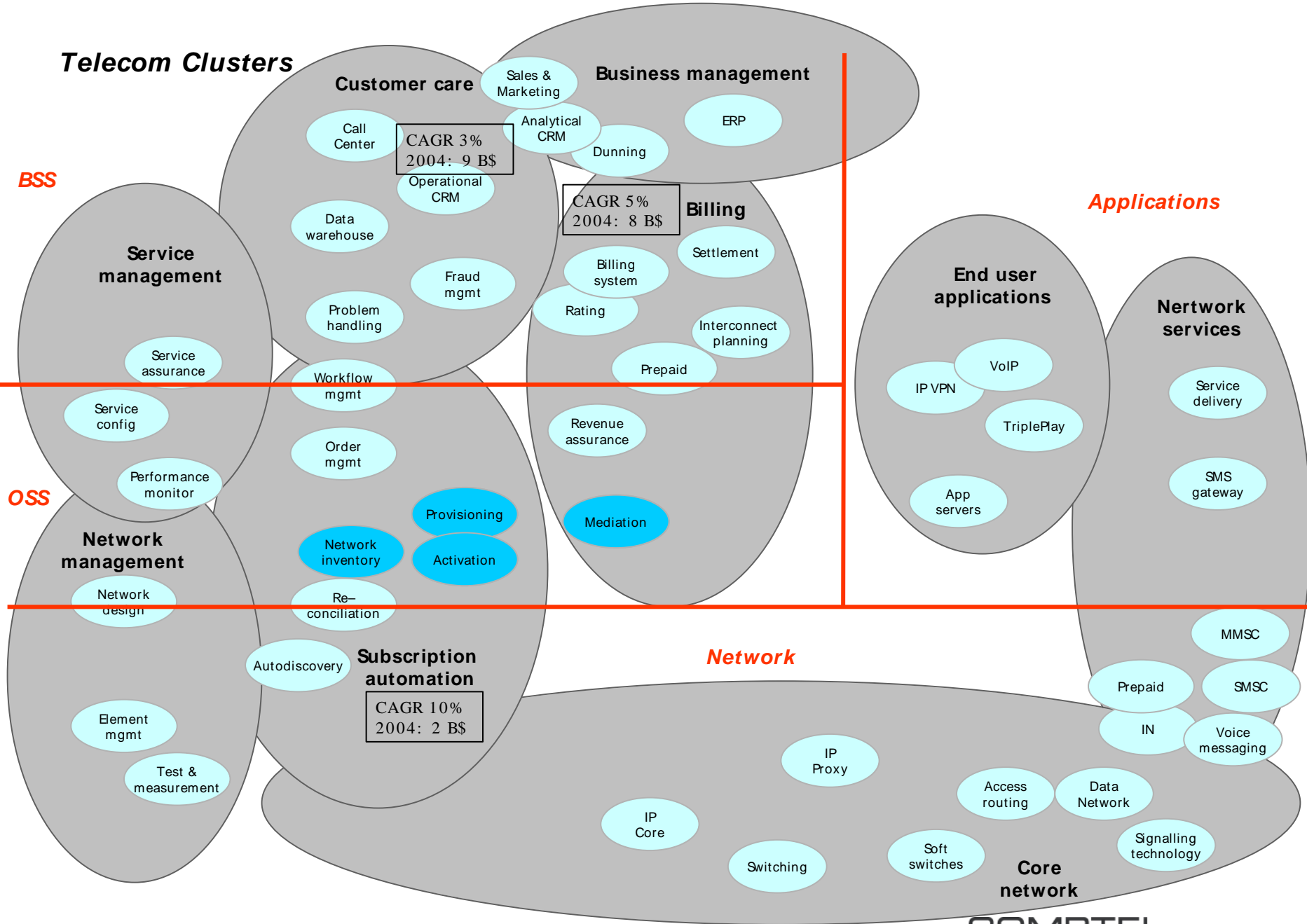
Emphasis during different phases

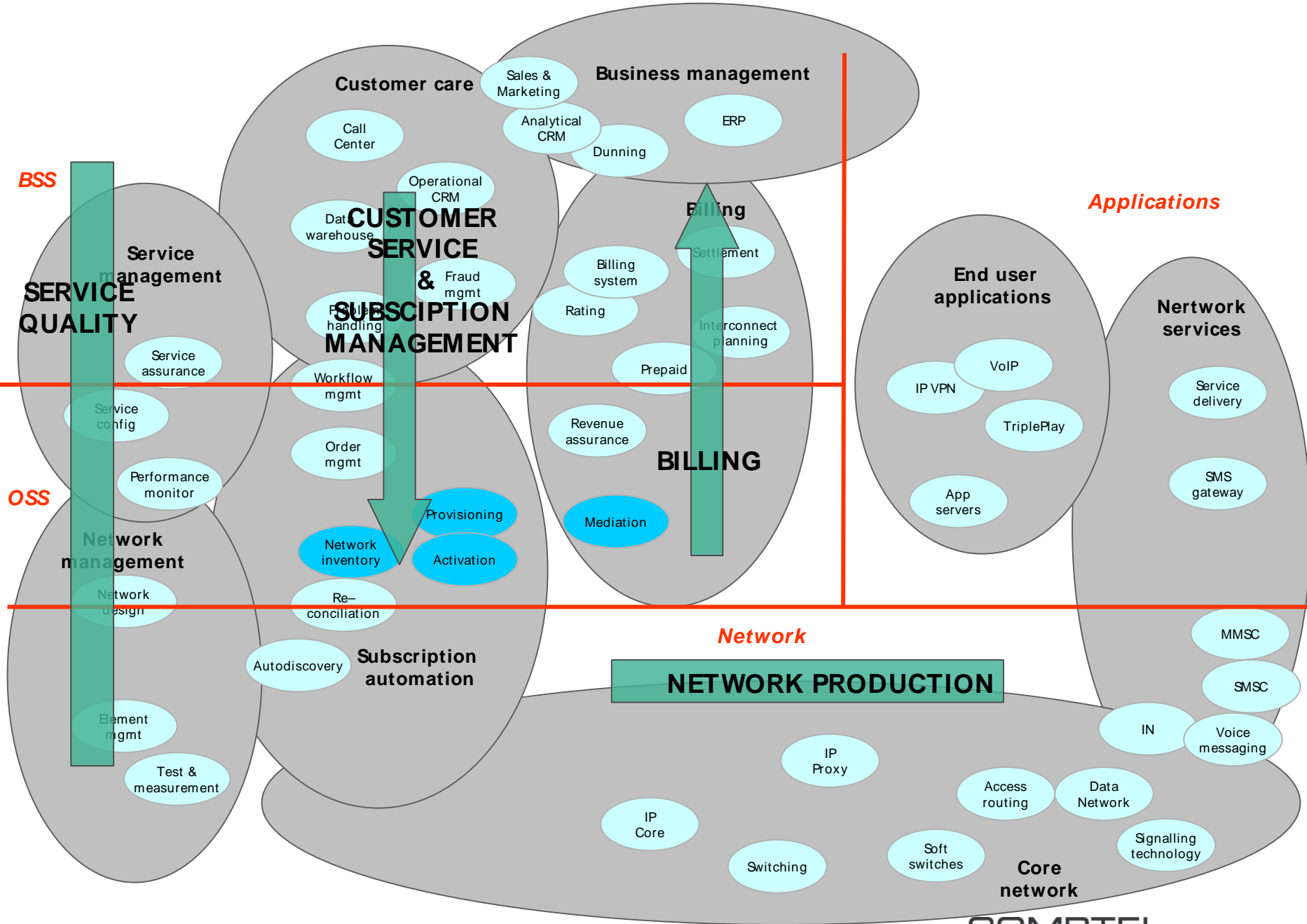


Why OSS automation

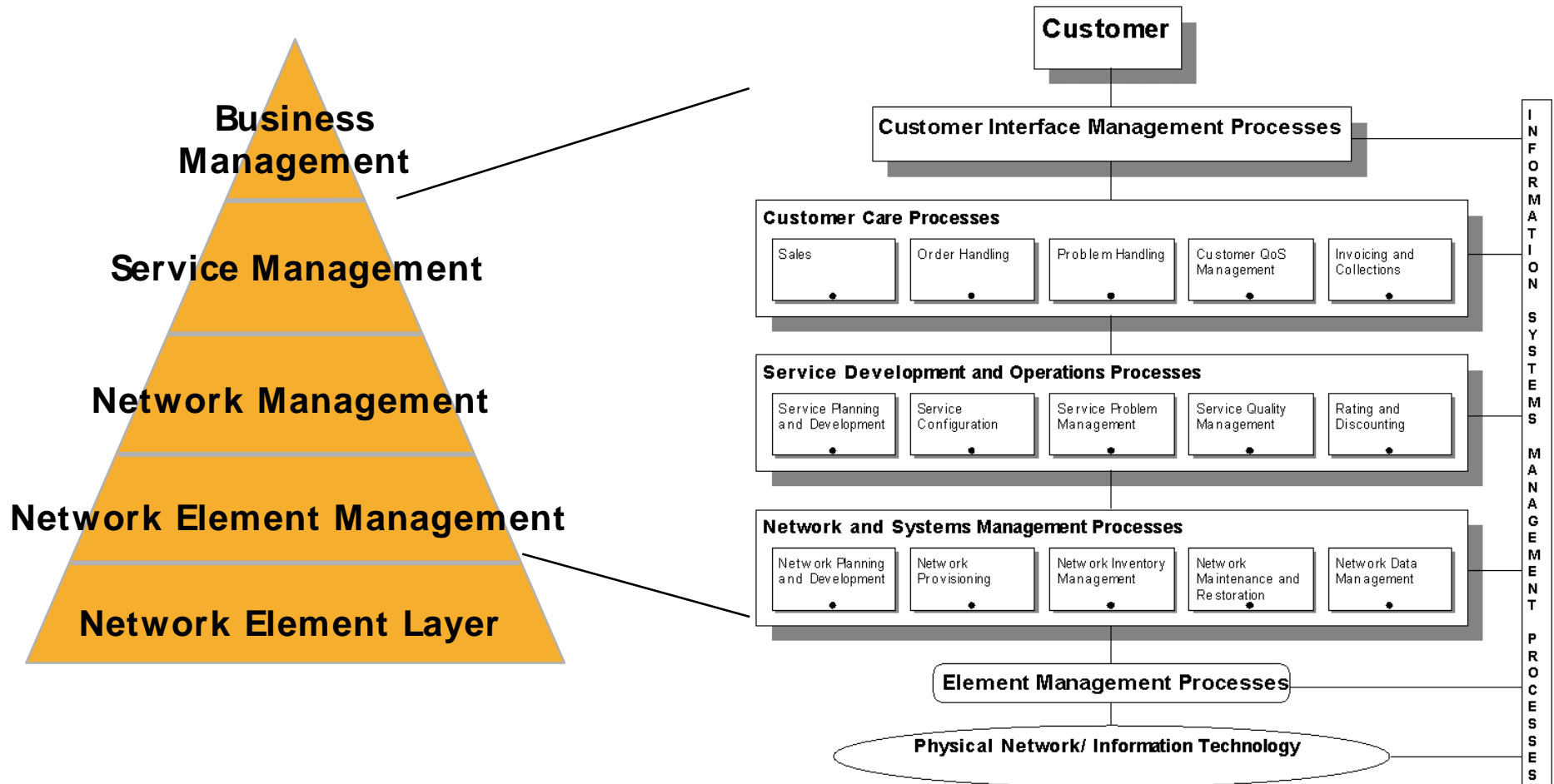
- Optimize operational costs
- Improve service delivery speed
- Avoid faults

Telecom Clusters

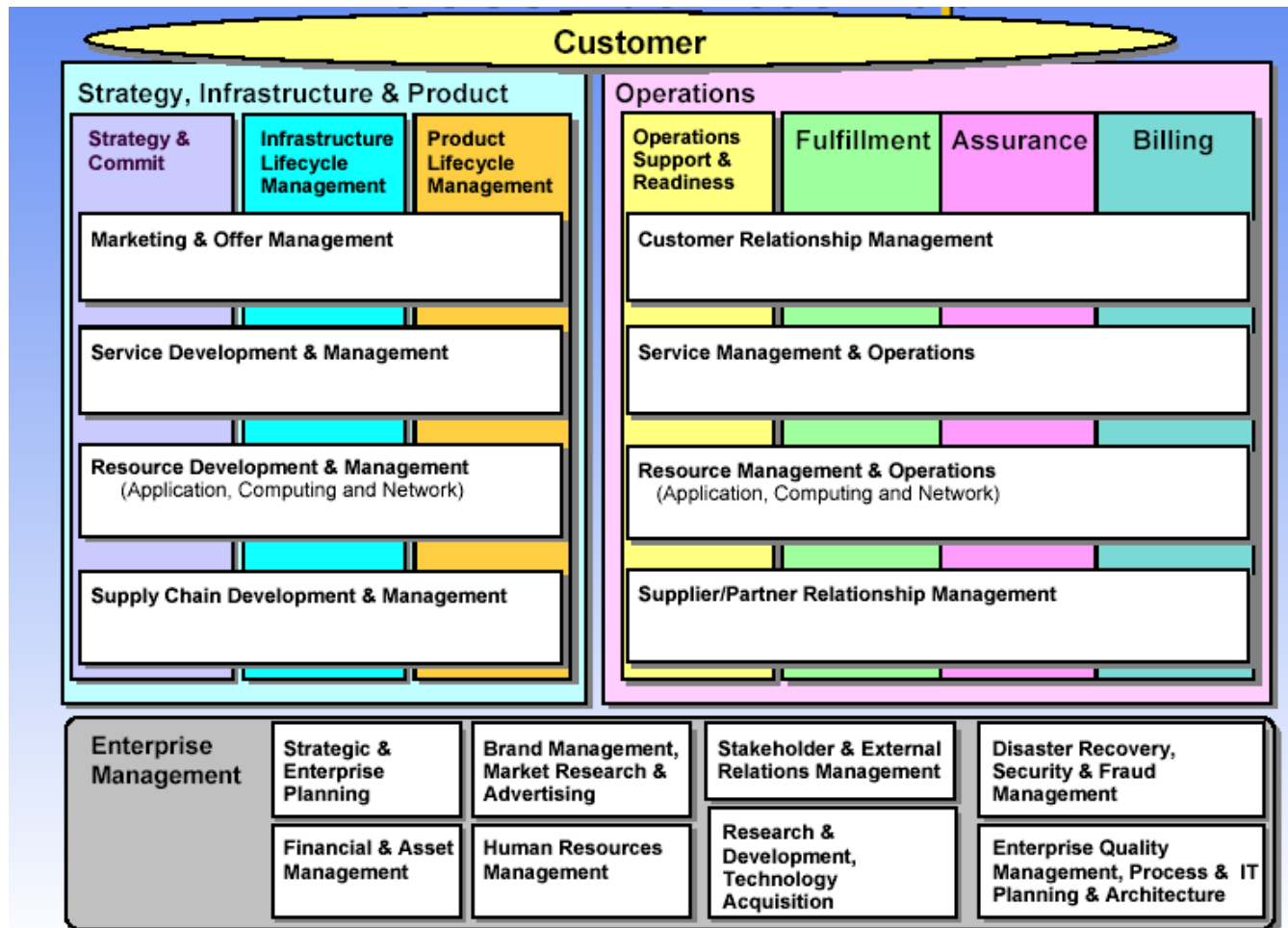




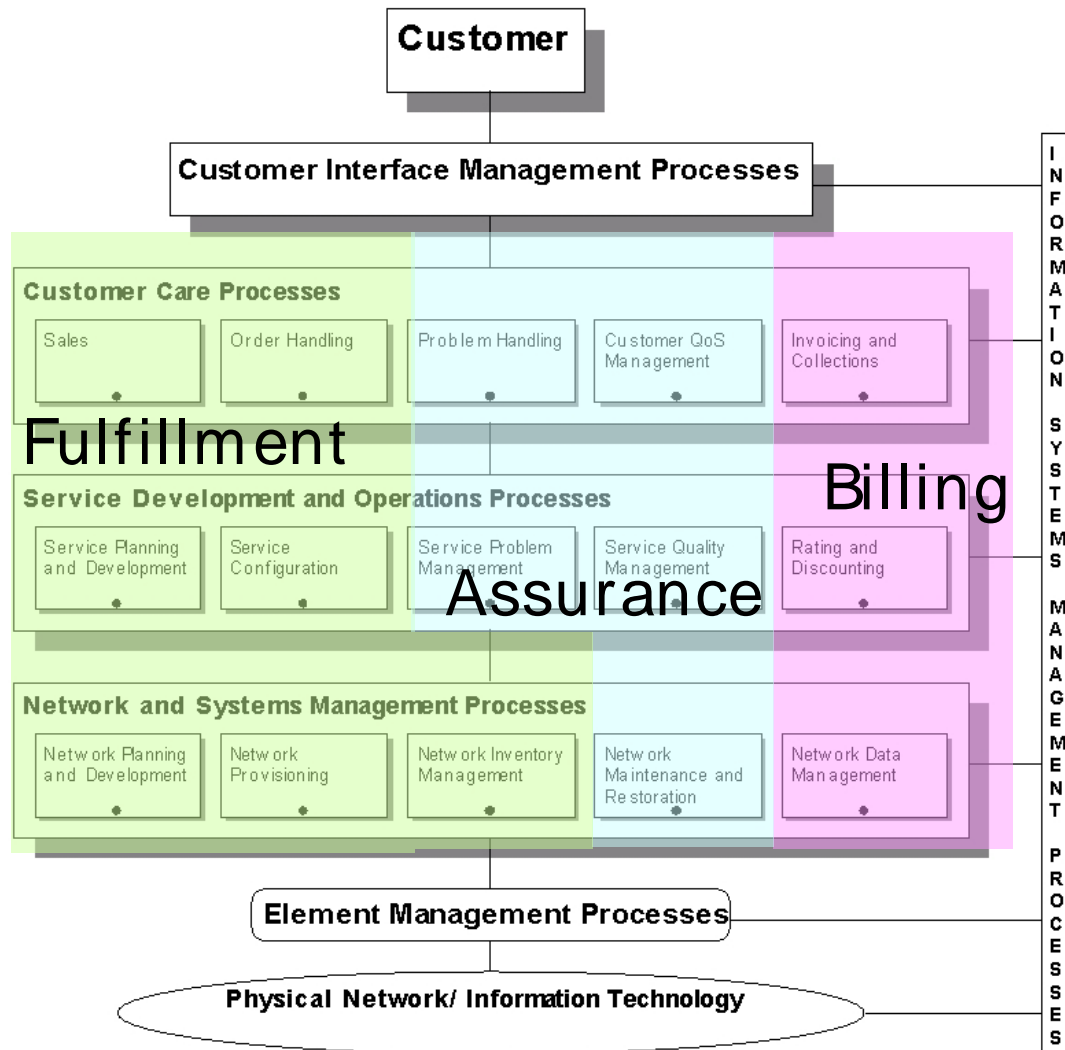
TeleManagement Forum and eTOM Standard

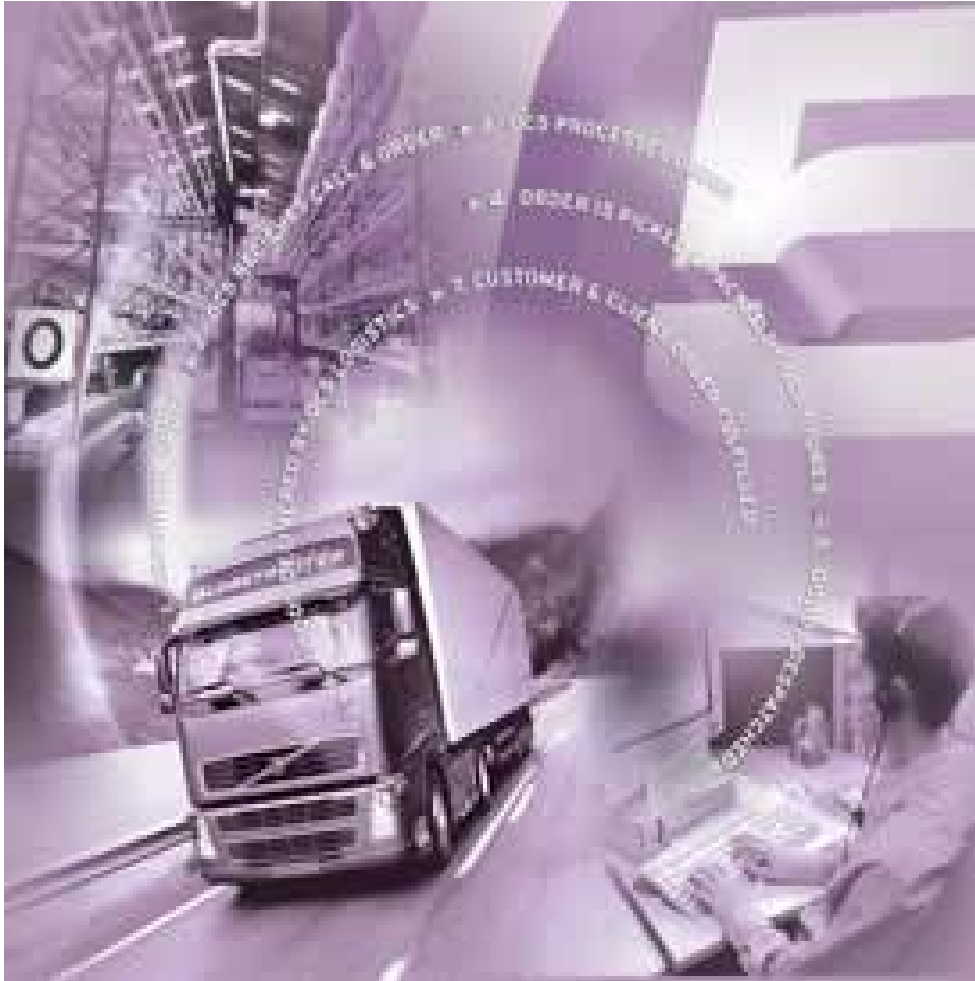


eTOM Level 1 Processes



The FAB





Fulfillment - speeding order from sales to revenue

Opening connections
and keeping them
tuned for optimal
operation.

Order fulfilment in eTOM

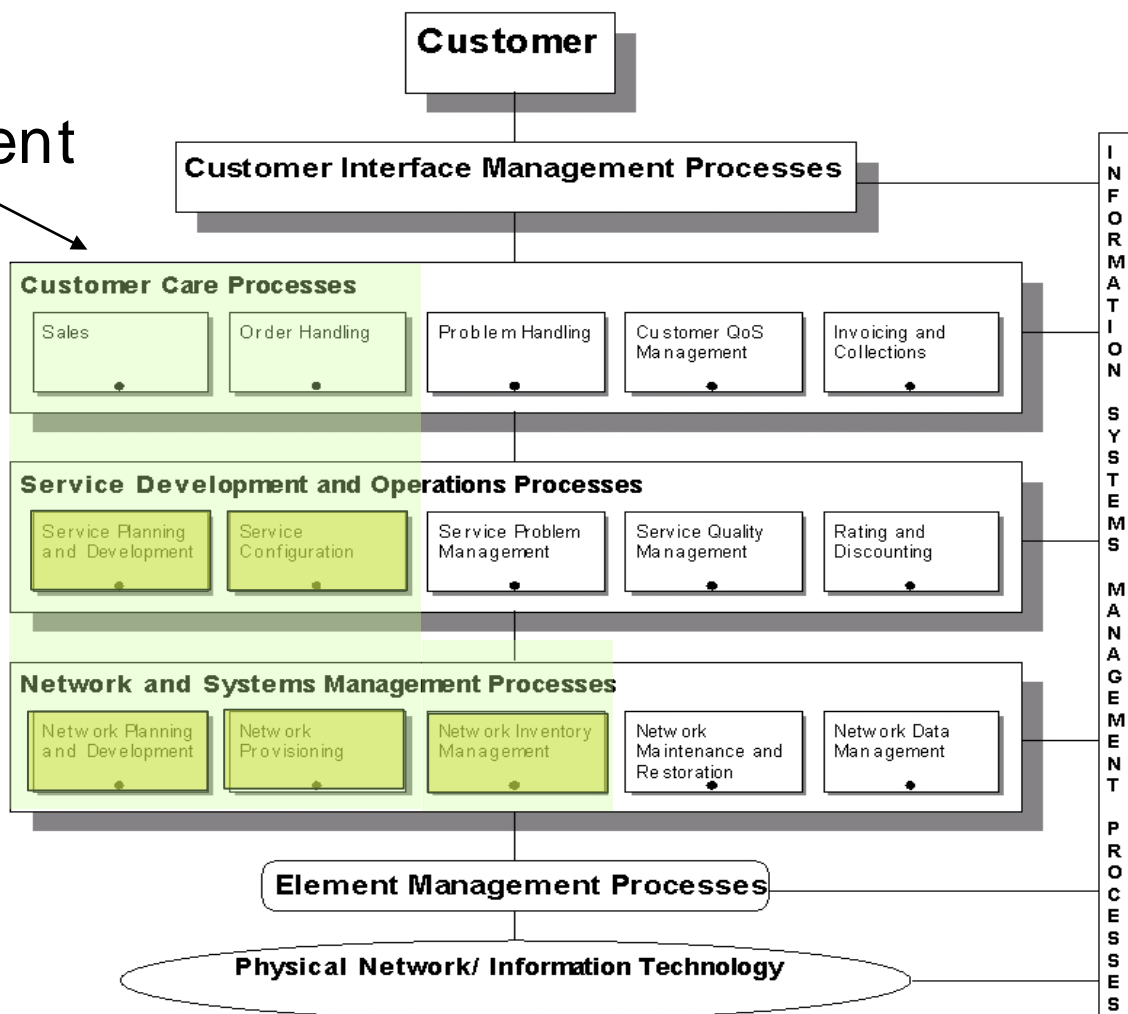
Fulfillment

Includes OSS elements:

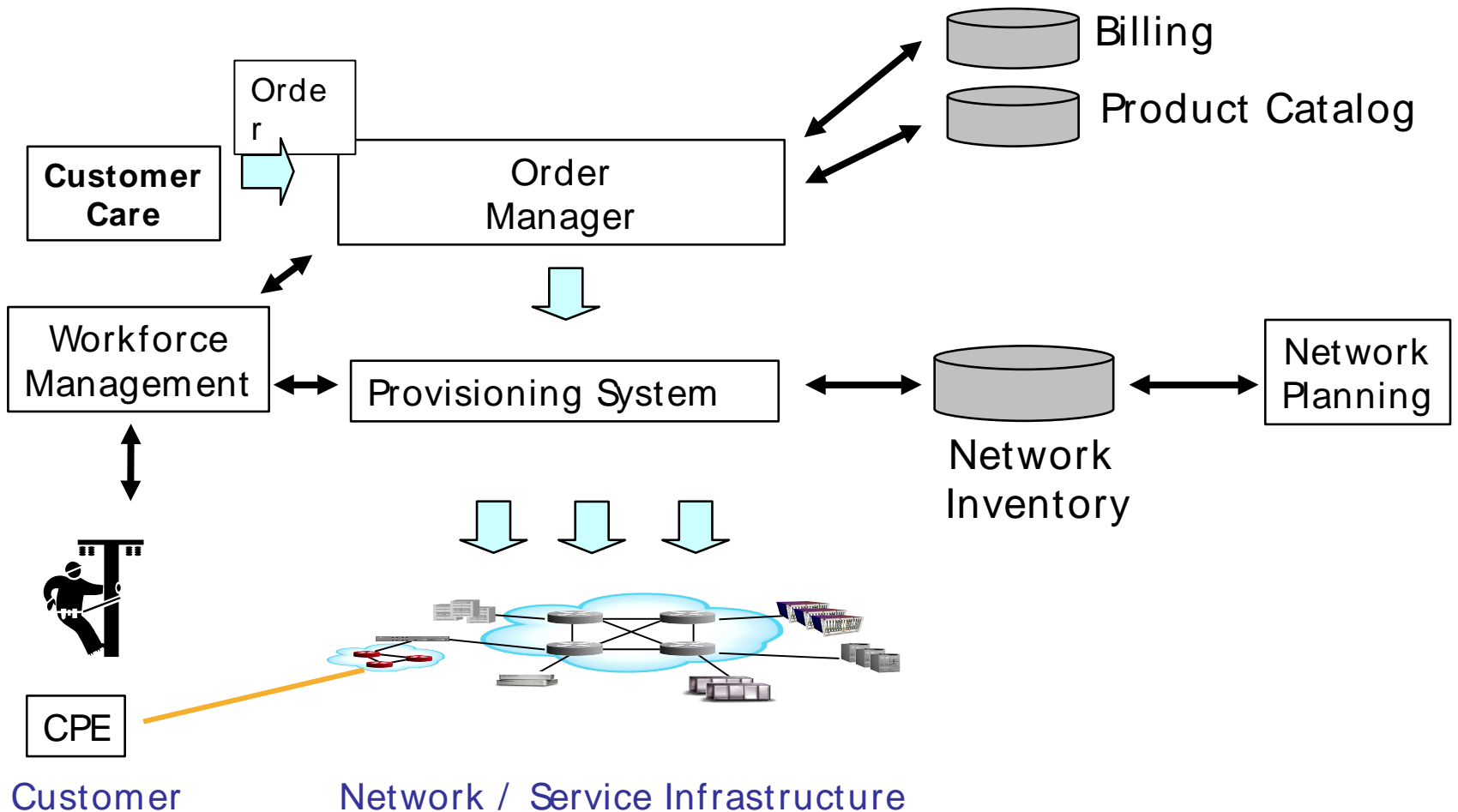
- order management,
- inventory,
- provisioning,
- service activation

BSS elements

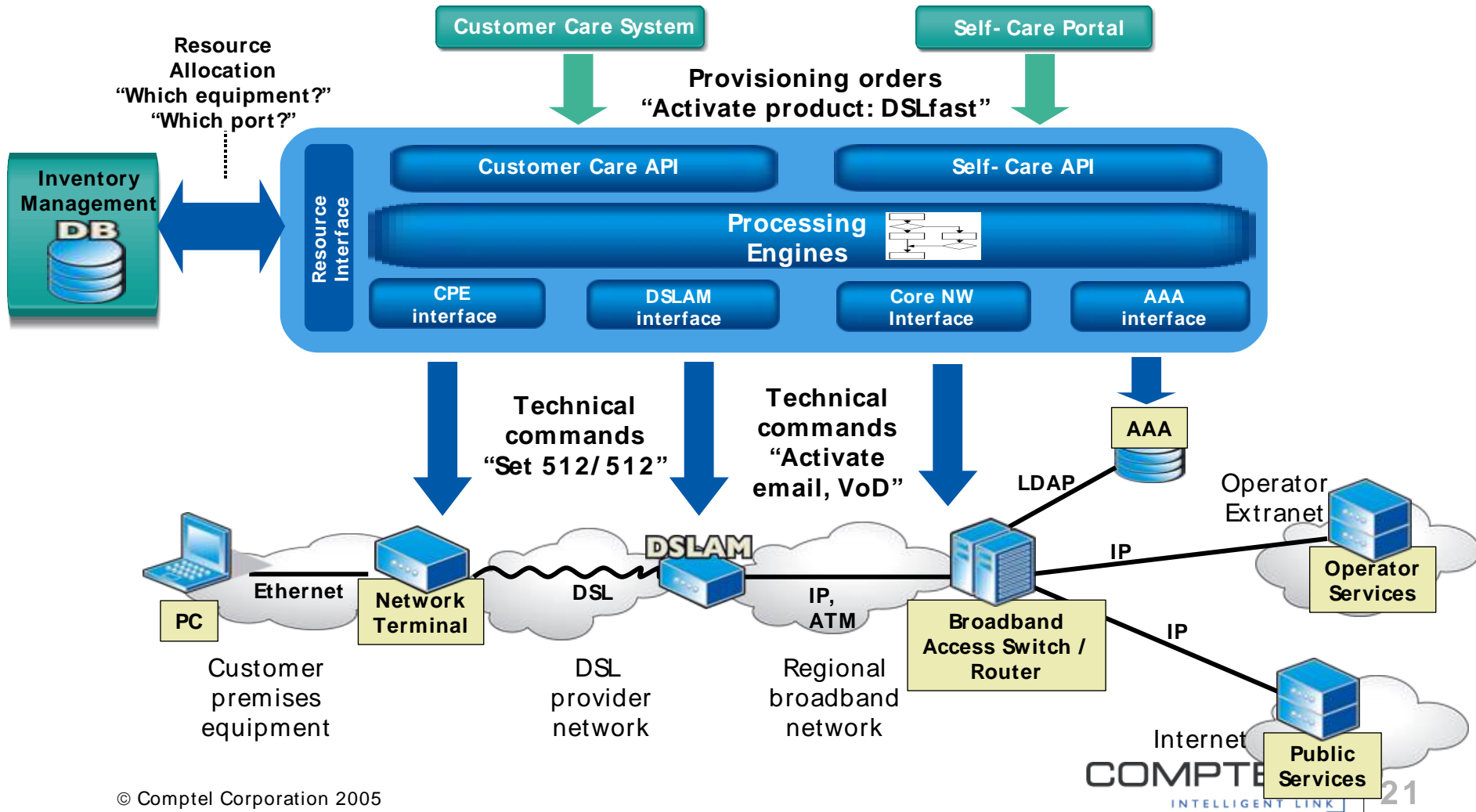
- order entry,
- product planners



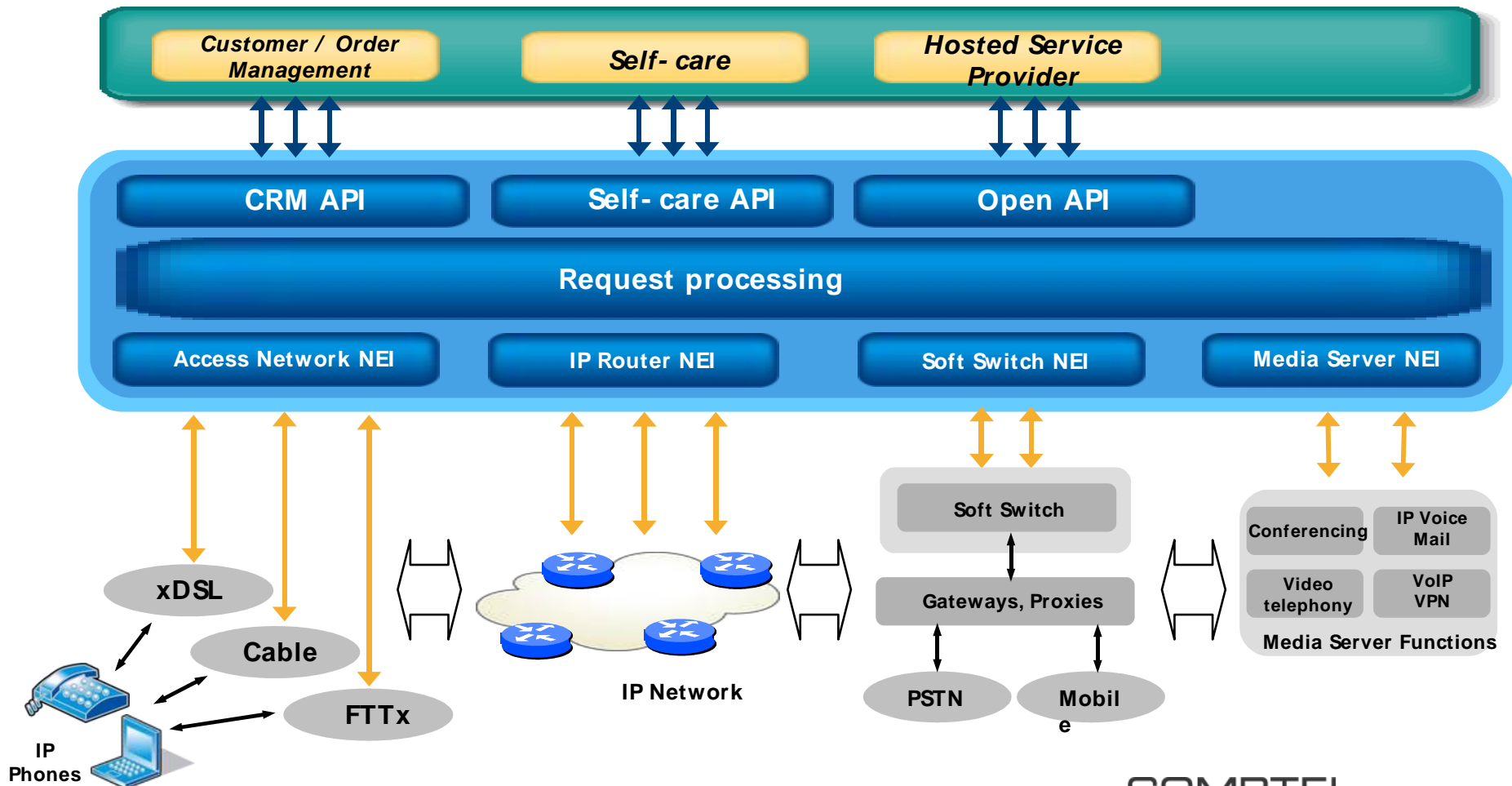
Order Fulfilment Process



Provisioning layer – ADSL Example



Provisioning Layer - VoIP Example



Network Inventory

A repository for all network related resources

- Logical connections
- Transmission network
- Access network
- Switching equipment

Used for

- Network planning
- Allocating resources in fulfilment
- Optimizing network investments
- Finding root causes for problems
- Reporting, financial statements (SOX)



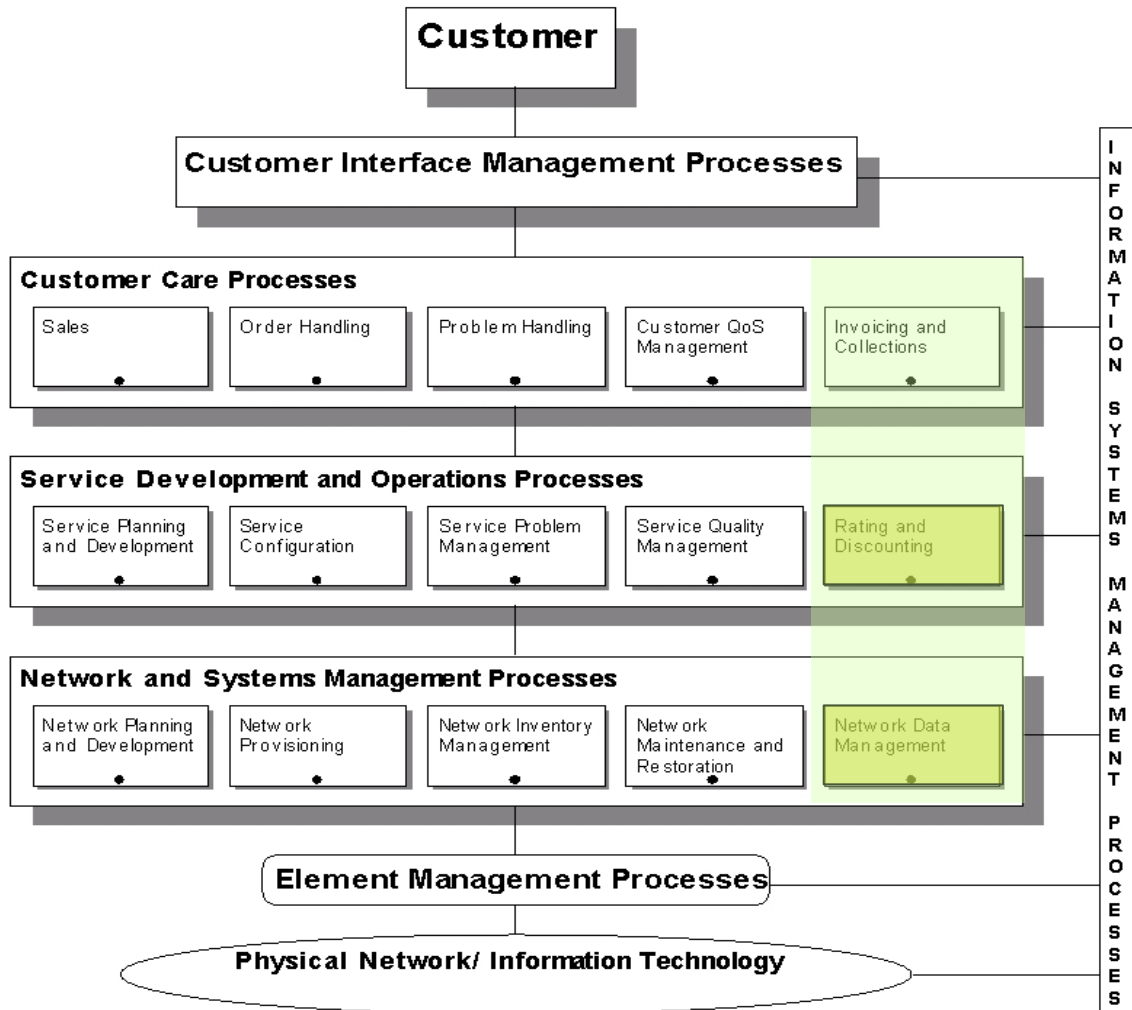


“What Have I Done To Deserve This”

- Pet Shop Boys

Telephone billing systems are the largest commercial transaction processing systems running currently on earth?

Billing Process in eTOM



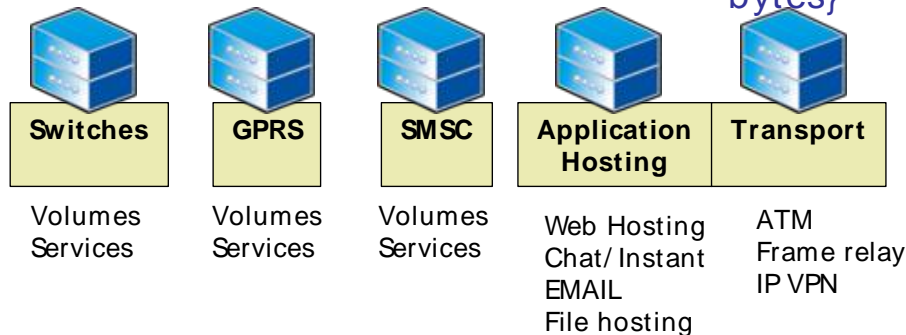
Collection of CDRs

Billing and Support Systems

Mediation System

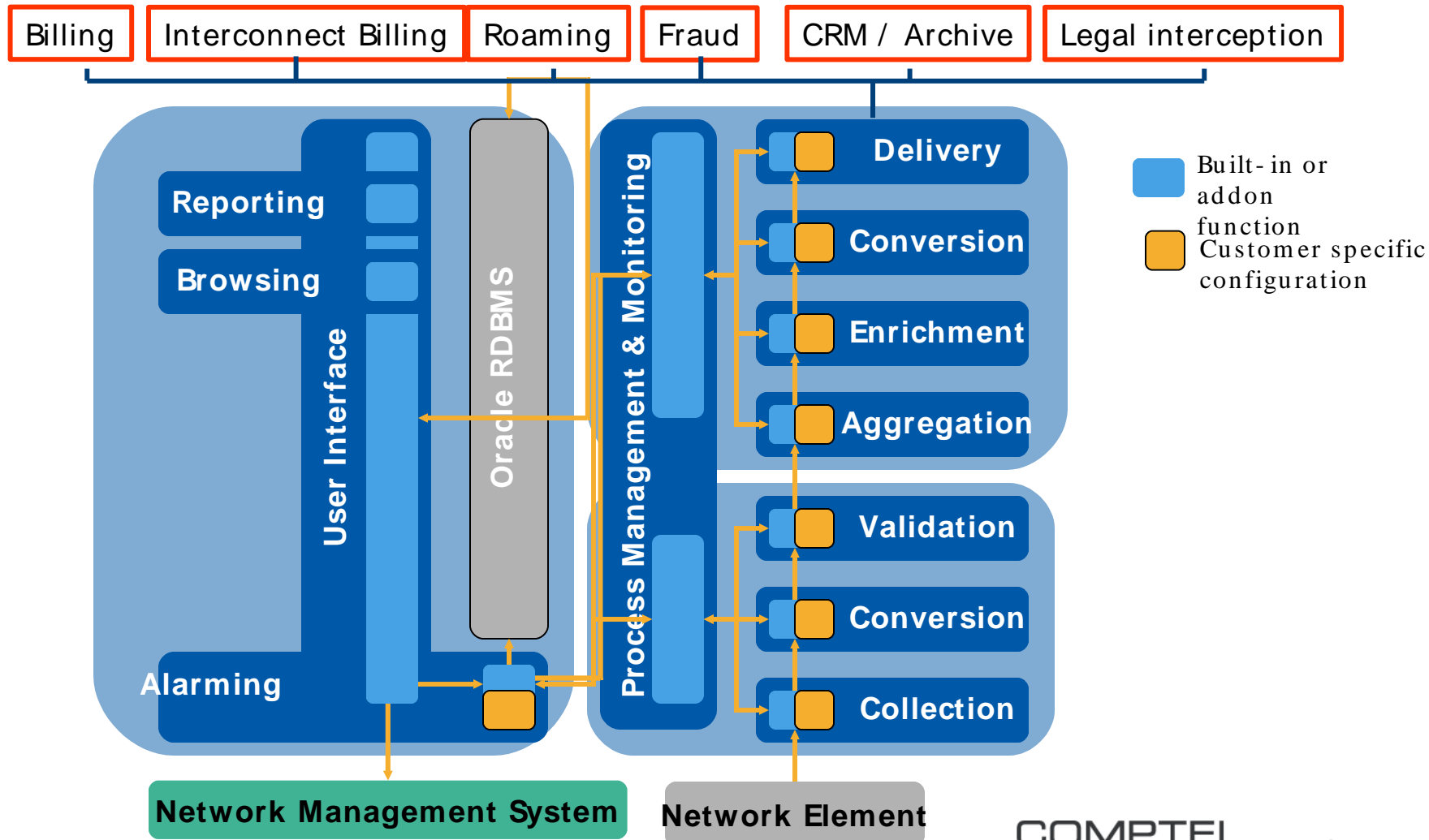
Packet data {volume, duration, ...}
QoS {throughput, latency, loss, ...}

Application data {volume, bytes}

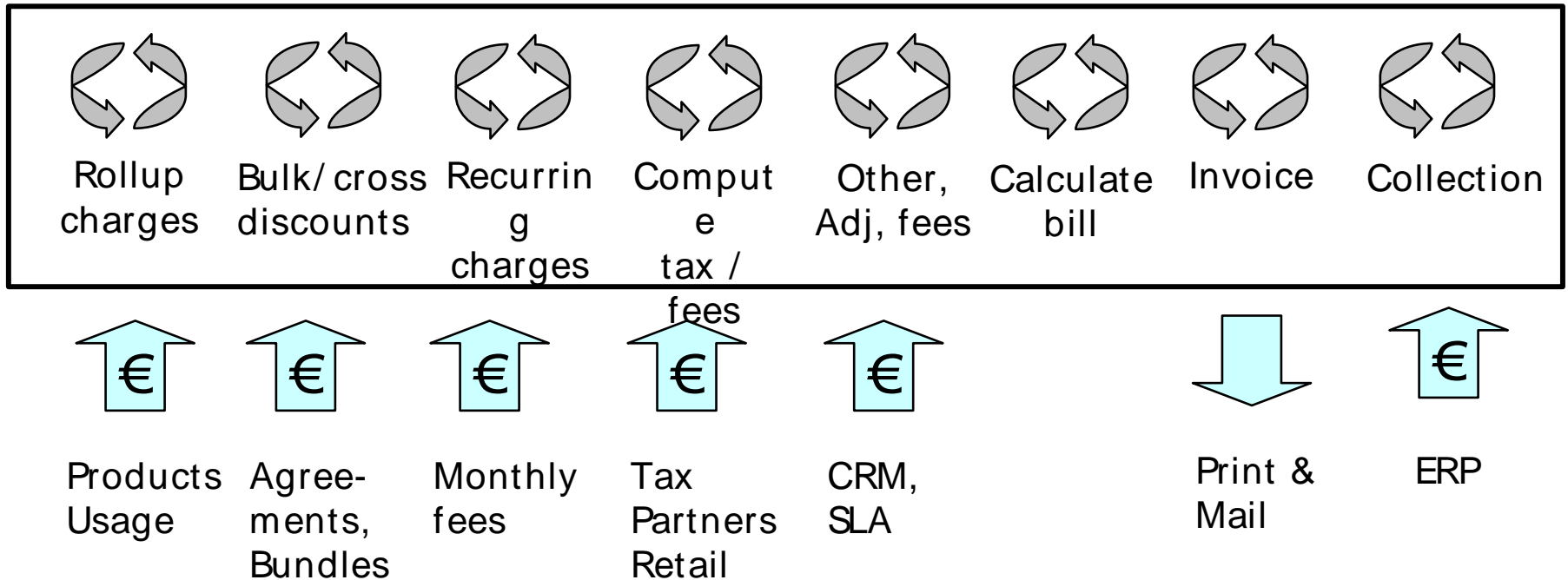


- No single collection point
- Heterogeneous infrastructure
- Inconsistent formats, access, and semantics
- Rich usage information
- Records are short-lived

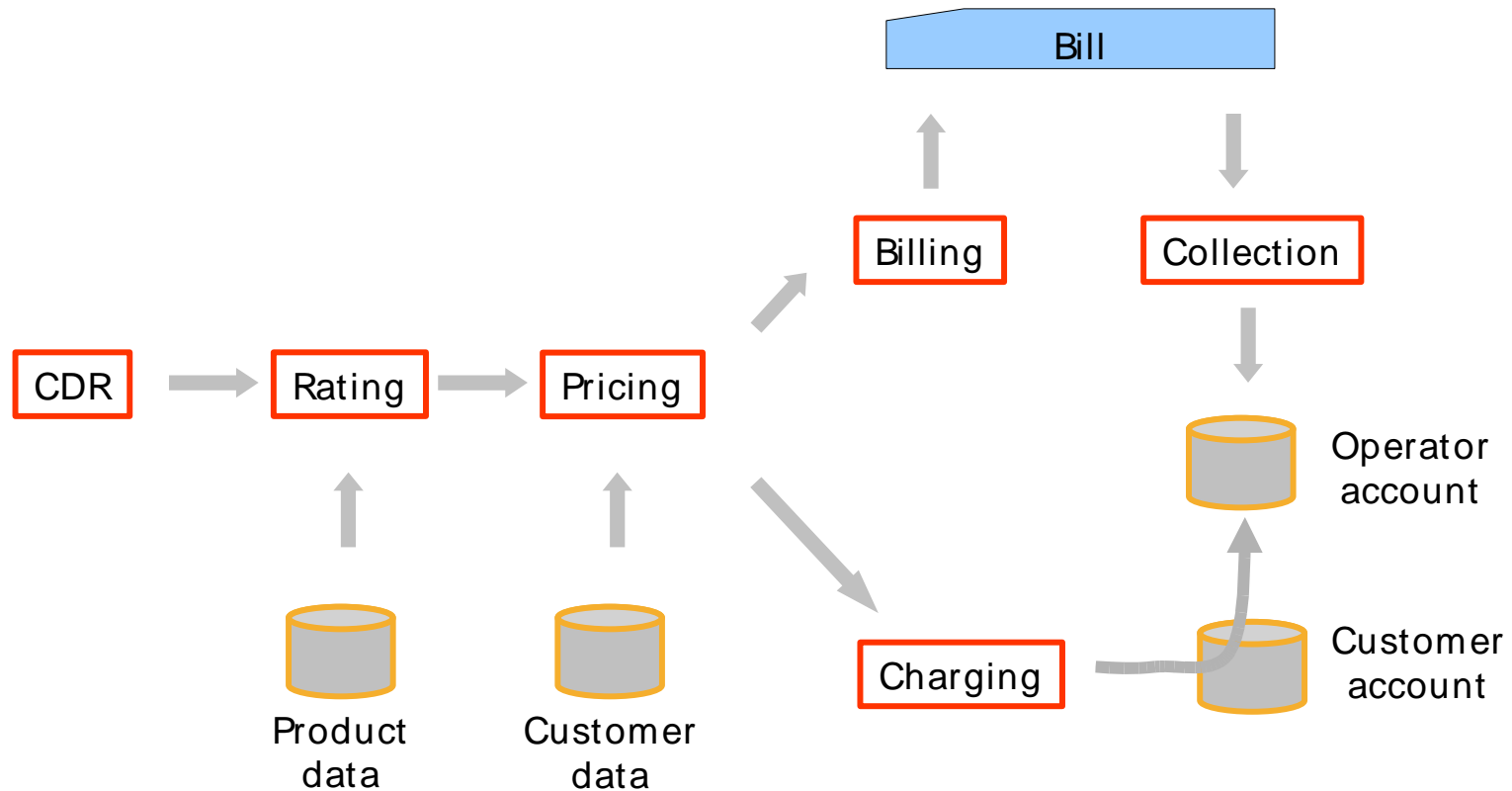
Mediation stages and clients



The Billing Cycle



Rating, Pricing, Billing, Charging





The Challenges Of OSS/ BSS Now

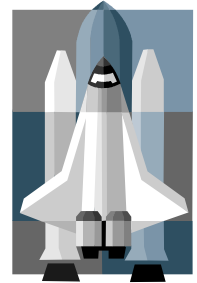
For a hundred years there was only one service (voice), ten years ago data emerged.

Nobody knows how many services need now to be managed and charged.

What fundamental things have happened in the telecom recently ?

Technology has evolved over a critical threshold in

- Processing power
 - Transmission speed
 - Memory size
- Computing technology
 - Signal processing technology
 - Material technology



Open global markets

- Standardized networks
 - Global operating groups
- SP & Industry initiative
 - SP consolidation



REACHABILITY needs have been filled
ENTERTAINMENT is the new king

- I'm online – what have you to offer me !
- From reachability expertize to entertainment expertize
- New segmentation



Convergence

Convergence in Billing

- Replacement of dedicated Prepaid and Postpaid systems with single real-time transaction based converged system
- Cost / time of building same services into both billing systems
- Consolidation in billing vendors has started to be prepared for this

Convergence of Networks / Services

- Every operator will be Triple Play (voice, data, video/ TV)
- Cross product bundles
- Flexibility in business models



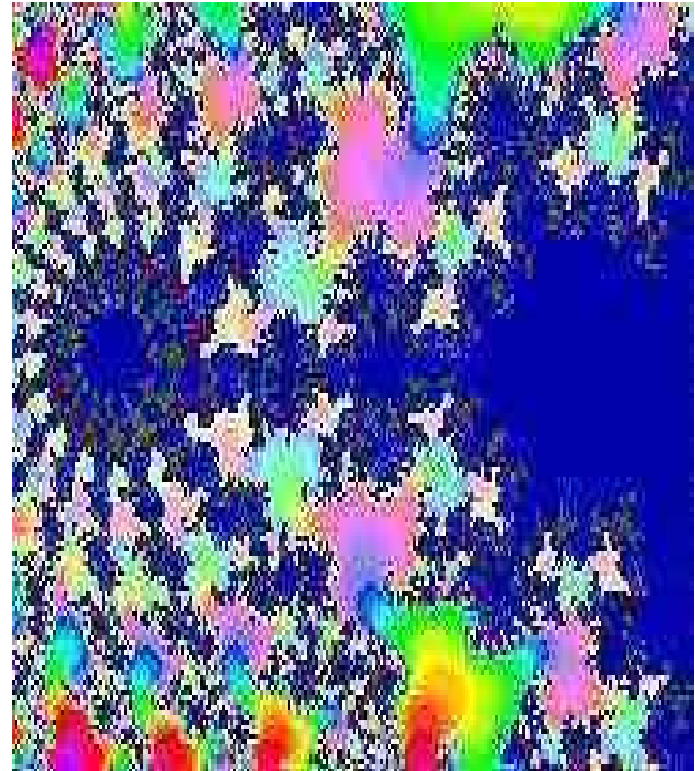
Complexity of Using New Services

How customers learn to use new services

- Terminal configurations
- Multiaccess to services
- Network settings

Complex charging models

- "What does it cost if I download this..."
- "Will my company pay for this ?"



Living with Legacy

Systems made for incumbent voice monopolies

- "Carved in Cobol..."
- Not documented
- "Huge database as battleground of competing software modules..."

Cost of

- Maintaining, changing and debugging
- Experts have retired

Huge business risks in replacements

- "It directors do not usually survive migration projects"



Do you agree with me?

