

# Smart Remote Management Services-SRMS OSS & Datacenter

# Did You Know It In 2017

LEADING NEW ICT

34%

of all technology spend will be  
**for Digital Transformation**

50%

Of applications running in public cloud in  
small and medium companies  
**will be repatriated**

6.5%

**of revenue growth will be driven by IT  
initiatives**



## Highlights multi-Business delivery Challenges



Introduce Smart Data-Center Solutions Agility



OSS - Unleashing Network Potentials



Cloud Network Synergy Business Benefits



OSS Digital Operation Transformation Module - MSUP



OSS Services Fulfilment Solution – WFMS



Successful Cases – Q&A

## Connectivity

Power **assets** utilization Regional  
Connectivity

**TBs** traffic from terminals for  
electricity

Getting Extra **Revenue**



### Large-Size Grid

- External regional grids coporation in connection
- Flexible and real-time control based on smart secondary system and owned network



### Big Data

- Massive smart terminals produce TB traffic per day
- The Data of production/management/ marketing need huge bandwidth of backbone

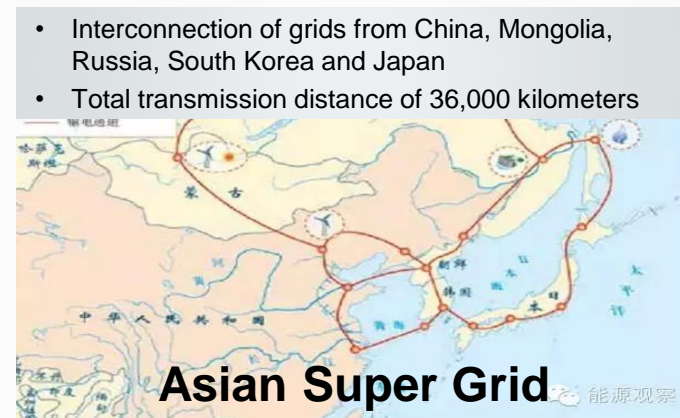
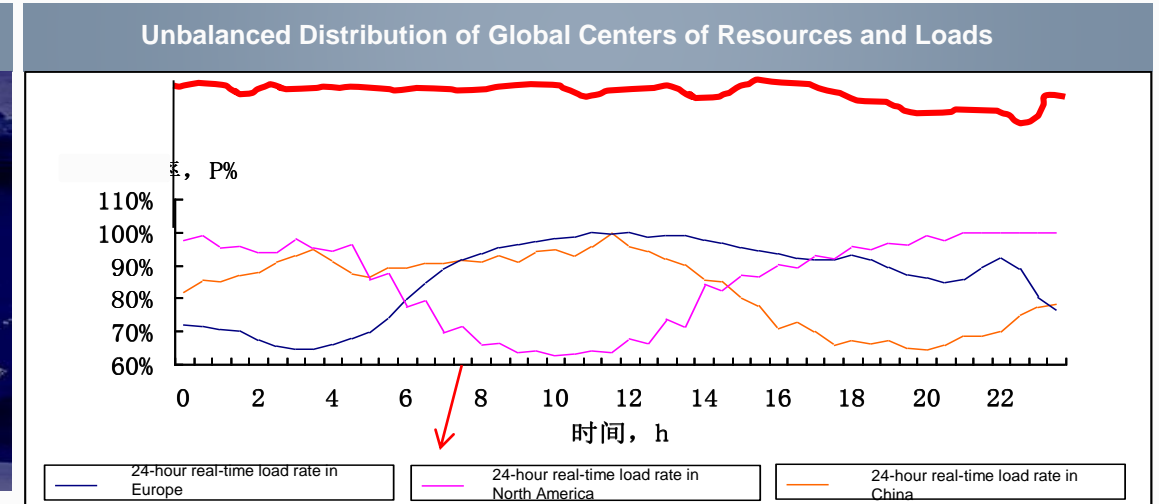


### Asset Value-added

- How to release the existing infrastructure potential economic value
- Seeking for the most suitable business operation model



# Large-size Grid and Ultra Long-haul Transmission Challenge



Grids Need to Be Connected Across the Borders of Countries and Regions to Balance Demands and Supplies

## Smart Grid



- Modern power production is developing towards smart grid;
- Smart grid drive the big capacity bandwidth requirement;
- Massive smart terminals produce TB traffic per day.

## Office Automation



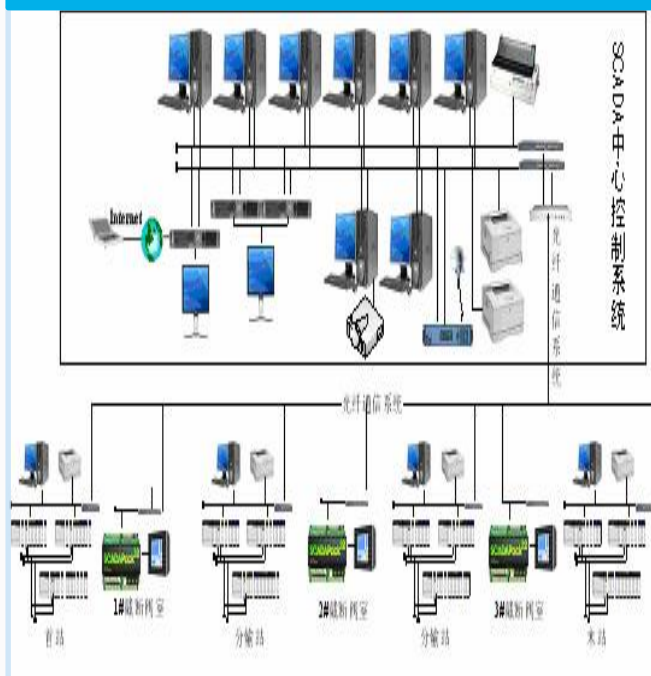
- Office automation is corresponding to smart grid and the bandwidth requirements is increased for several times or several decuple times;
- Part of the provincial and municipal companies of the backbone transmission network even carry the 100G traffic ;

## Bandwidth Trend



- The bandwidth requirement is always increased and never stopped according to the past experience;

## SCADA System



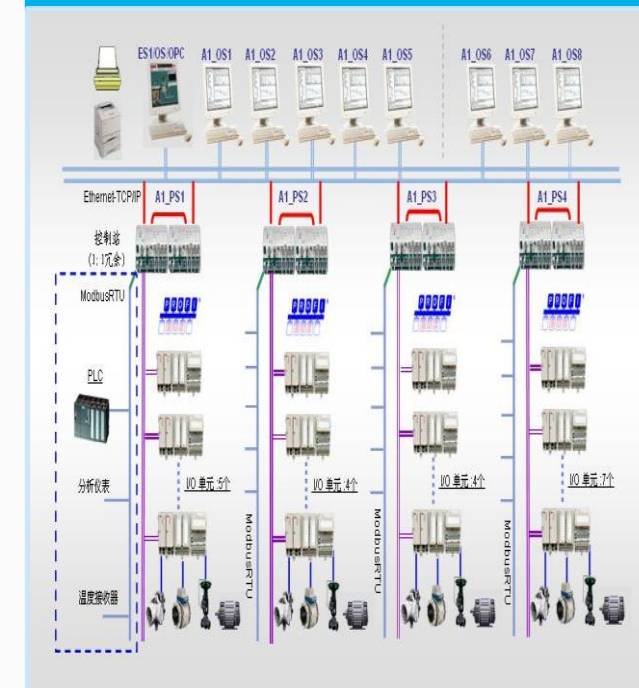
## Low productivity

- Traditional manual inspection featuring intensive labor and low productivity
- Production data uploaded manually causing possible record missing and low reliability
- Inefficient fault detection and handling, long downtime and low productivity

## Traditional management

- Independent production control systems that are not able to share data
- Insufficient and inaccurate data affecting decision making
- Low management level, high unit energy consumption

## DCS System



**Traditional Work Management Featuring Low Productivity and Non-interworking Data**





## Poor environment conditions

- Located in remote mountainous areas, Gobi and deserts elsewhere.
- Extremely low or high temperatures;
- Exposed to lightning or salt/acid fog corrosions;



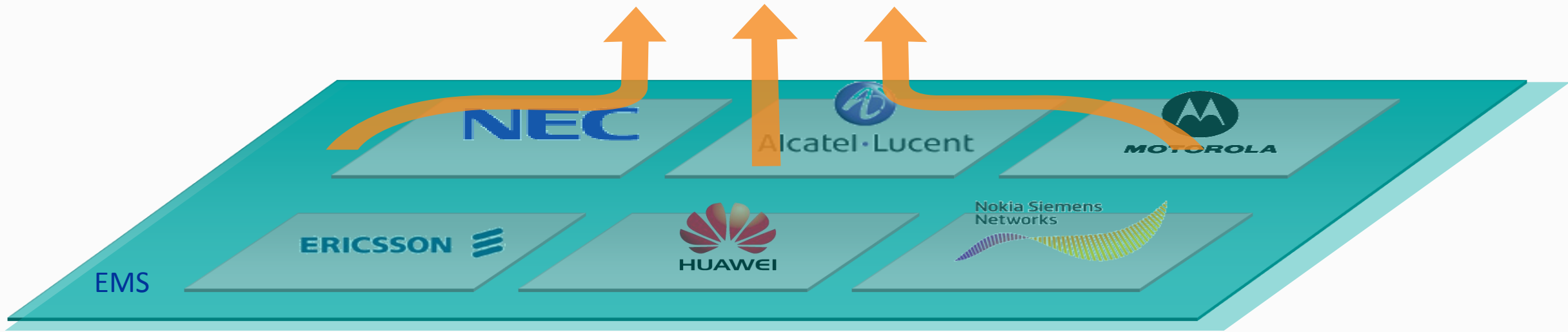
## Challenging production conditions

- Harsh production & living conditions;
- Poor traffic conditions causing long inspection cycles;
- Inefficient equipment management causing failed maintenance and extended downtimes;



# Lack of Unified Opx Maintenance Delivery Solution

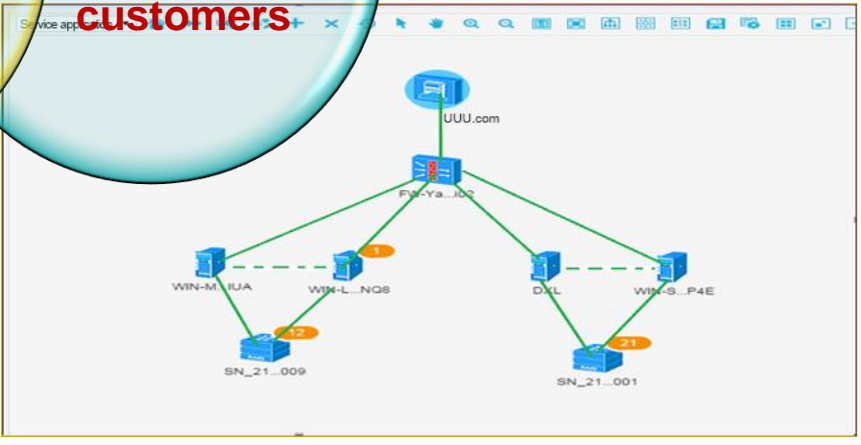
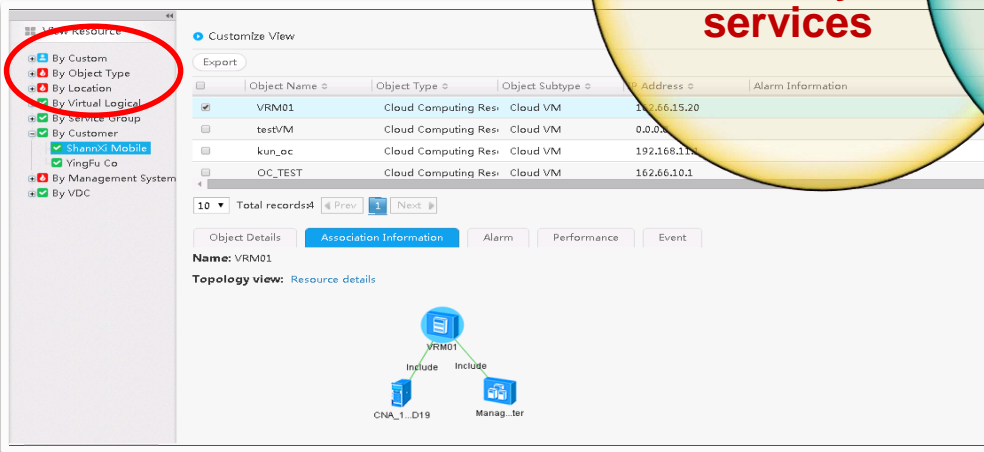
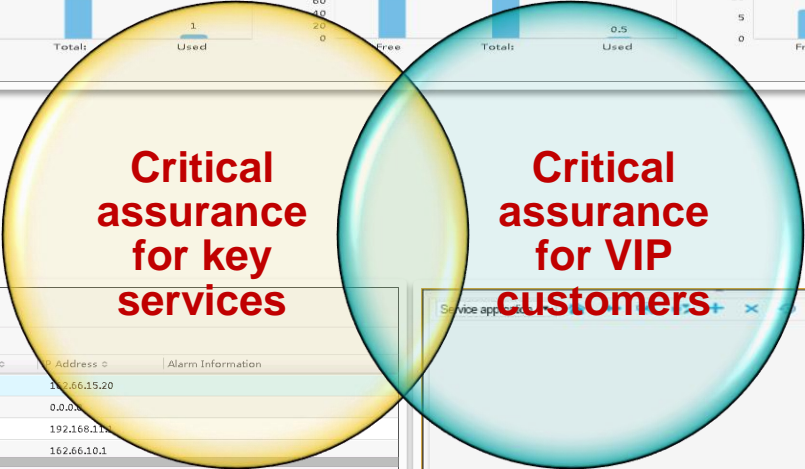
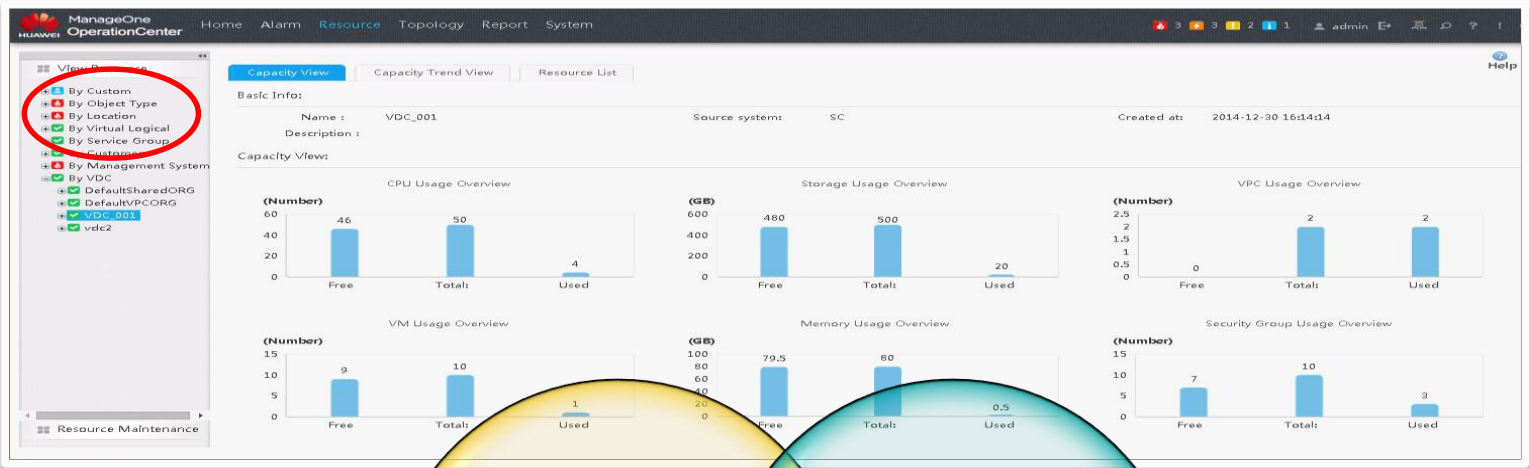
LEADING NEW ICT



- Many small-scale data centers which are distributed in different areas, and far away from each other, that will result in resource waste: and lack of resource utilization
- Many EMS solutions and different members at multi-technology providers/
- Resources cannot be shared, so there will be a waste.
- No professional unified management platform means low-efficiency and no knowledge sharing control.



# Critical Assurance for VIP customers and key services





**What Business Challenges were you encountered ?**





**Risk**



**Efficiency**



**Continuity**



**Challenges**



**Stability**



Highlights multi-Business delivery Challenges



**Introduce Smart Data-Center Solutions Agility**



OSS - Unleashing Network Potentials



Cloud Network Synergy Business Benefits



OSS Digital Operation Transformation Modules - MSUP



OSS Services Fulfilment Solution – WFMS



Successful Cases – Q& A





Highlights multi-Business delivery Challenges



Introduce Smart Data-Center Solutions Agility



**OSS - Unleashing Network Potentials**



Cloud Network Synergy Business Benefits



OSS Digital Operation Transformation Modules - MSUP



OSS Services Fulfilment Solution – WFMS

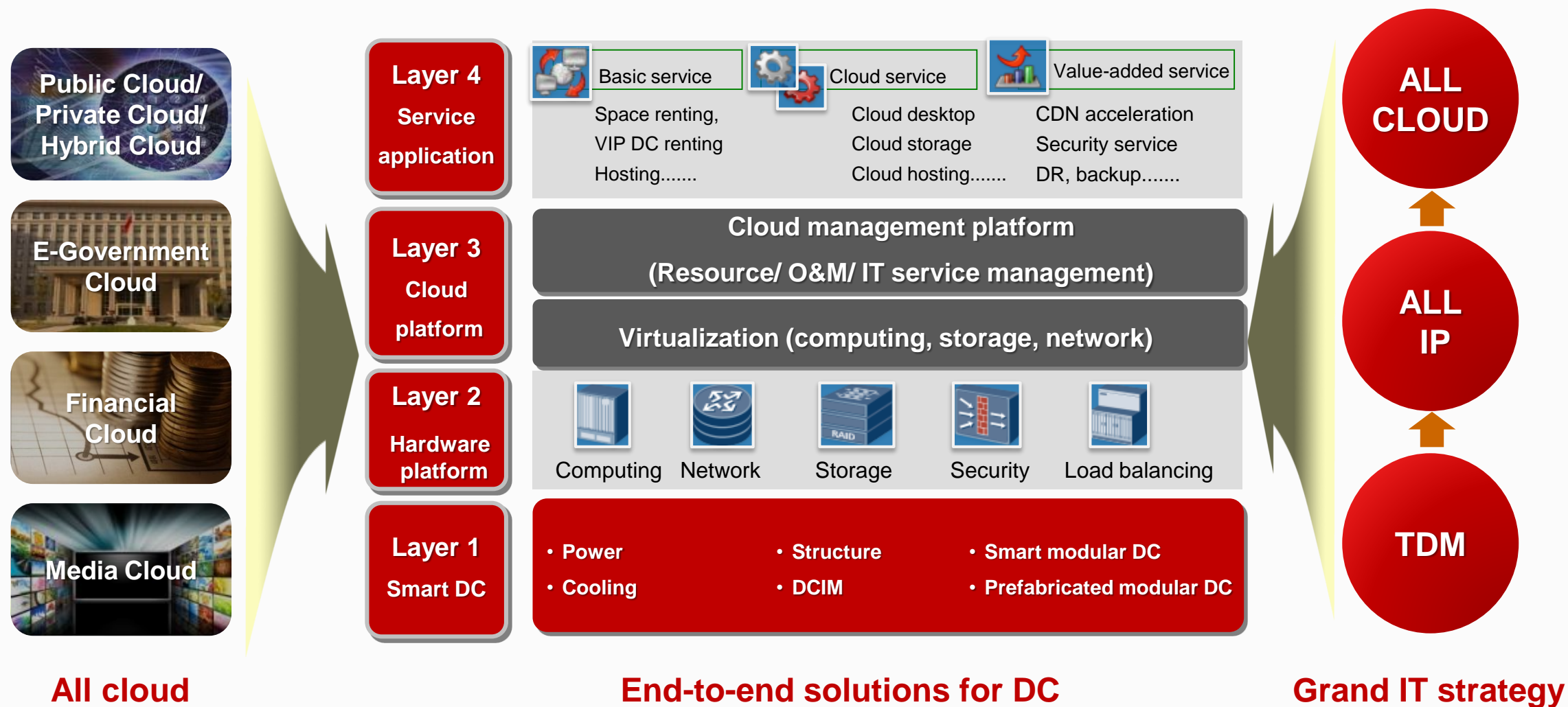


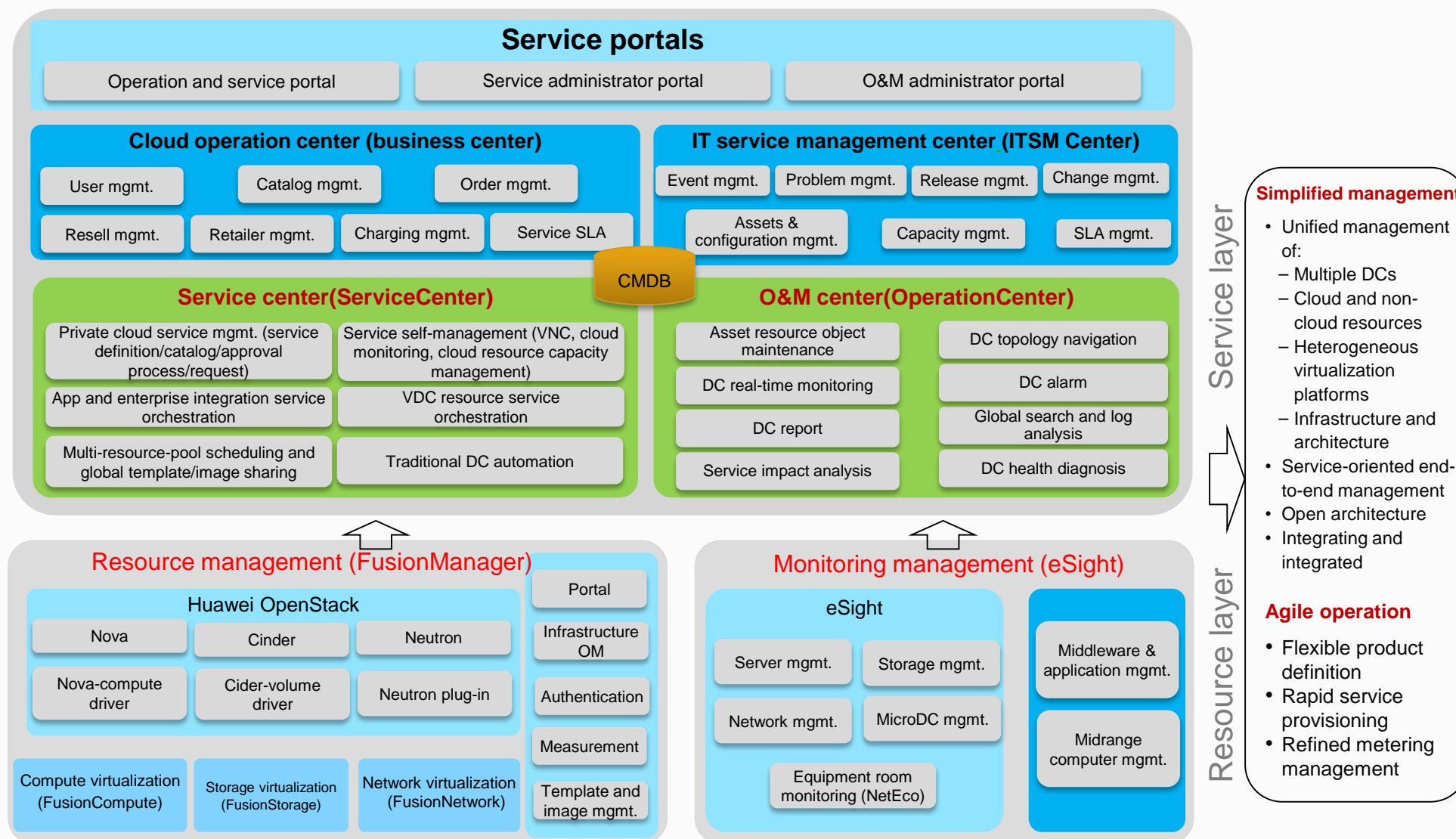
Successful Cases – Q&A



# All Cloud, Grand IT Strategy Covers DC E2E Solution

LEADING NEW ICT





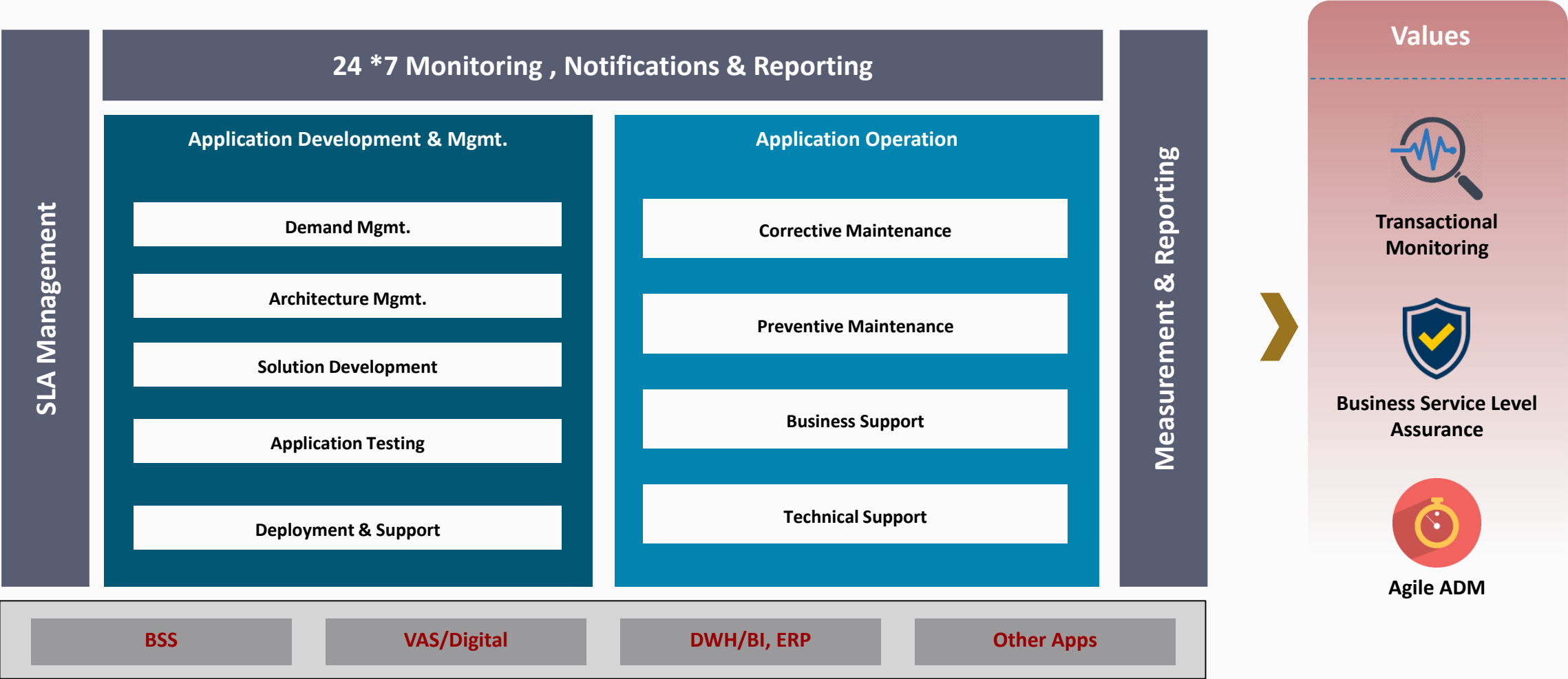
## Simplified management

- Unified management of:
  - Multiple DCs
  - Cloud and non-cloud resources
  - Heterogeneous virtualization platforms
  - Infrastructure and architecture
- Service-oriented end-to-end management
- Open architecture
- Integrating and integrated

## Agile operation

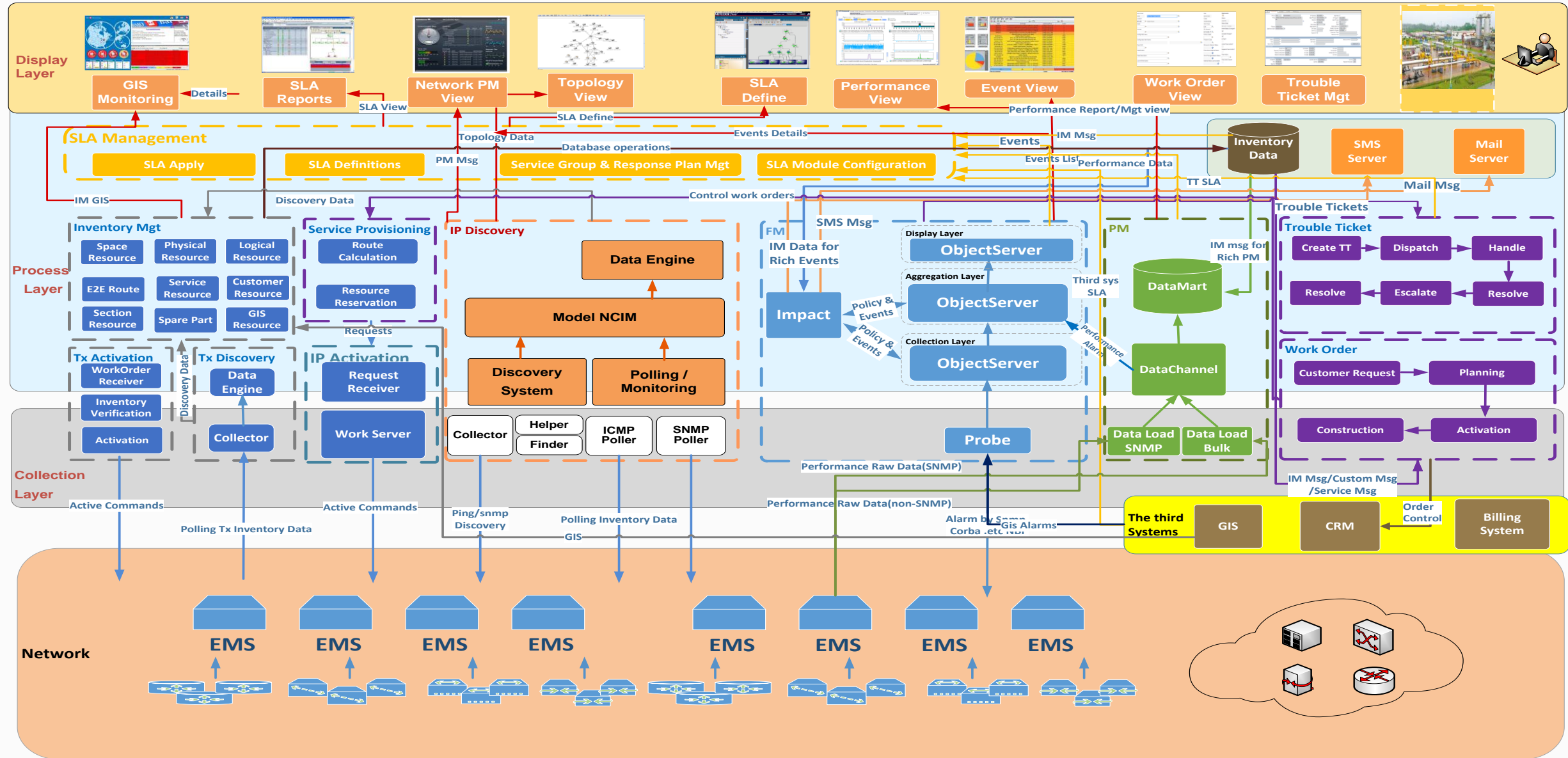
- Flexible product definition
- Rapid service provisioning
- Refined metering management

Implement cloud service automatic management and intelligent resource maintenance and build a highly efficient, intelligent DC management system



# Centralized OSS Deep Dive

LEADING NEW ICT







**How could we moving into Unified IT Model?**



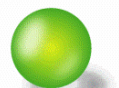
Highlights multi-Business delivery Challenges



Introduce Smart Data-Center Solutions Agility



OSS - Unleashing Network Potentials



**Cloud Network Synergy Business Benefits**



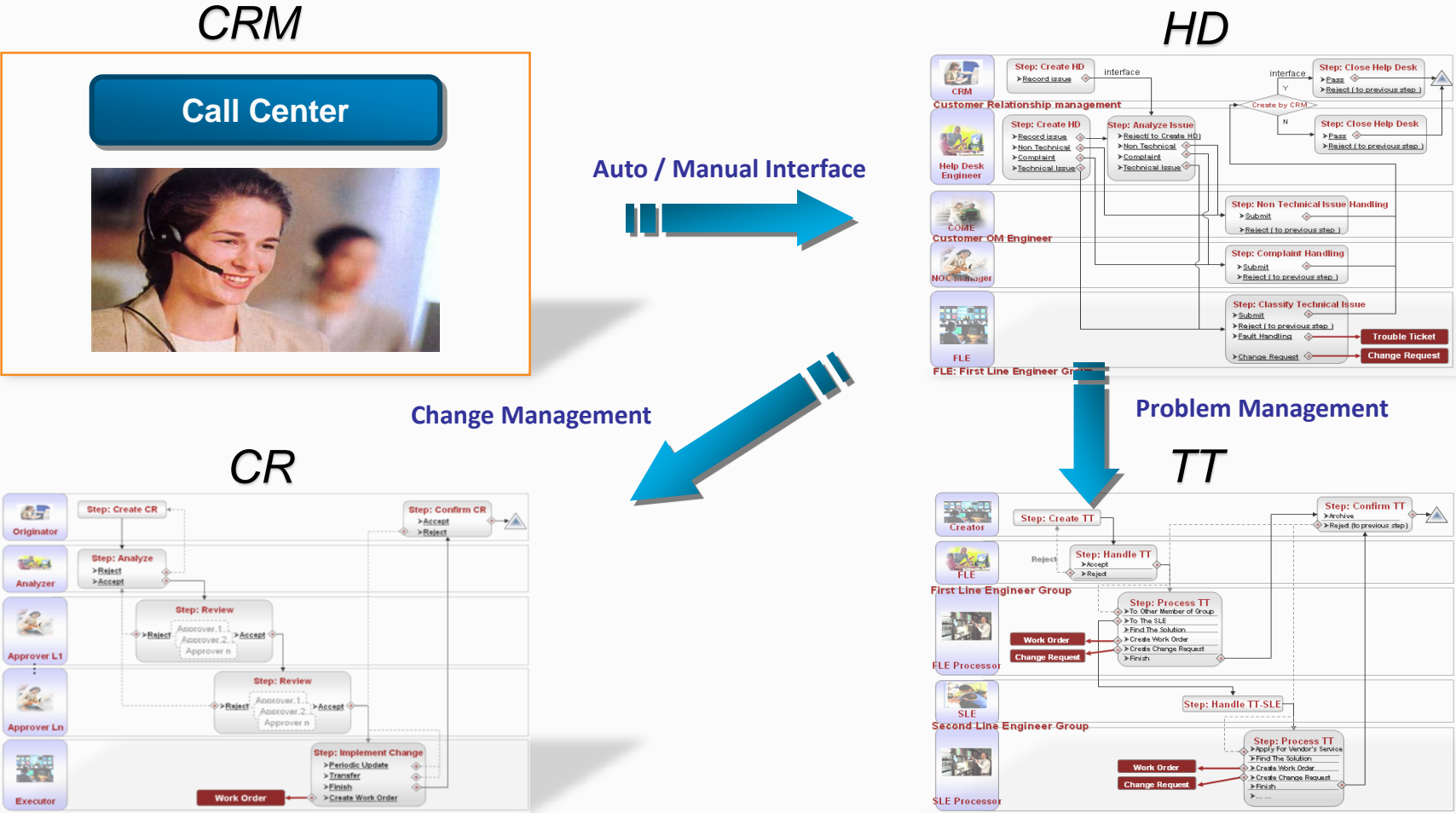
OSS Digital Operation Transformation Modules - MSUP



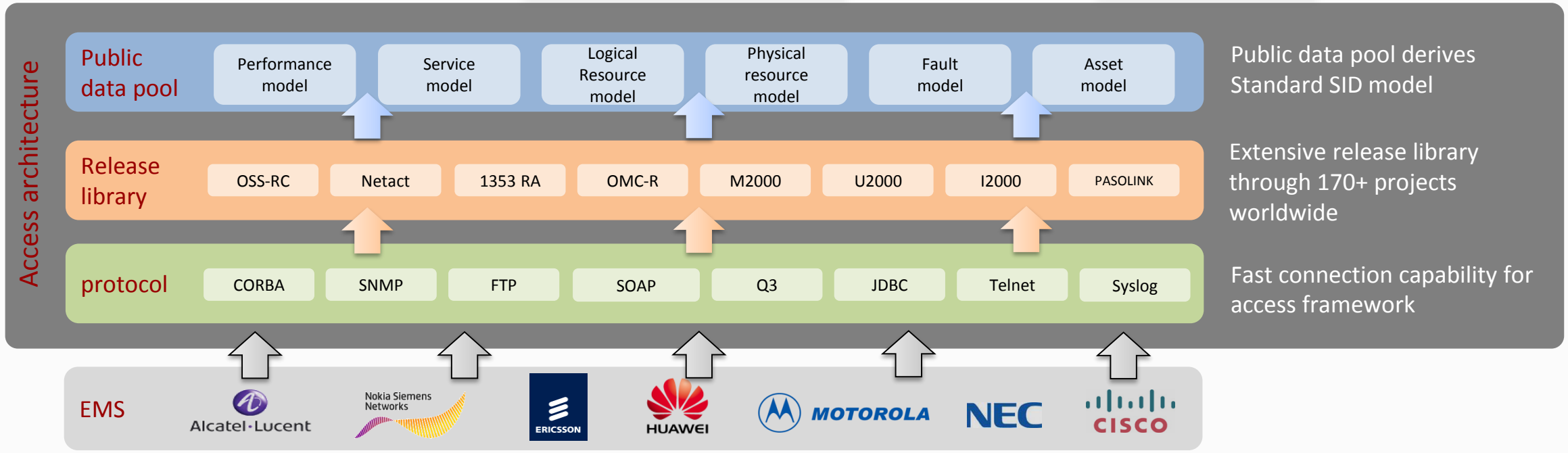
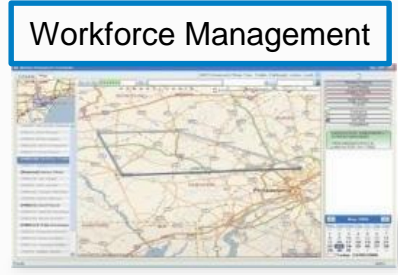
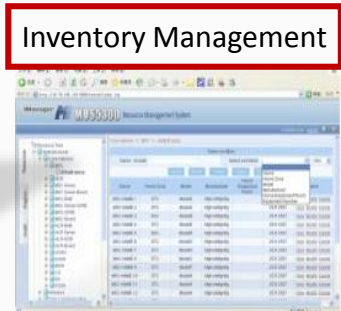
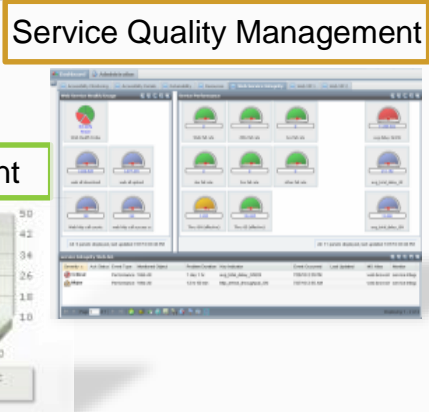
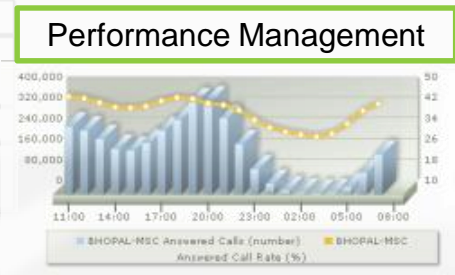
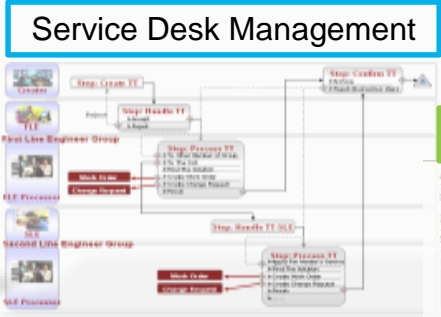
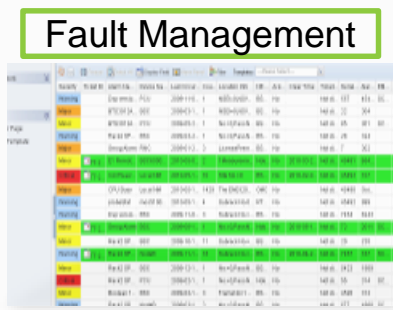
OSS Services Fulfilment Solution – WFMS



Successful Cases – Q&A

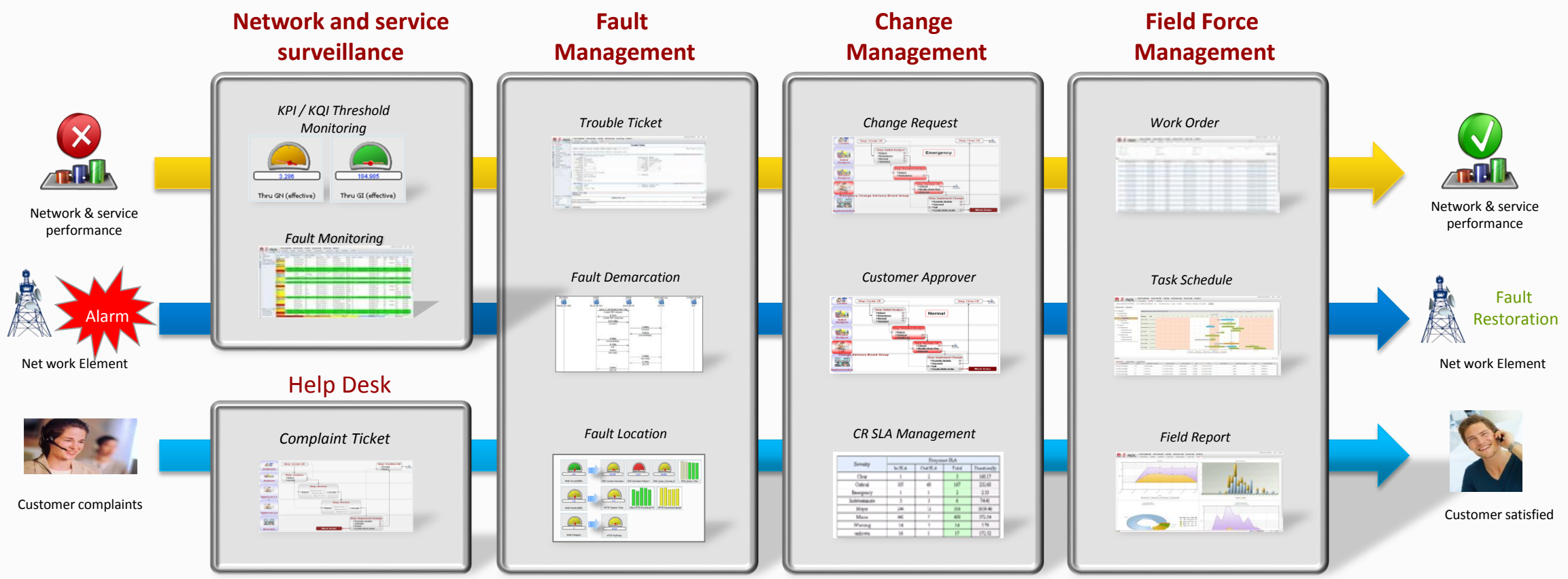


Help Desk Management provides a E2E workflow to manage and track all requests and complaints

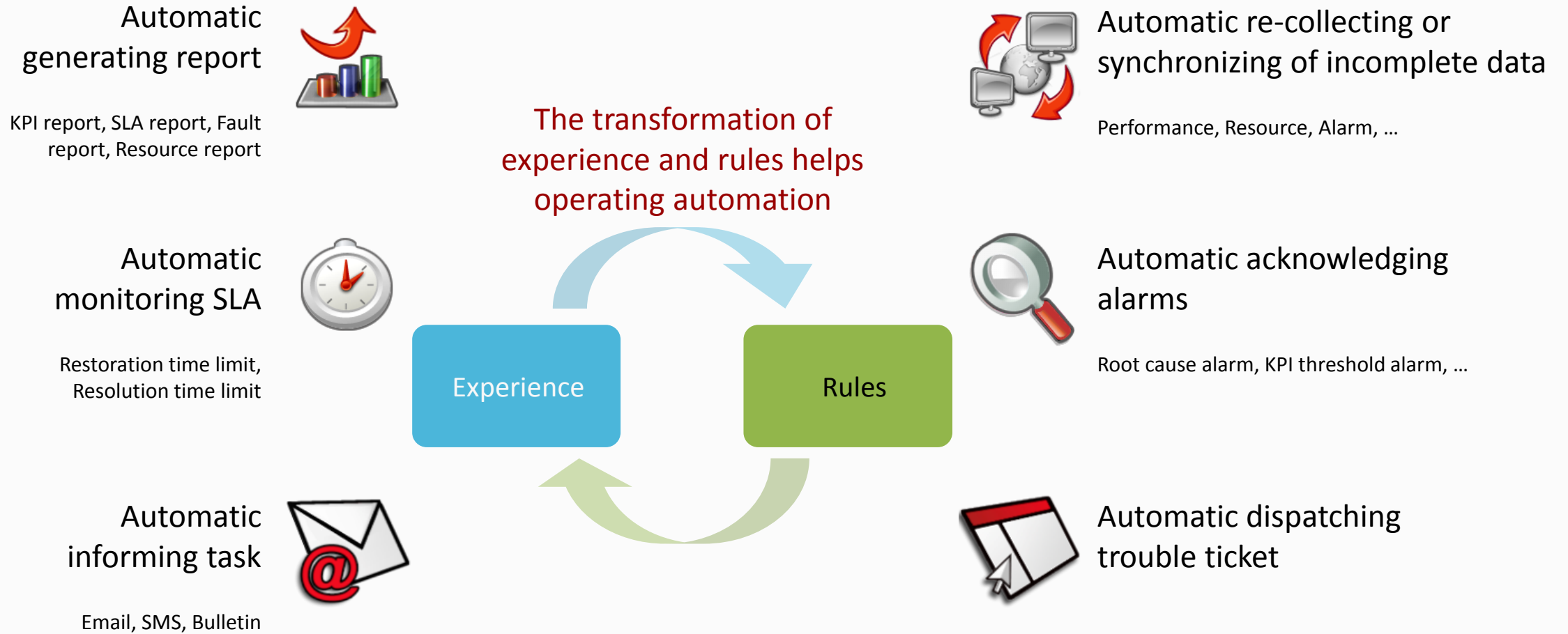


Flexible access architecture to adapt to various technologies and equipment





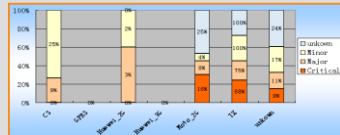
E2E network assurance capability to deliver better end user experience



## Real time & graphical network

### Operation visible

- Ticket status report

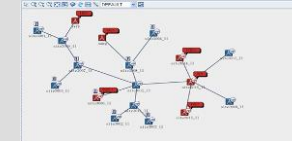


- SLA report



### Network visible

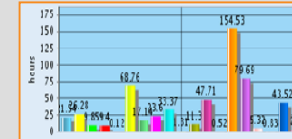
- Fault monitoring



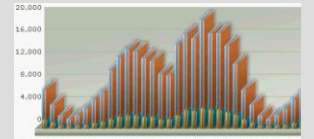
- KPI monitoring



- Fault report

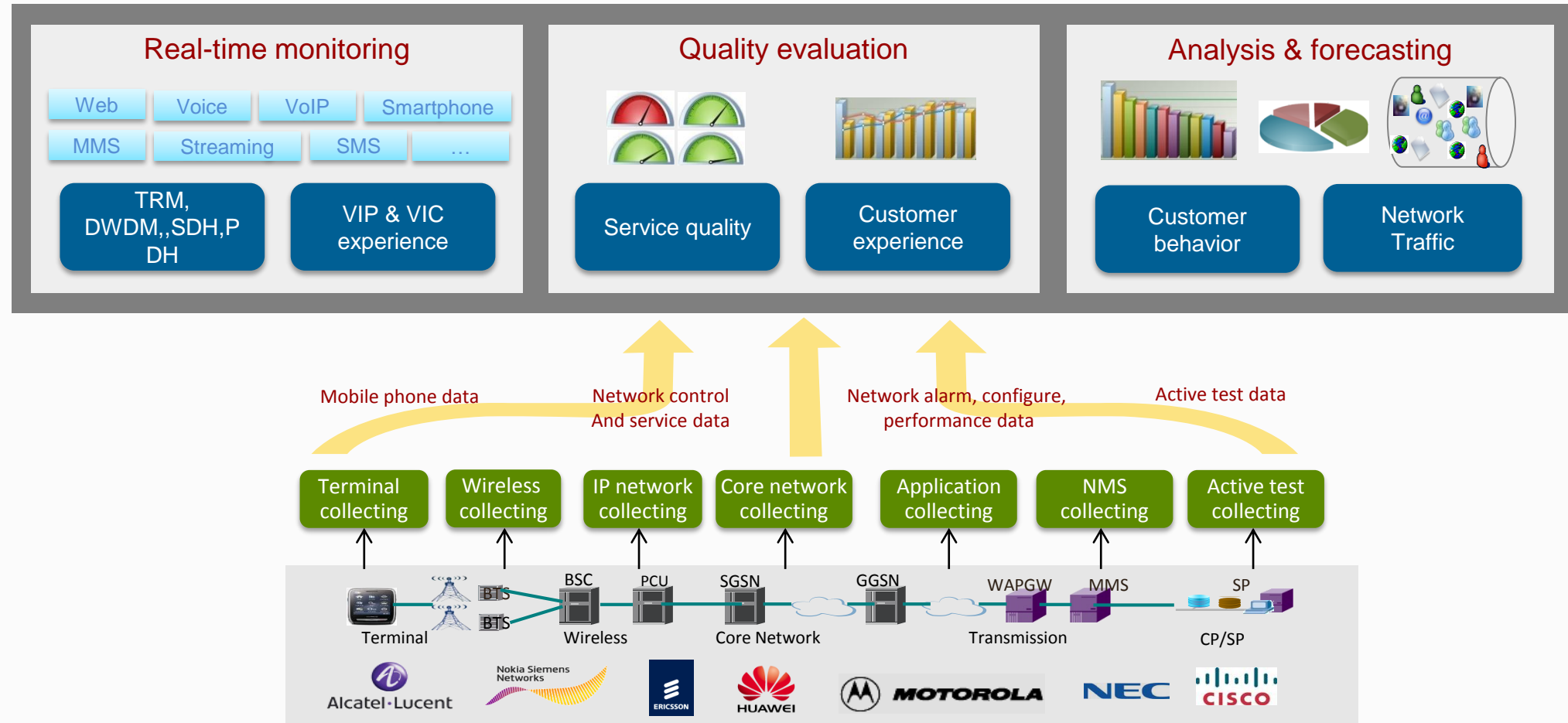


- KPI report



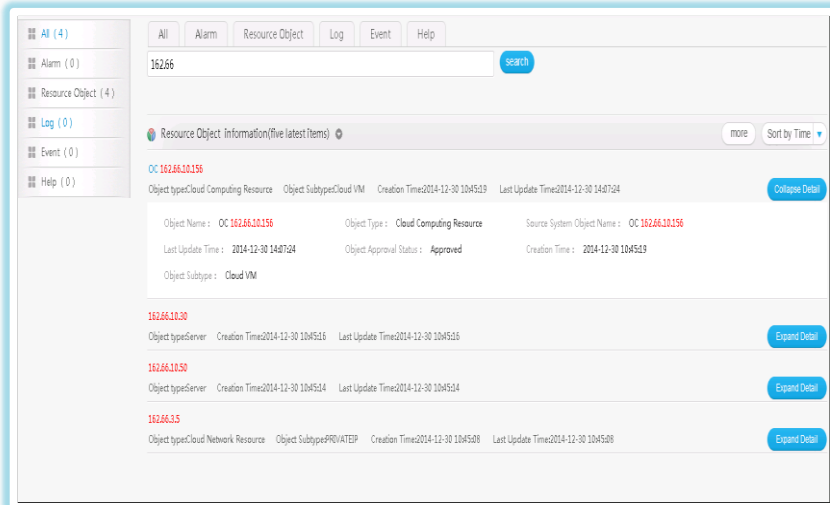
- Understand operation status timely and conveniently
- Find the defect of fault restoration efficiency

- Predictable network risk, proactive problem solving
- Resource use understanding, improve resource utilization, reduce network maintenance costs
- To ensure business continuity and improve network quality



**LEADING NEW ICT**

**a fault Receive reported by a customer.**



ManageOne

OperationCenter

[Home](#)
[Alarm](#)
[Resource](#)
[Topology](#)
[Report](#)
[System](#)

3

3

2

1

admin

+

-

?

!

⌂

View Alarm

Customize Filtering

By Object Type

By Location

By Virtual Logical

By Service Group

By Customer

By Management System

By VDC

Customize View

Disable Update

Export

Acknowledge

Unacknowledge

Clear

Submit Work Order

Mark as False Alarm

Cancel False Alarm

Change Severity

Shortcuts

Current active

▼

Search: Serial Number

▼

Enter a keyword

Search

Alarm Sev...	Alarm Name	Source Device	Monitor...	IP Address	Last Occurred At	Location...	Possible ...	Acknowl...	Work Ord...	Operation
Critical	Data collection exception	OC	OC		2014-12-10 14:09:44			Unacknowledged		
Critical	Data collection exception	OC	OC		2014-12-10 14:08:09			Unacknowledged		
Minor	Communication Between Fusion	FM	FM	192.68.32.144	2014-12-10 09:57:04	Communicative		Unacknowledged		
Critical	License File Is Not Loaded	FM	FM	192.68.32.144	2014-11-10 00:04:09			Unacknowledged		
Major	NTP Clock Source Is Not Config	FM	FM	192.68.32.144	2014-11-29 16:05:02	-		Unacknowledged		
Major	Connection Between FusionMar	FM	FM	192.68.32.144	2014-11-29 18:01:08			Unacknowledged		
Minor	VM Memory Usage Exceeds Bi	FM	FM	192.68.32.144	2014-11-21 09:27:60			Unacknowledged		
Warning	Network Redundancy Not Config	FM	FM	192.68.32.144	2014-10-14 20:05:00			Unacknowledged		
Major	NTP Clock Source Is Not Config	FM	FM	192.68.32.144	2014-10-14 15:05:03	-		Unacknowledged		

10

Total records

Prev

Next

Alarm Details

Associated Object Alarm

Alarm Object Details

Basic Info:

Alarm Severity: Critical

Alarm Name: Data collection except...

Source Device: OC

Monitoring Systems: OC

IP Address

Last Occurred At: 2014-12-10 14:09:44

Location Information

Possible Causes

Acknowledgement Status

Work Order No.

Unacknowledged

Handling Record:

Remark:

Handling Record:

Cloud VM-Statistic KPI-Disk I/O Write Rate (KB/s)

KB/s

2013-12-31 15:00:00 2013-12-31 15:05:00 2013-12-31 15:10:00 2013-12-31 15:15:00 2013-12-31 15:20:00 2013-12-31 15:25:00 2013-12-31 15:30:00 2013-12-31 15:35:00 2013-12-31 15:40:00 2013-12-31 15:45:00 2013-12-31 15:50:00 2013-12-31 15:55:00 2013-12-31 16:00:00

windows 2008 111 VRM02 windows 2008

windows 2008 VRM01

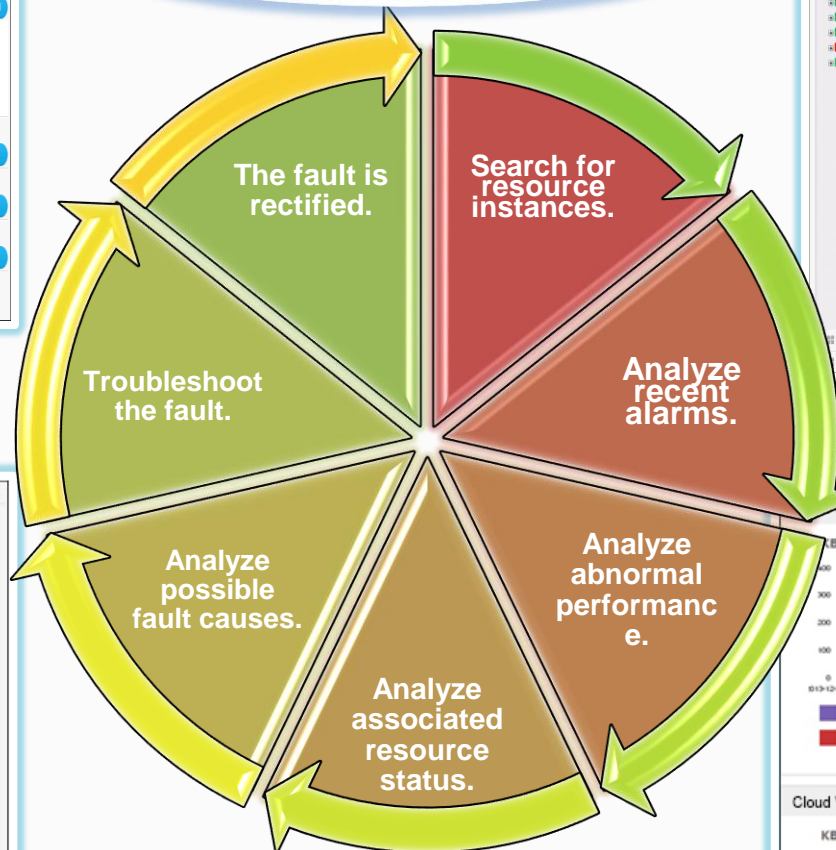
Cloud VM-Statistic KPI-Disk I/O Read Rate (KB/s)

KB/s

2013-12-31 15:00:00 2013-12-31 15:05:00 2013-12-31 15:10:00 2013-12-31 15:15:00 2013-12-31 15:20:00 2013-12-31 15:25:00 2013-12-31 15:30:00 2013-12-31 15:35:00 2013-12-31 15:40:00 2013-12-31 15:45:00 2013-12-31 15:50:00 2013-12-31 15:55:00 2013-12-31 16:00:00

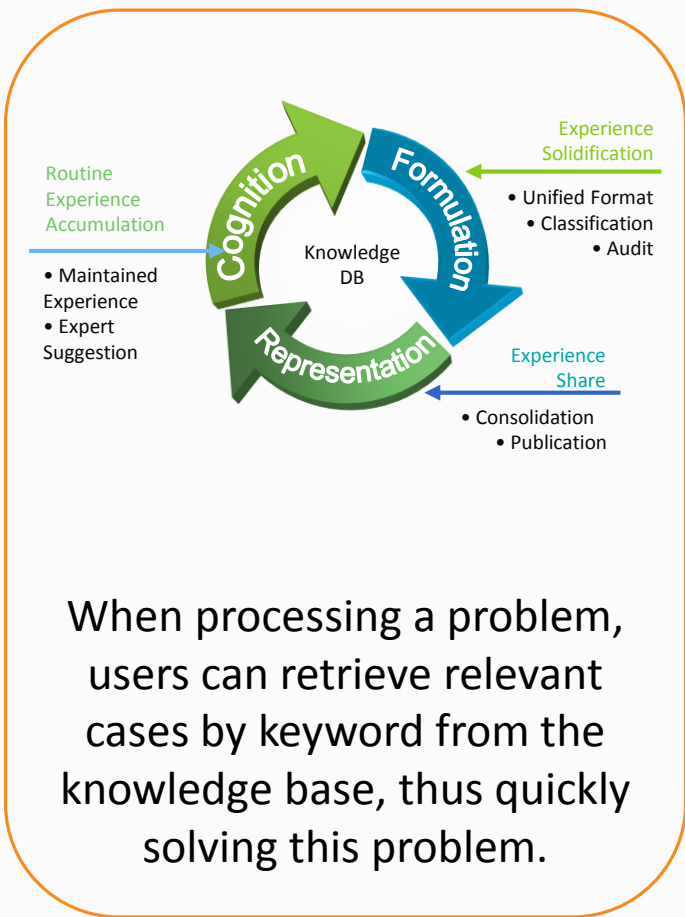
windows 2008 111 VRM02 windows 2008

windows 2008 VRM01

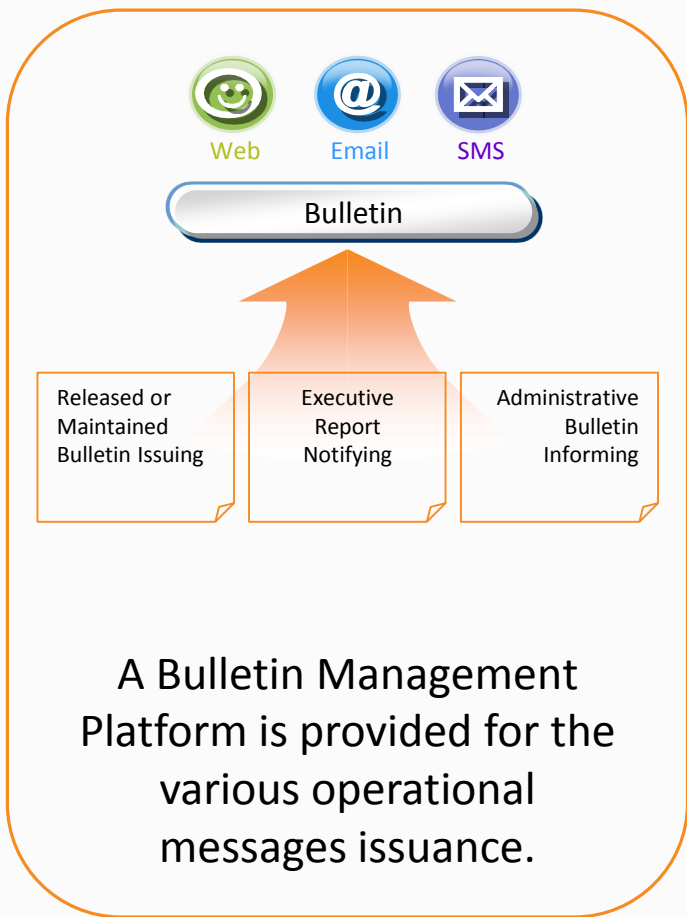




## Knowledge Management



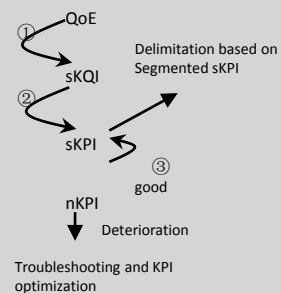
## Bulletin Management



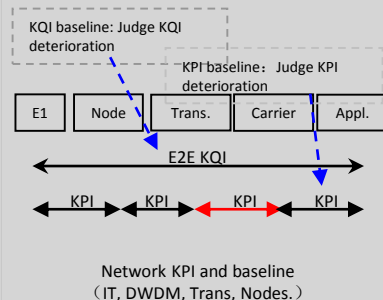
## Top-Down approach

Quick drill down capability for network and service quality degradation

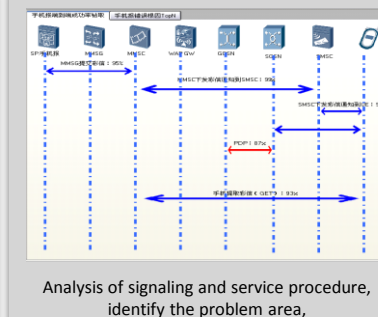
### Step 1: problem identification



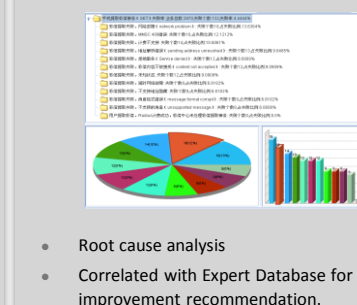
### Step 2: E2E KQI and KPI threshold



### Step 3: KPI decomposing and drilling down

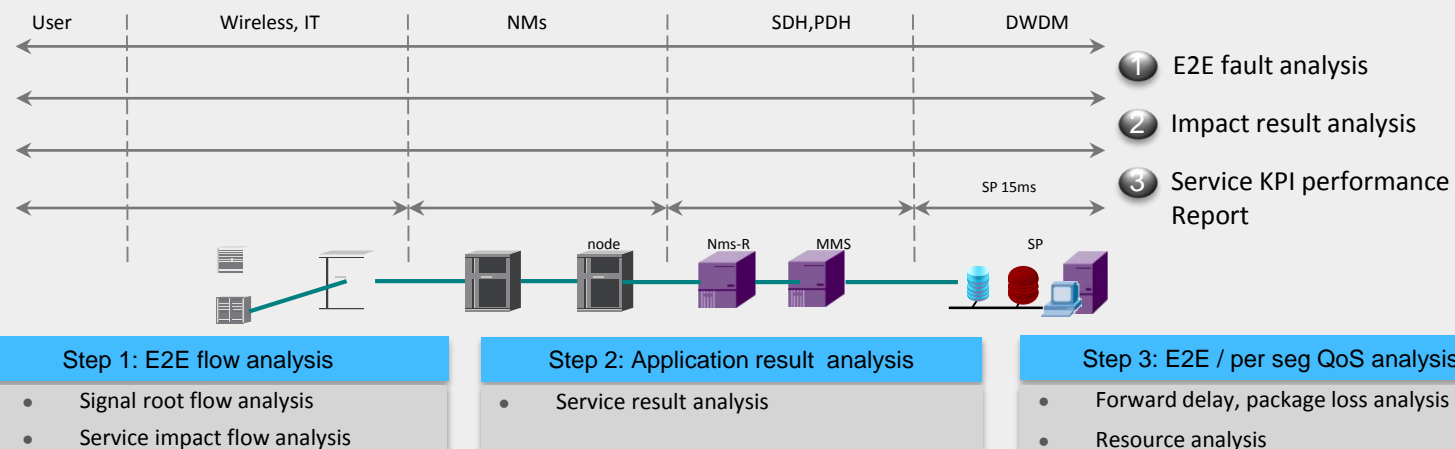


### Step 4: Cause & improvement recommendation



## Fault Trace Approach

Capability to divide responsibility of failures between network segments, NMS's



Effective & efficient root-cause-troubleshooting across complex network structure

## Manual, Monthly, Inaccurate

Front Office records Actual Cause, Reason, Responsibility in the trouble ticket, then makes availability report manually.



Step3 Process IT The task was submitted by guoyang on 2009-06-24 18:03:35

Processor guoyang Processing Time 2009-06-24 18:03:35  
Processor Dept. ROOT-Front Office-2G/3G RAN/Huawei\_3G Mobile Phone 0541635103  
Troubleshooting Find the Solution

\* Operation Mode ☐ Update ☐ Record Time ☒ Finish  
\* Fault Clear Time 2009-06-24 17:54:34 Outage Time(H:M:MM) 0:1  
Fault Recolved Time

\* Actual Cause Software Sub Cause select...

\* Processed By Case ☐ Yes ☒ No  
\* Solution Auto Clear  
\* Description OK Now  
Attachment Add Attachment

Work Order Create "Work Order" Subprocess  
Change Request Create "Change Request" Subprocess

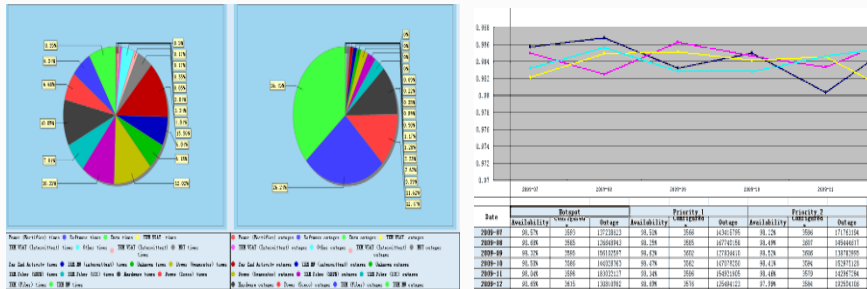
Child Ticket OrderID	Title	Status	Assign to	Start Time	Finish Time	Operation
----------------------	-------	--------	-----------	------------	-------------	-----------

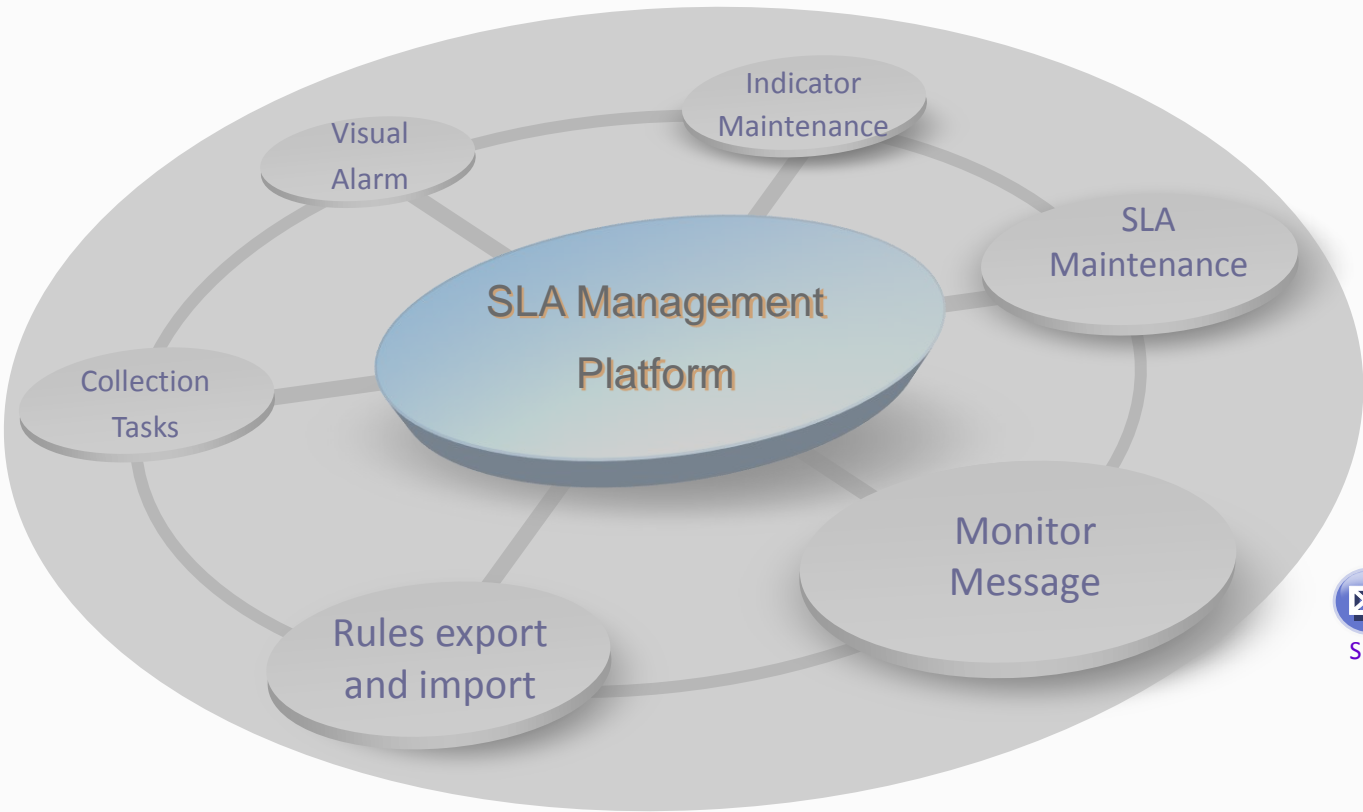
VS.

## Automatic, Real time, Accurate

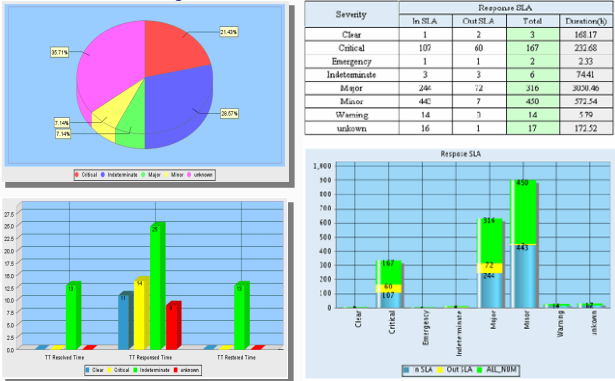


Shift Leader/ Front Office Manager gets the report from MOS5100 anytime.





SLA Report



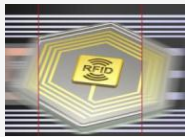
Threshold Reminding



## Asset digitalized



Manage based on



electronic label

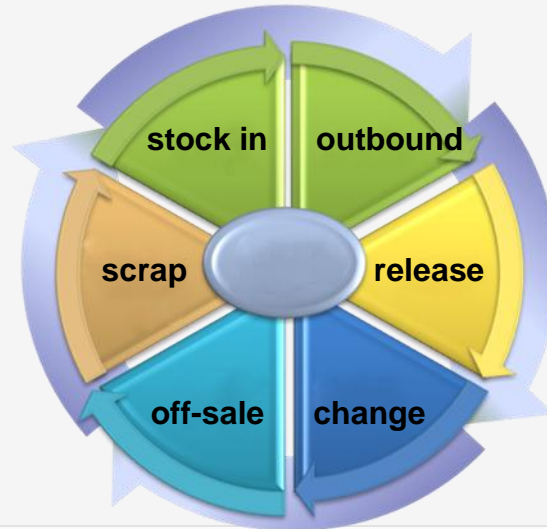


scanner



Cooling

## Asset lifespan



## Asset analysis

**ASSET REPORT**  
Execution Time: 2013-05-13 16:34:28

**Asset Information**

Management Domain Name	Device Name	Device Model	Serial Number	Manufac	Date Of Use	Row	Column	IP Address	Port	Device Address
XIAN	Camera	HKVISION_DS_22222222	HAIRAN			12	AK	2.2.2.2	0	
XIAN	Grey Stone	RH811AC05D	Grey Stone			10	AH	10.144.2	9001	14
XIAN	TycoSun-A880222	A8802	TycoSun			08	AR	8.5.5.5	161	
XIAN	TycoSun-A8808 (真实设备)	A8802	TycoSun			21	AY	10.144.3	161	
XIAN	UTC-GST200-2	GST200-2	UTC			04	AC	2.2.2.4	3	2
XIAN	ZD120KVA	ZD120KVA	Delta			12	AB	10.144.2	9001	2
Container / Cooling	Camera	HKVISION_DS_1234567	HAIRAN			02	AC	225.222.	0	
Container / Cooling	Chiller-Shenling	LSQF100GMX4	Shenling			01	AJ	3.3.3.66	3	4
Container / Cooling	TycoSun-A8802	A8802	TycoSun			02	AC	2.5.23.2	161	
Container / Power	Riello-200kVA	200kVA	HUAWE			02	AB	2.5.33.5	5	
Container / Power	Riello-300kVA	300kVA	HUAWE			02	AD	5.2.2.2	2333	
Container / Power	UPS400kVA	RIELLO	HUAWE			02	AF	2.3.2.2	222	

### Online and offline Asset Inventory

- Artificial Asset Inventory
- Real-time online asset management reading and updating

### Device information base

- Full-side asset management (IT, infrastructure)
- Customized device model

### Asset attribute and status management

- Attribute: parameter, maintenance, information change, manufacturer, model, location, etc.
- Connection: power, network, port occupation





Highlights multi-Business delivery Challenges



Introduce Smart Data-Center Solutions Agility



OSS - Unleashing Network Potentials



Cloud Network Synergy Business Benefits



**OSS Digital Operation Transformation Modules - MSUP**



OSS Services Fulfilment Solution – WFMS



Successful Cases – Q&A

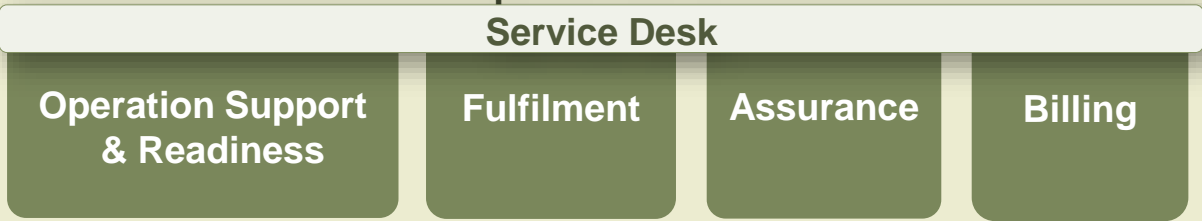
## Process Framework

Strategy, Infrastructure, Product



Operations

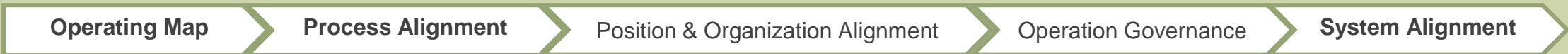
Service Desk



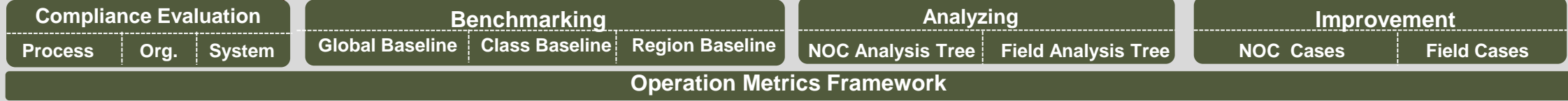
Enterprise Management



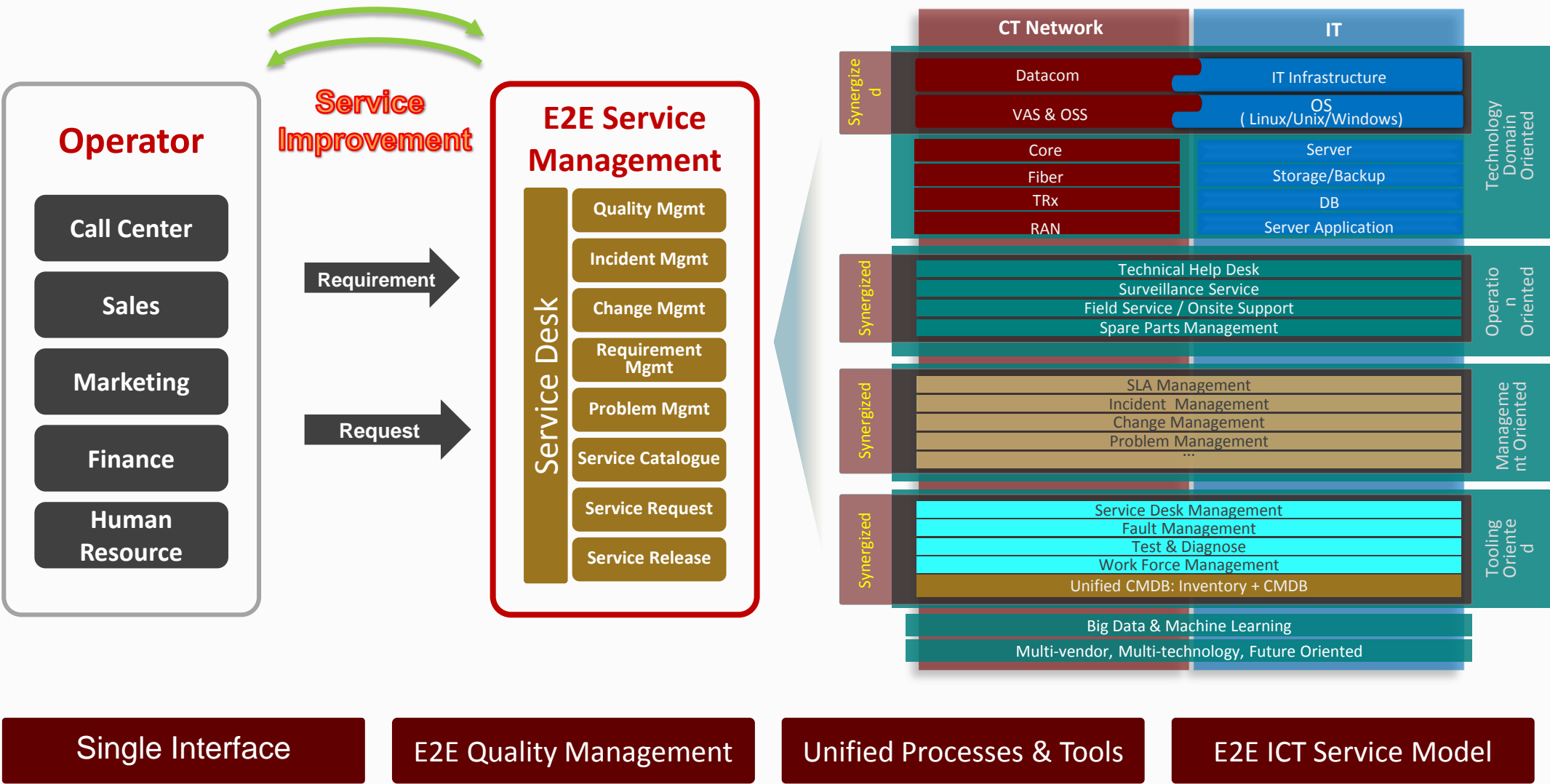
## Operation Model

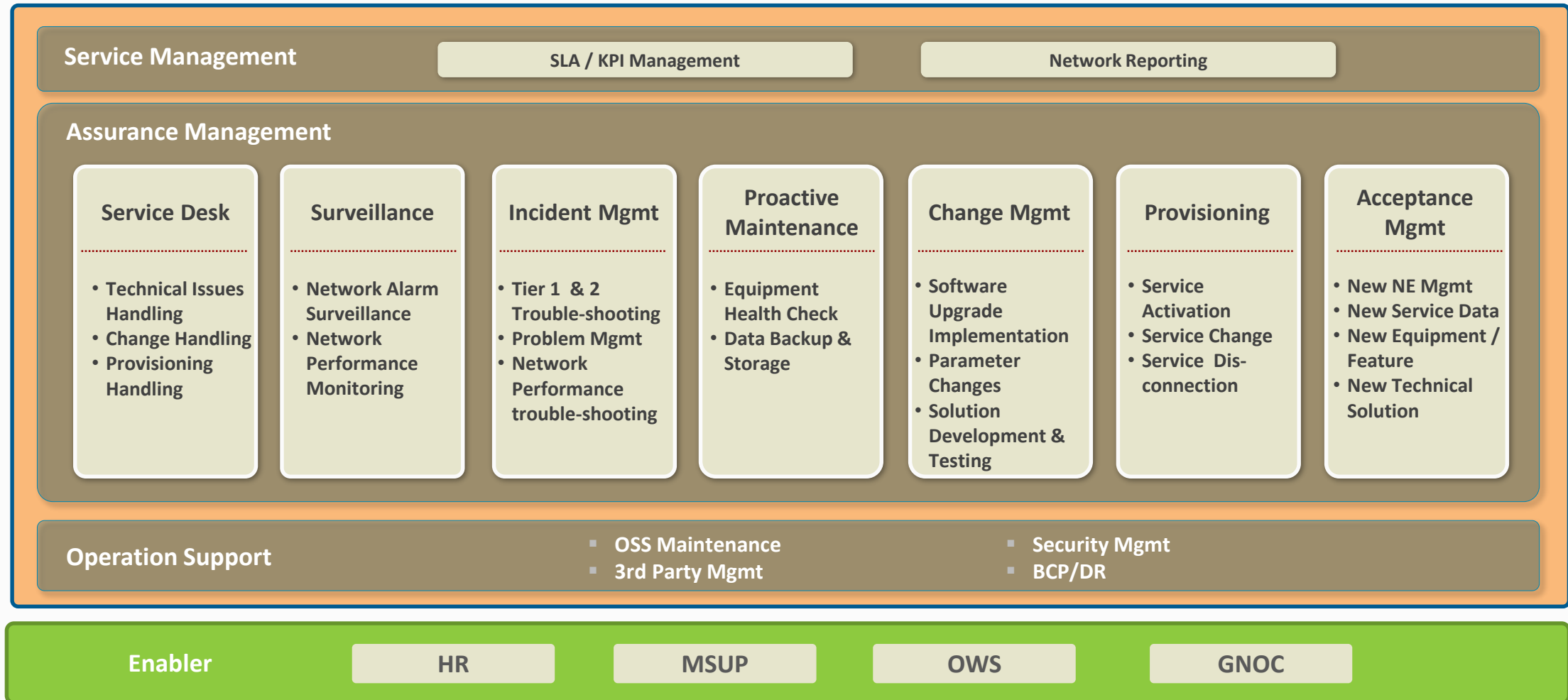


## MAI (Measure, Analyze, Improve)

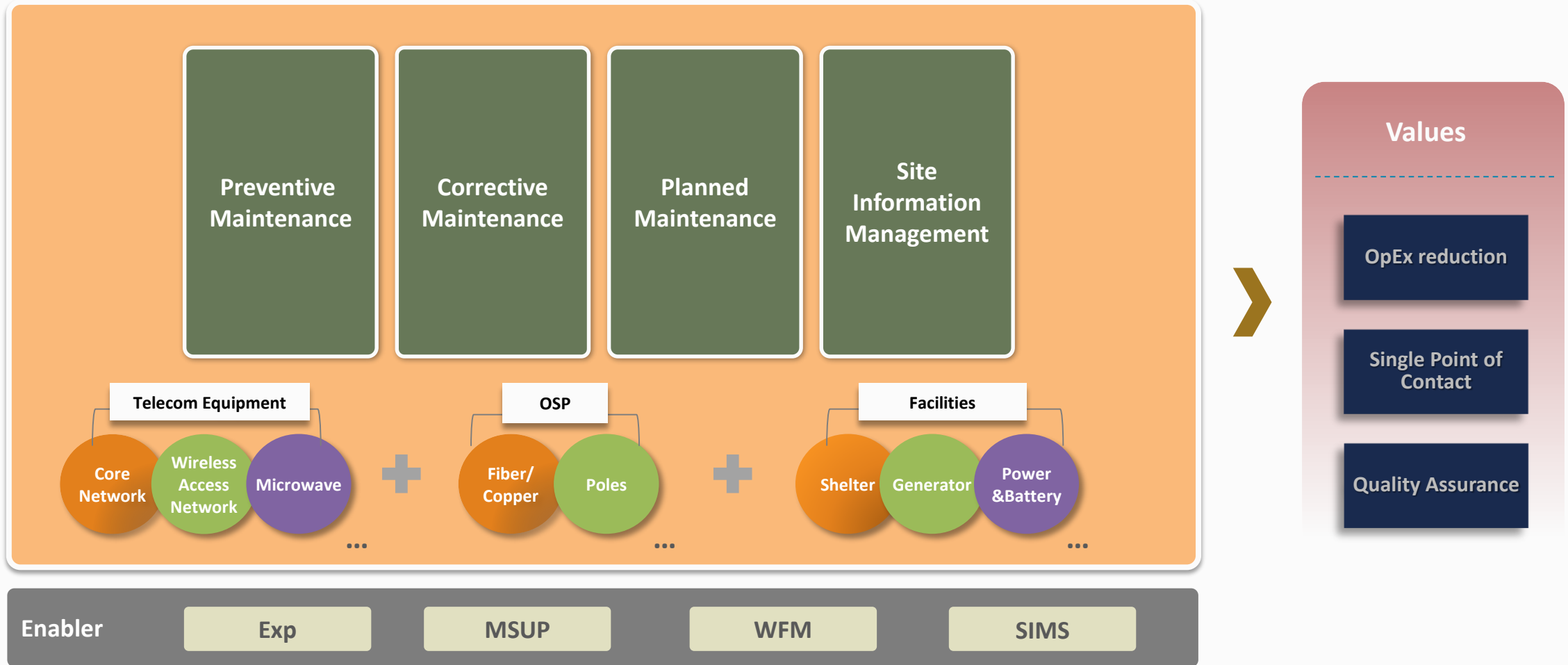


eTOM certified and ITIL, TL9000, ISO 20000/27001 compliant





Operational efficiency through standardized process and off shore delivery







Highlights multi-Business delivery Challenges



Introduce Smart Data-Center Solutions Agility



OSS - Unleashing Network Potentials



Cloud Network Synergy Business Benefits



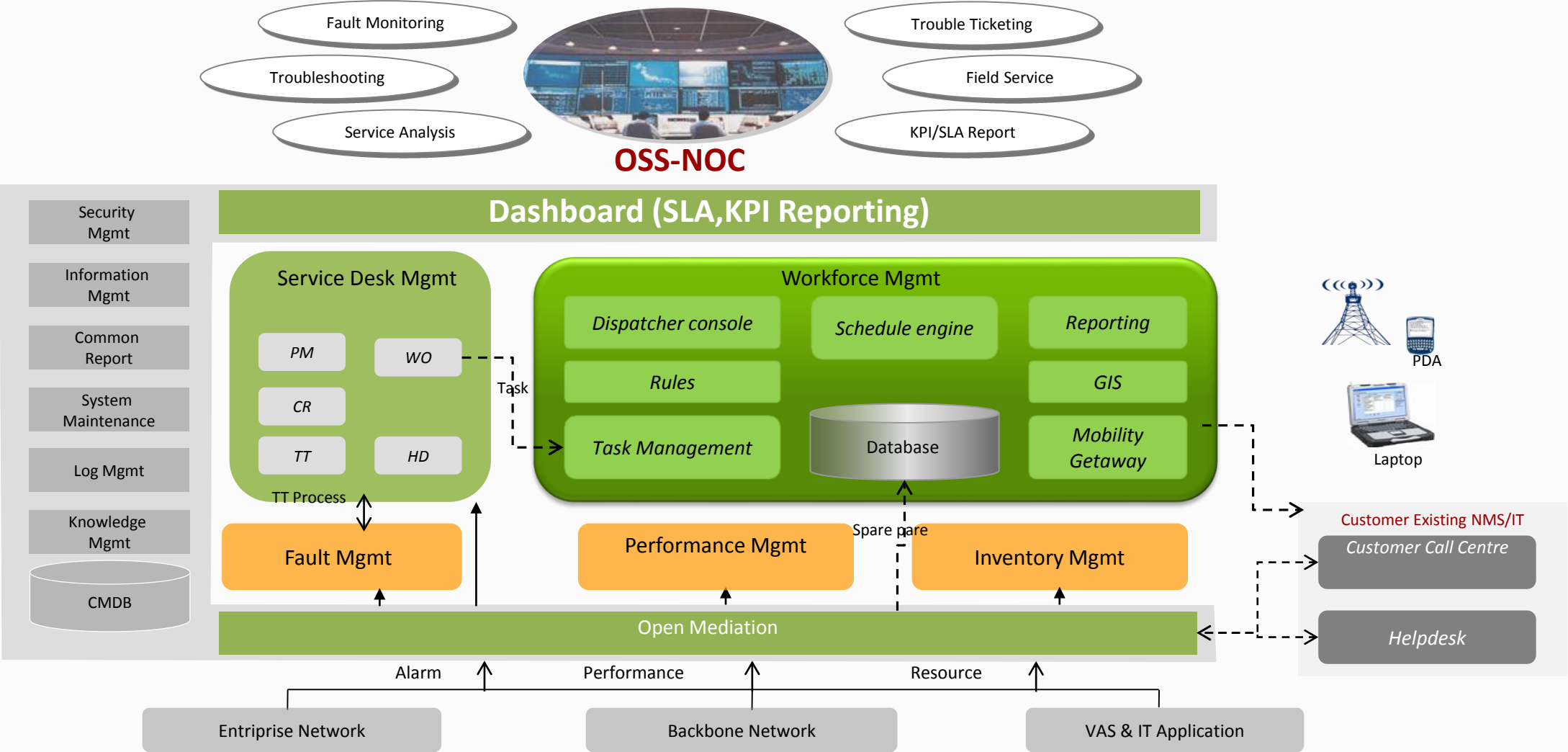
OSS Digital Operation Transformation Modules - MSUP

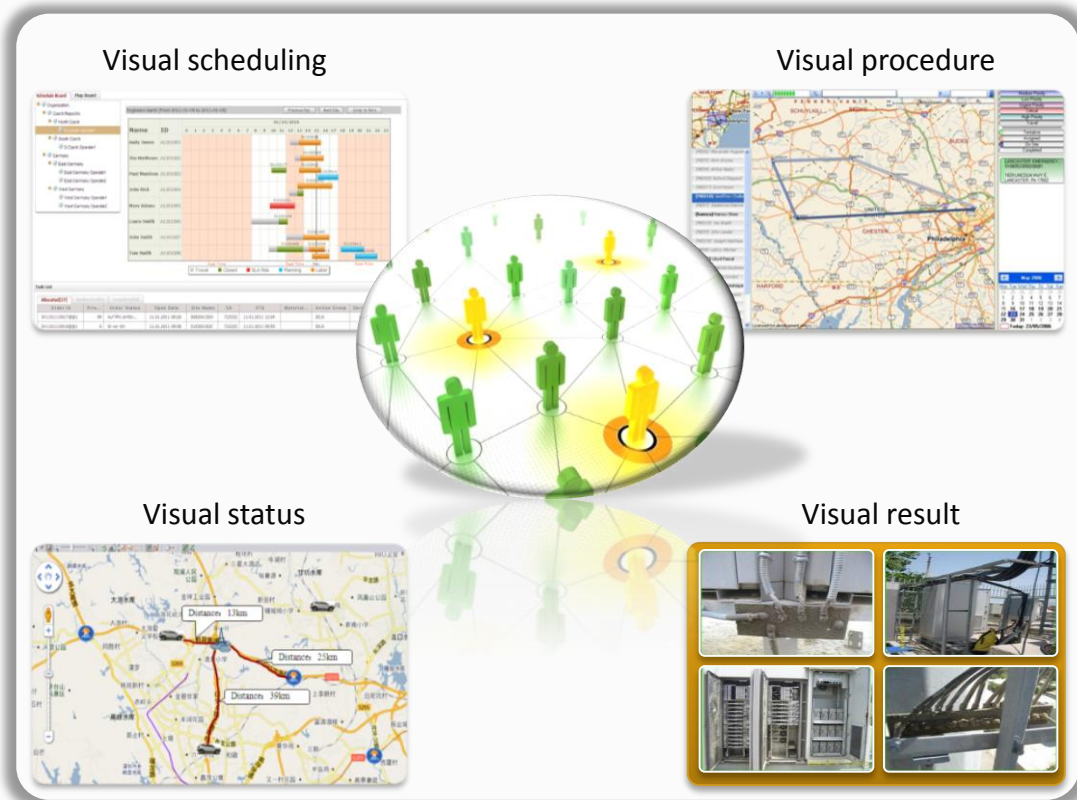


**OSS Services Fulfilment Solution – WFMS**



Successful Cases – Q& A



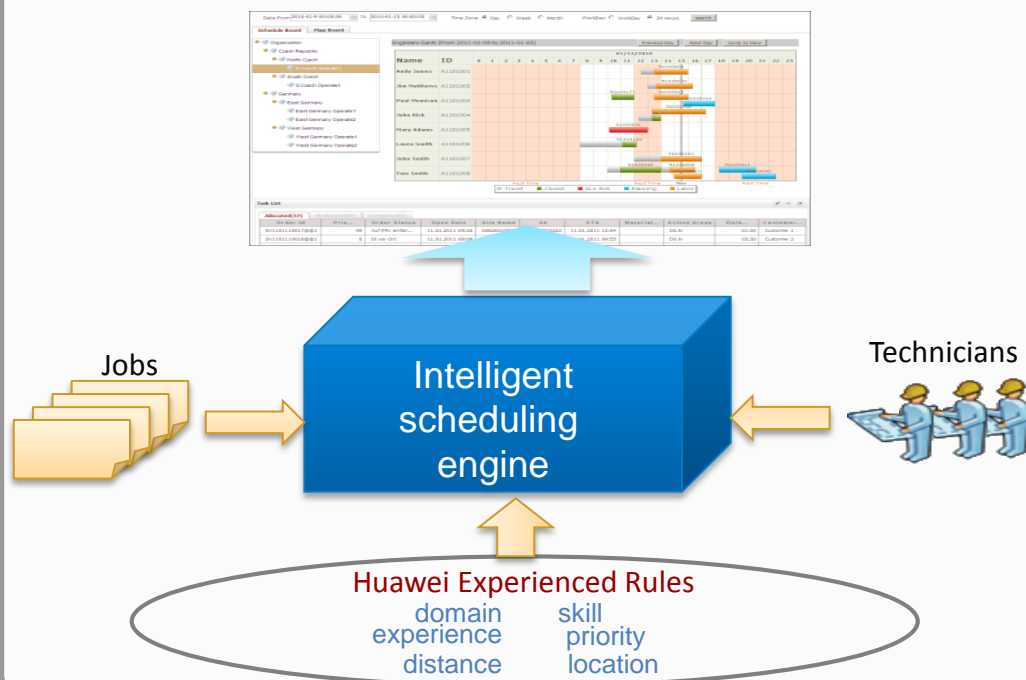


- **Visual scheduling**  
Gantt chart to display the technicians task status
- **Visual procedure**  
Visual traveling track of preventive maintenance, time on site
- **Visual status**  
Visual current location and tasks of technicians and vehicles
- **Visual result**  
Visual SOP implementation progress and result

Visualization achieves traceable and manageable field operation

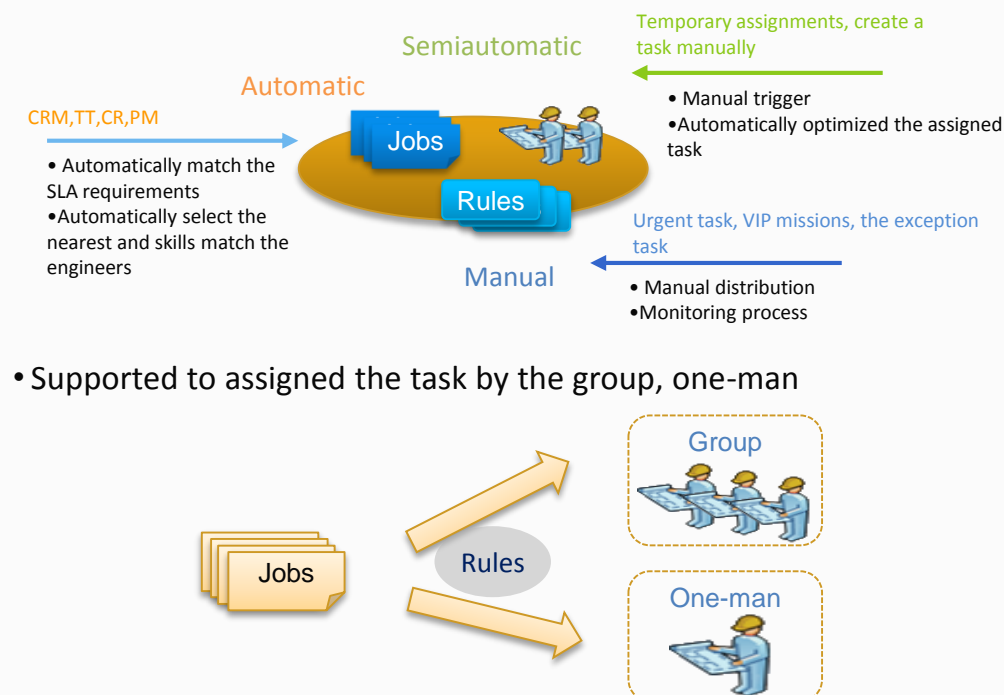
## Intelligent scheduling engine

- Intelligent scheduling engine constantly recalculates changes, in real-time, for highly optimized schedules

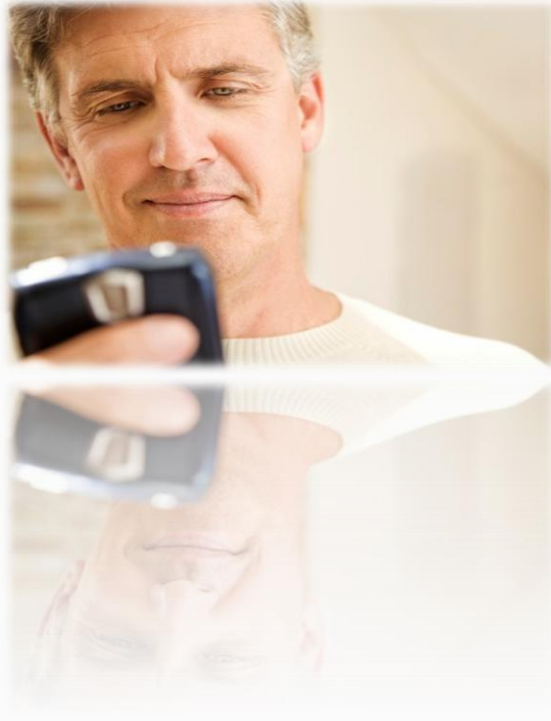


## Flexible Scheduling Module

- Support automatic (Static ,dynamic), semiautomatic, manual etc ..



Automatic dispatching achieves efficiency improving



## Order list

Messages	
Date	Description
02/07/08 19:06	Private Activity has arriv...
02/07/08 20:03	A new receiving documen...
02/07/08 20:06	New inventory data has ...
02/07/08 20:...	Barclays Ampthill: Upd...

## Site info

Service Order Preview

Service Order: SV0807020002@@1  
Job Site: Barclays Ampthill

Job Site Information

Barclays Ampthill  
121-123 Dunstable Street, Ampthill  
Bedford,  
United Kingdom

Site Contacts

Primary Contact  
The Manager  
01234 756700

Service Order Information

Contract #: C0007-2

## Order detail

\* Details Quick Update Activity SLA

Location

Barclays Ampthill  
121-123 Dunstable Street, Ampthill  
Bedford,  
United Kingdom

Details

Entitlements:

ETA: 03/07/08 09:42  
Duration: 0:19  
Opened: 02/07/08 14:12  
Request Type: Breakdown  
Priority: 51 High Priority  
Internal Ref #:  
Cust Ref #:

[0:00] Elapsed Time

## Status update

Details \* Quick Update Activity SLA

Update Activity

Start Work

Anywhere to receive and handle orders timely



**LEADING NEW ICT**

## Fuel consuming statistics

[illegible]

-  Highlights multi-Business delivery Challenges
-  Introduce Smart Data-Center Solutions Agility
-  OSS - Unleashing Network Potentials
-  Cloud Network Synergy Business Benefits
-  OSS Digital Operation Transformation Modules - MSUP
-  OSS Services Fulfilment Solution – WFMS
-  **Successful Cases – Q& A**

## Challenges:

Monitor and control 138 wells stretching over 400 kilometers.  
Guaranteed production and control data transmission of all production areas.  
Seamless access to existing systems to maximize existing system utilizations.

## Huawei Solution

- ✓ Wireless RF series instrument and RTU for production unit data acquisition, automatic control.
- ✓ Full network coverage with existing fiber optic network and 3G wireless networks.
- ✓ One way physical network gate technology allows seamless secure access to existing systems.

## Customer Benefits

Industrial-grade IP68 instrument and RTU in combination with the SCADA platform for unattended operations.

Image stream monitoring technology enables video monitoring of production sites over narrow band (3G) network links.

Automatic output calculations deliver improved equipment utilization rate by reducing losses due to production related problems and downtime.





## Customer Challenges

- Lack of mechanism to schedule efficiently for 2000 field technicians
- Weak satisfaction in customer appointment timely for home services
- Inaccurate CMDB because of site configuration manually. Thus resource has to confirm on site.

## Huawei Solution

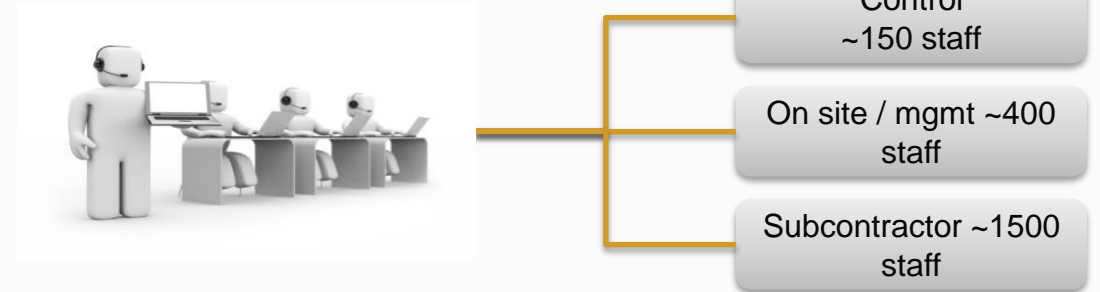
- Provide intelligent scheduling function, task dispatches considering with skill, experience, capability, distance...
- Provide visualization of human state to call center, achieve fast and timely appointment
- Integrate with CMDB, technicians can update configuration through PDA on site

## Customer Benefits

- Achieve auto dispatching 90%, improve efficiency 20%
- Customer satisfaction improving
- CMDB is consistent with resource configuration, resolution time improving 15%



Unified dispatching & track



- **Network Scale: 7000 BTSs.**
- **Subscribers: 15 millions**
- **Vendors: Ericsson, Motorola, NEC, and Huawei**
- **Domains: 2G, 3G, GPRS, EDGE, HSDPA, VAS, and TX**



Network availability	Network quality	Team efficiency
<p>Speed up response and shorten Service outage Wireless network availability was maintained at 99.99%</p> <p>Analysis (Compress De-duplication) Dispatch (By rules) Notice (SMS Email)</p> <p>Automated</p>	<p>Detect the trend of network worsened foreseeingly Network call setup success ratio keep in 95%</p> <p>High level Performance Real-time Dashboard Performance Threshold</p> <p>Real-Time</p>	<p>Optimize the maintained process constantly Team efficiency improve 30%</p> <p>Incremental trouble ticket quantity Shorter fault resolved duration Faster customer response</p> <p>Visible</p>

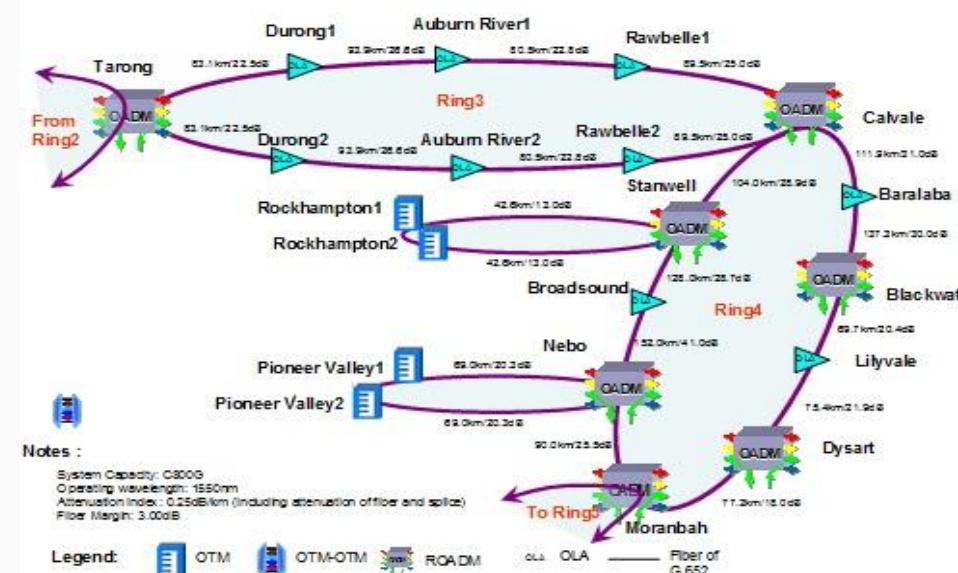


## Challenges

- The bandwidth of current network is not sufficient and can't meet the requirement of the power service development;
- the network must be stable during long distance transmission;
- Low latency and high reliability must be provided in the communication network;

## Solution & Benefits

- The long distance backbone transmission network with ultra big capacity is built through 186 OTN equipment. 100G technical platform is used in the solution;
- Bandwidth is increased so service expansion and new service access can be supported;
- The reliability of network is improved, lower the risk of device running and reduce the cost of investment;

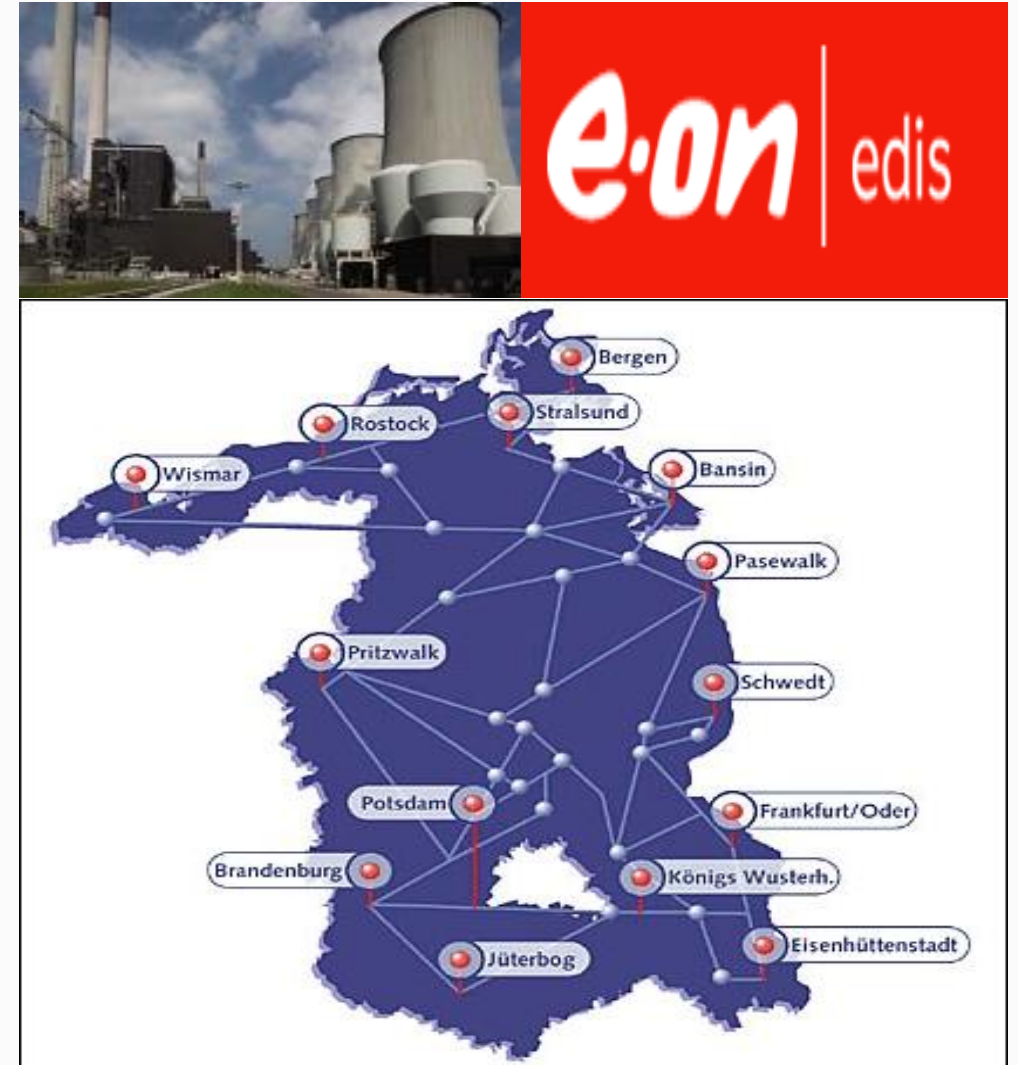


## Challenges

- The bandwidth of current network can't meet the requirement of the service expansion in future;
- Extended transport network provide data transmission services for local utility companies;
- Increase the utilization ratio of current network assets;

## Solution & Benefits

- OSN 8800/1800 replaced old DWDM device.
- Access a variety of services, provide a stable large bandwidth transmission network ;
- Massive bandwidth to support customers to carry out bandwidth rental business ;



# Q & A

A bright sun with rays shining through clouds in a blue sky.

THANK YOU