

The ZTE logo, consisting of the letters 'ZTE' in a bold, blue, sans-serif font, followed by the Chinese characters '中兴' in a similar style.

新一代光网络网络管理解决方案

Network Management Solutions to New Generation Optical Transport Network

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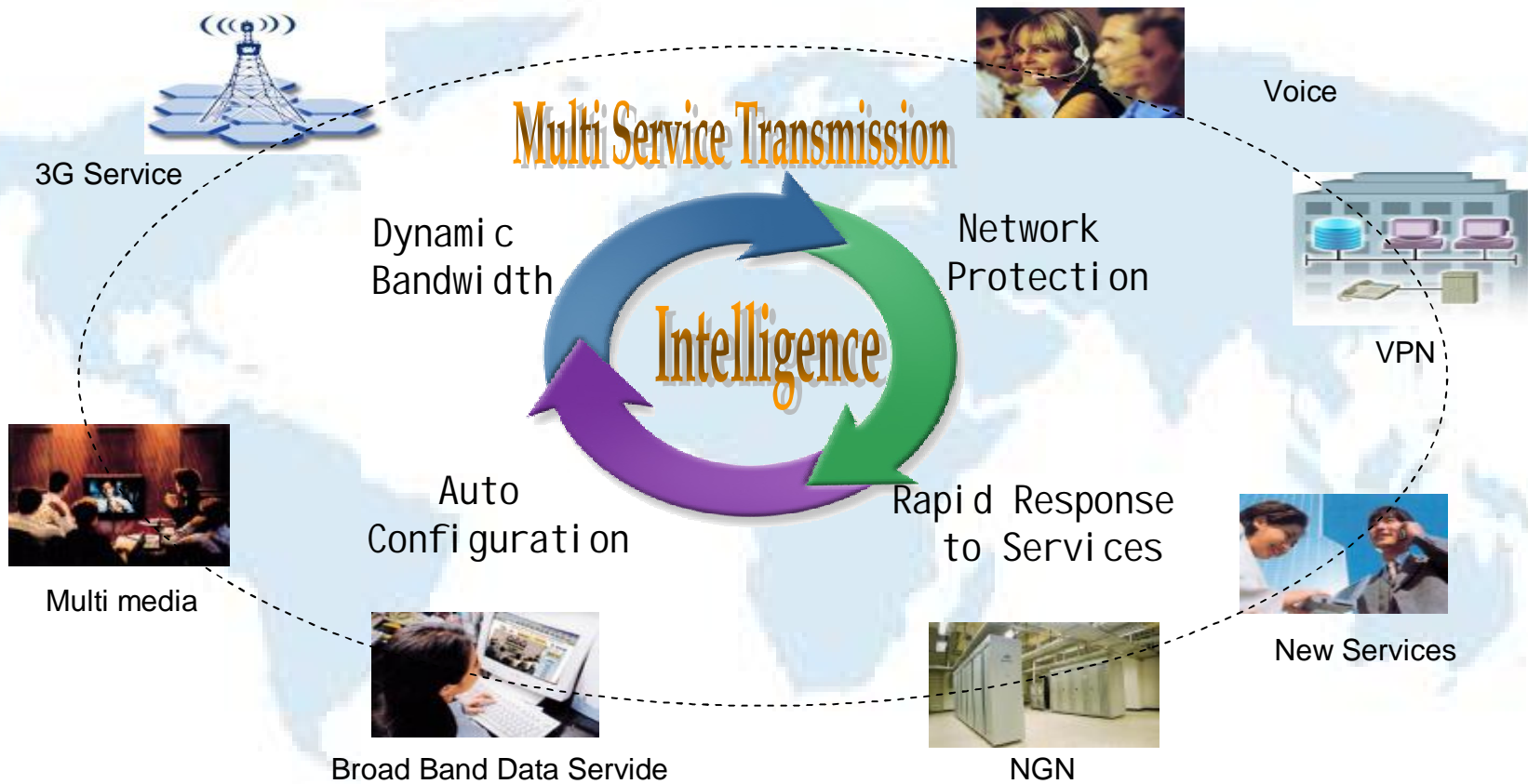
? Evolvment of New Generation Optical Transport Network

Ø Network Management for New Generation Optical Transport Network

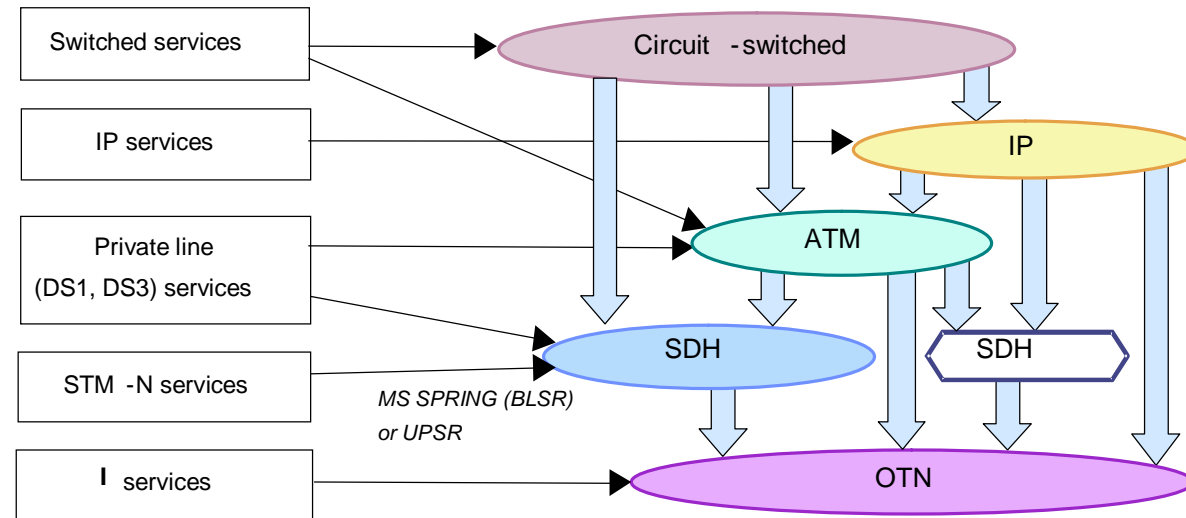
Ø ZTE's Network Management Solutions

Evolution of Optical Transport Network

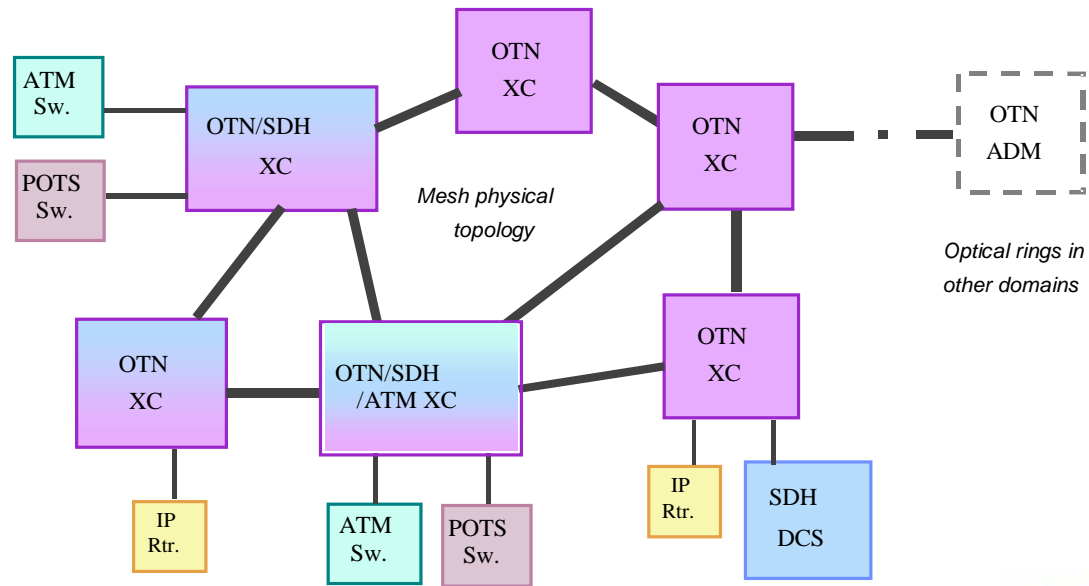
- High Capacity, Multi-Service, Intelligence
- MSTP/MSPP provides the capability of carrying multi services
- ASON provides the intelligence features
- Optical transport network is evolving to an operational and value added network



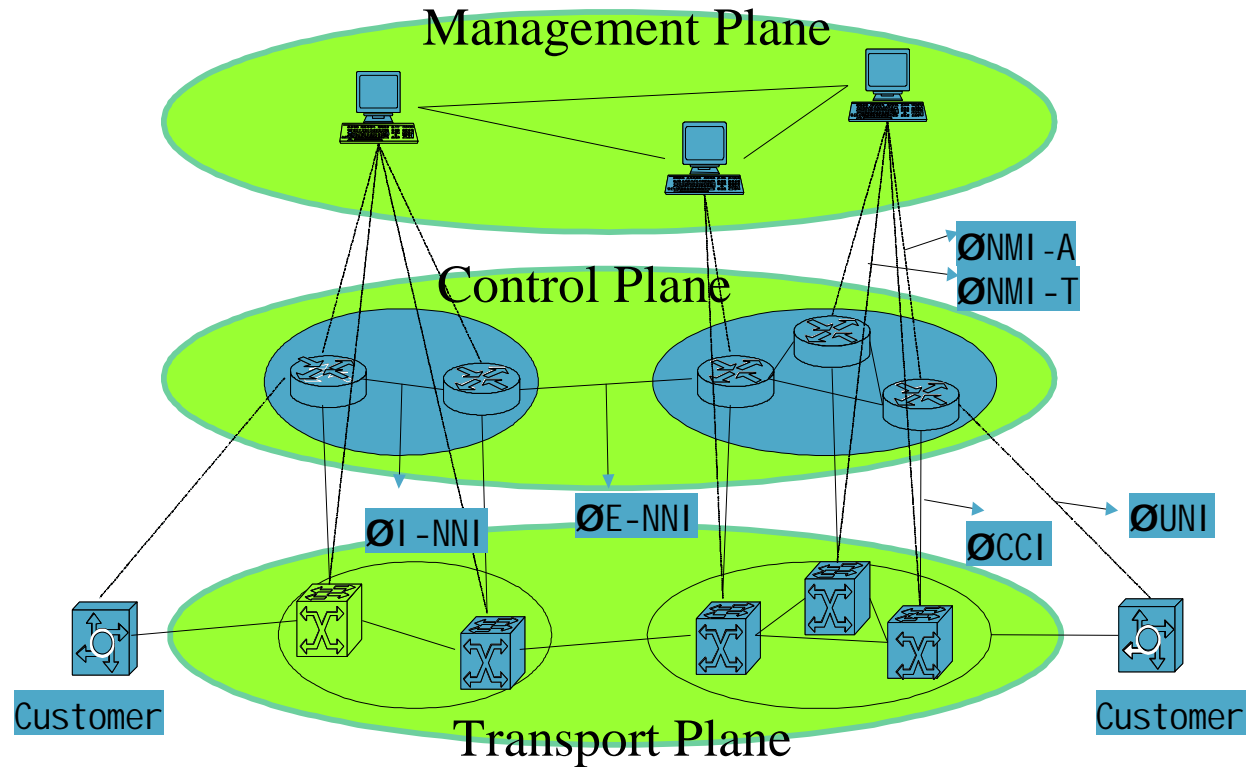
Layer Domain Architecture



Physical Architecture

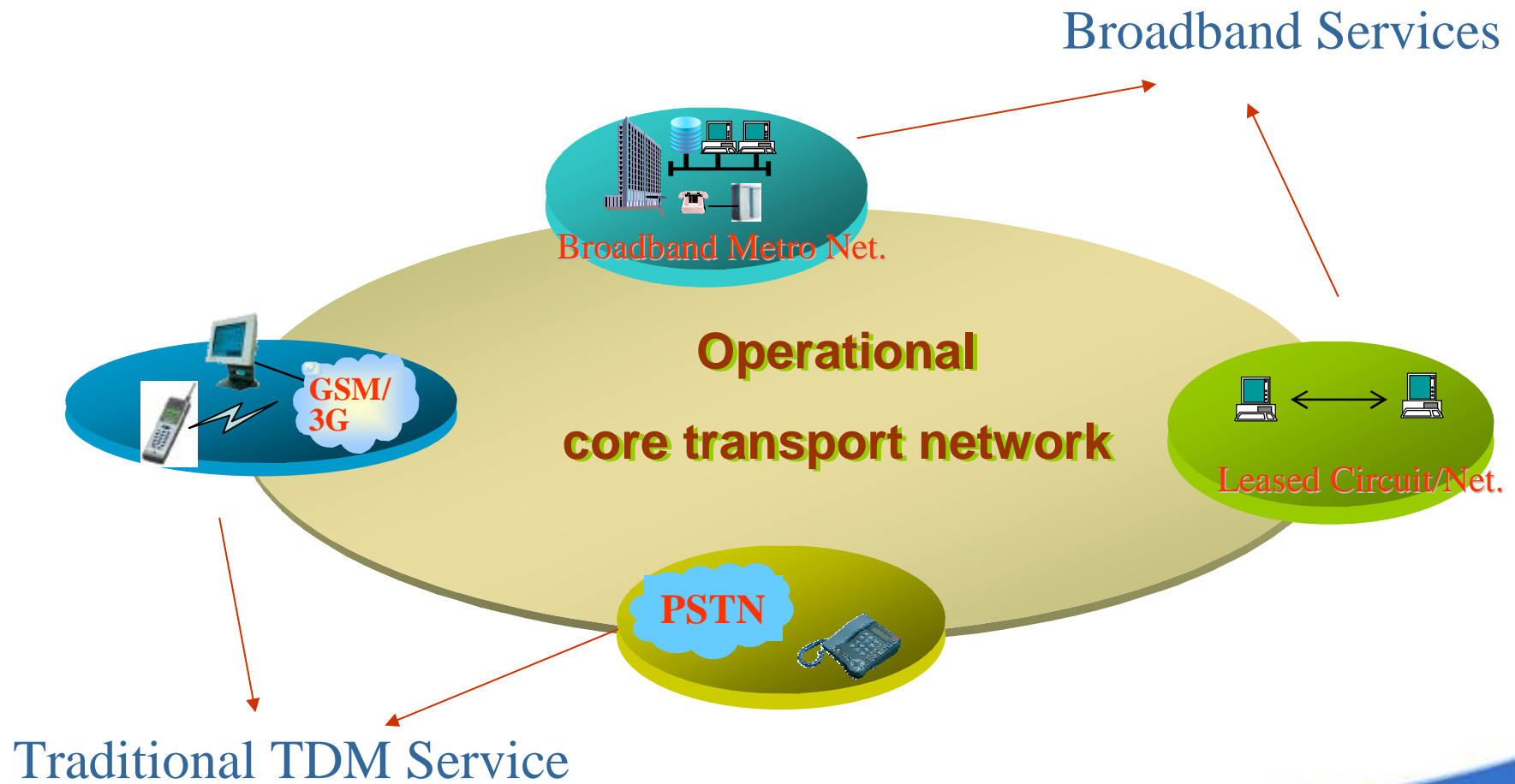


Three Planes of ASON: Transport, Management, Control



Change of the Role

Optical transport network is evolving to operational service provided network, besides the basic functions of transport.

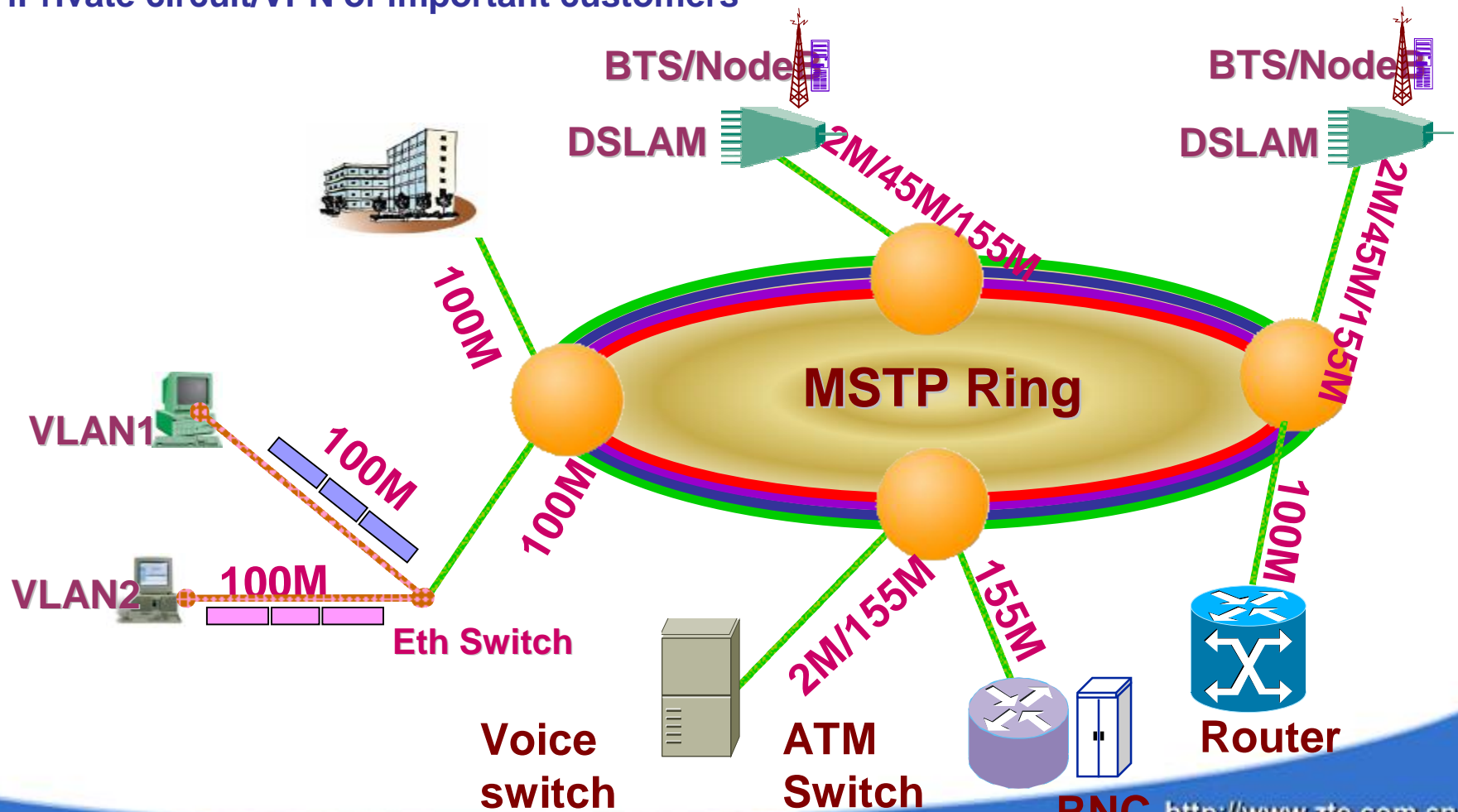


nTraditional TDM services: voice, TV conference, private circuit

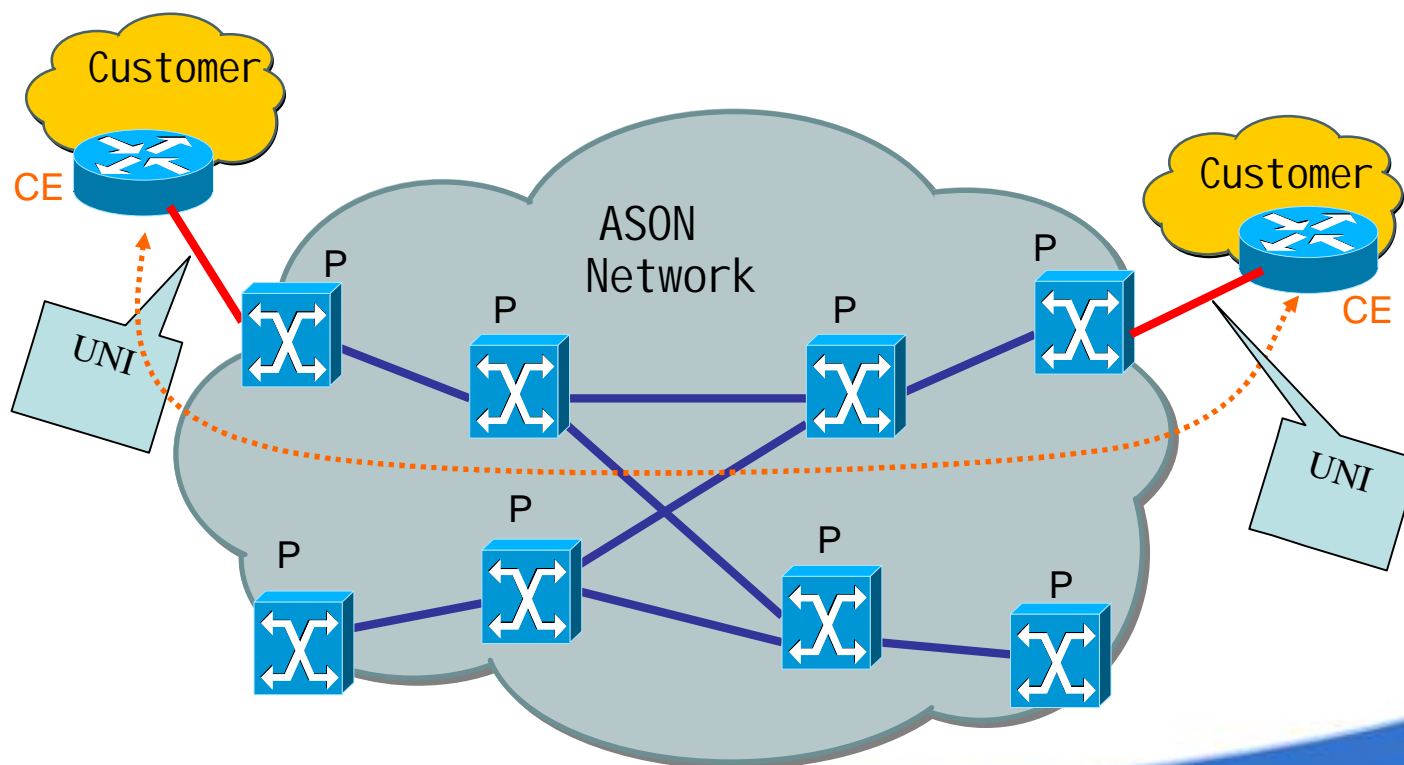
nData services: VPN, 3G, Internet access

nEthernet services: EPL, EVPL, EPLAN, EVPLAN

nPrivate circuit/VPN of important customers



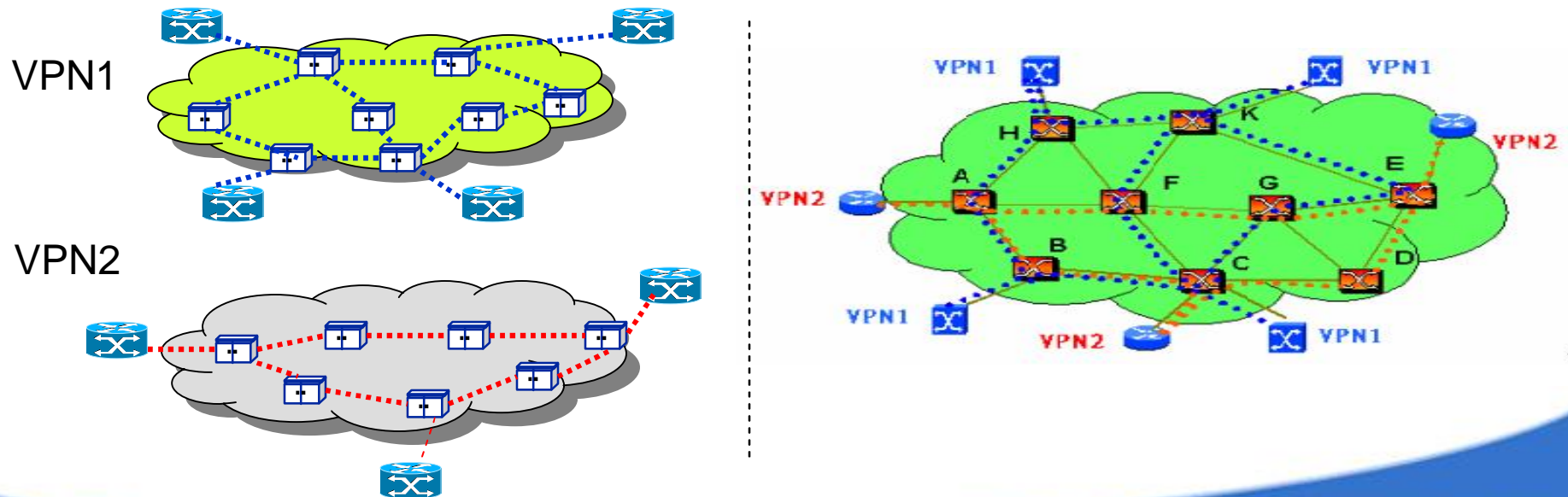
- BoD
 - SC
 - UNI 2.0
 - Accounting



qOVPN: VPN on optical layer for specific customers

qCustomer can manage, create, monitor their own service connections

qConnection Type might be PC、SPC or SC



ØEvolution of New Generation Optical Transport Network

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Overview of New Generation of Optical Network Management

The new generation of optical network management is in the layer between device management and OSS. It plays an important role for both upper and lower layer.

Ø Shall support OSS building and meet the requirements

Ø Management of multi devices, multi services, multi resources, multi domains

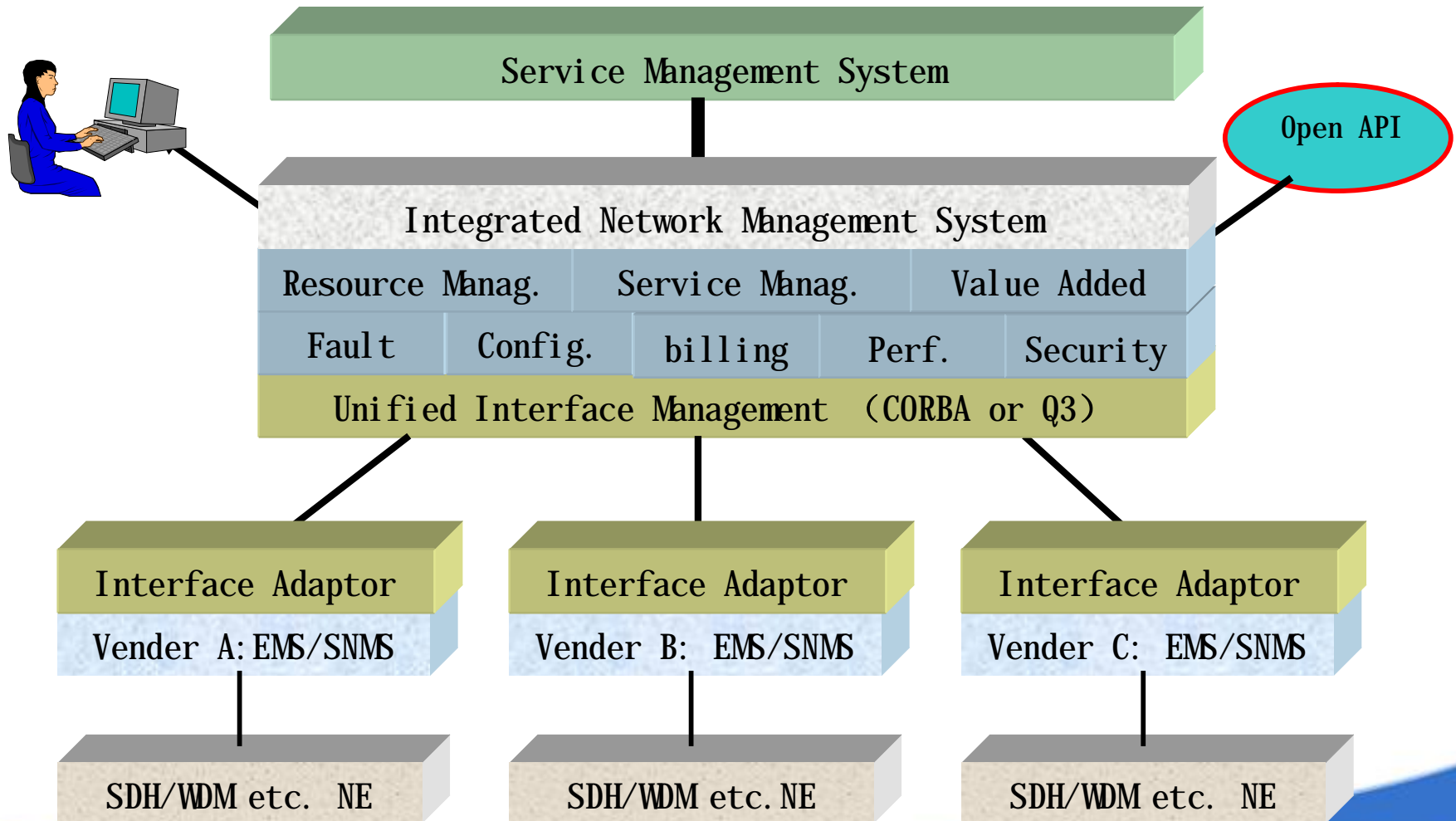
Ø Suitable for optical network service operation and management

Ø Analysis and display in different point for network, resources and services

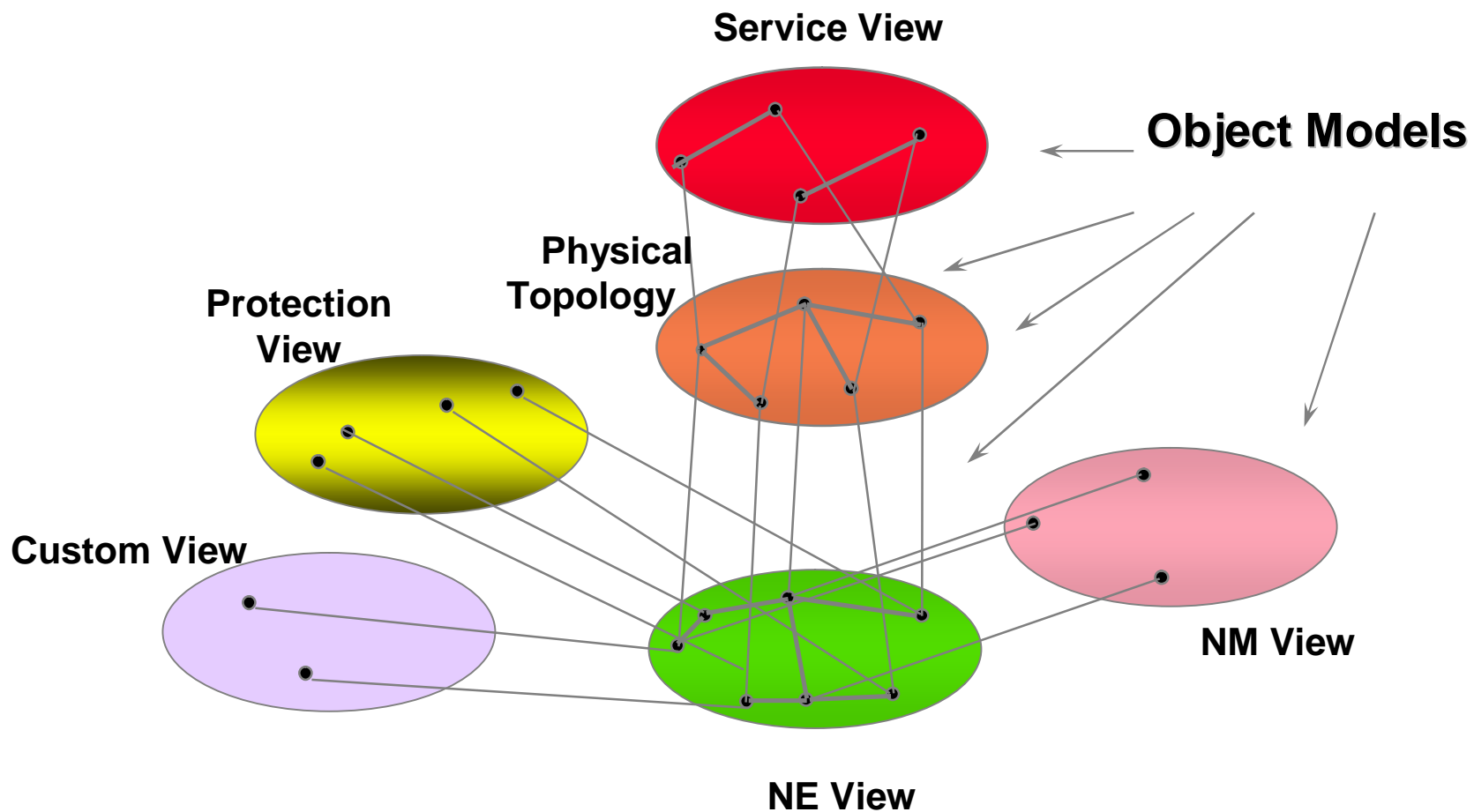
Ø Evolvement of network management itself

- Ø Combine with OSS to implement service work flow
- Ø Provide dynamic data to OSS and resource management system
- Ø End to End management of service fulfillment, service assurance and service billing
- Ø Adaptable to carrier's adjustment of service work flow

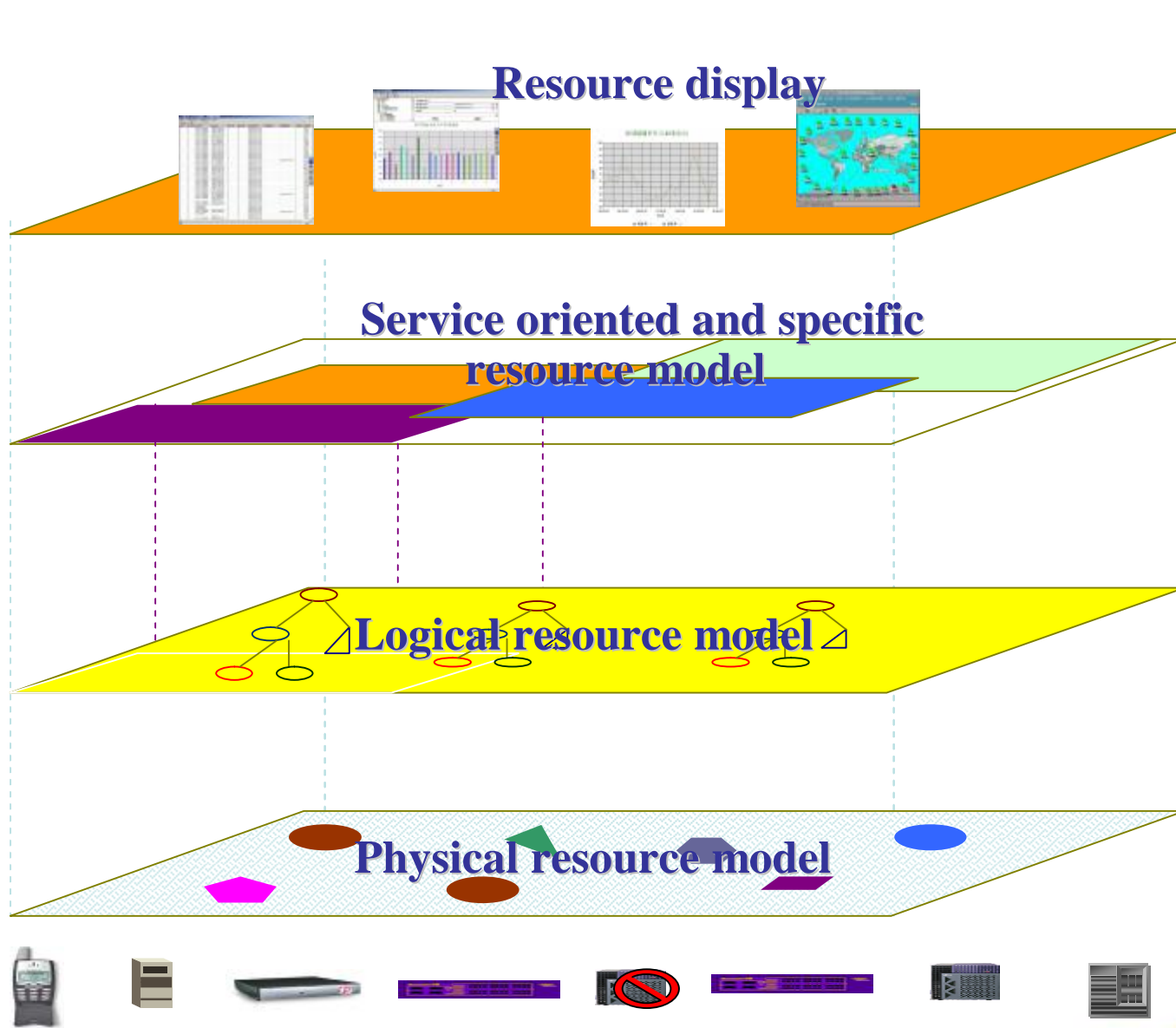
A Solution to Carrier's Integrated NM of Optical Net.



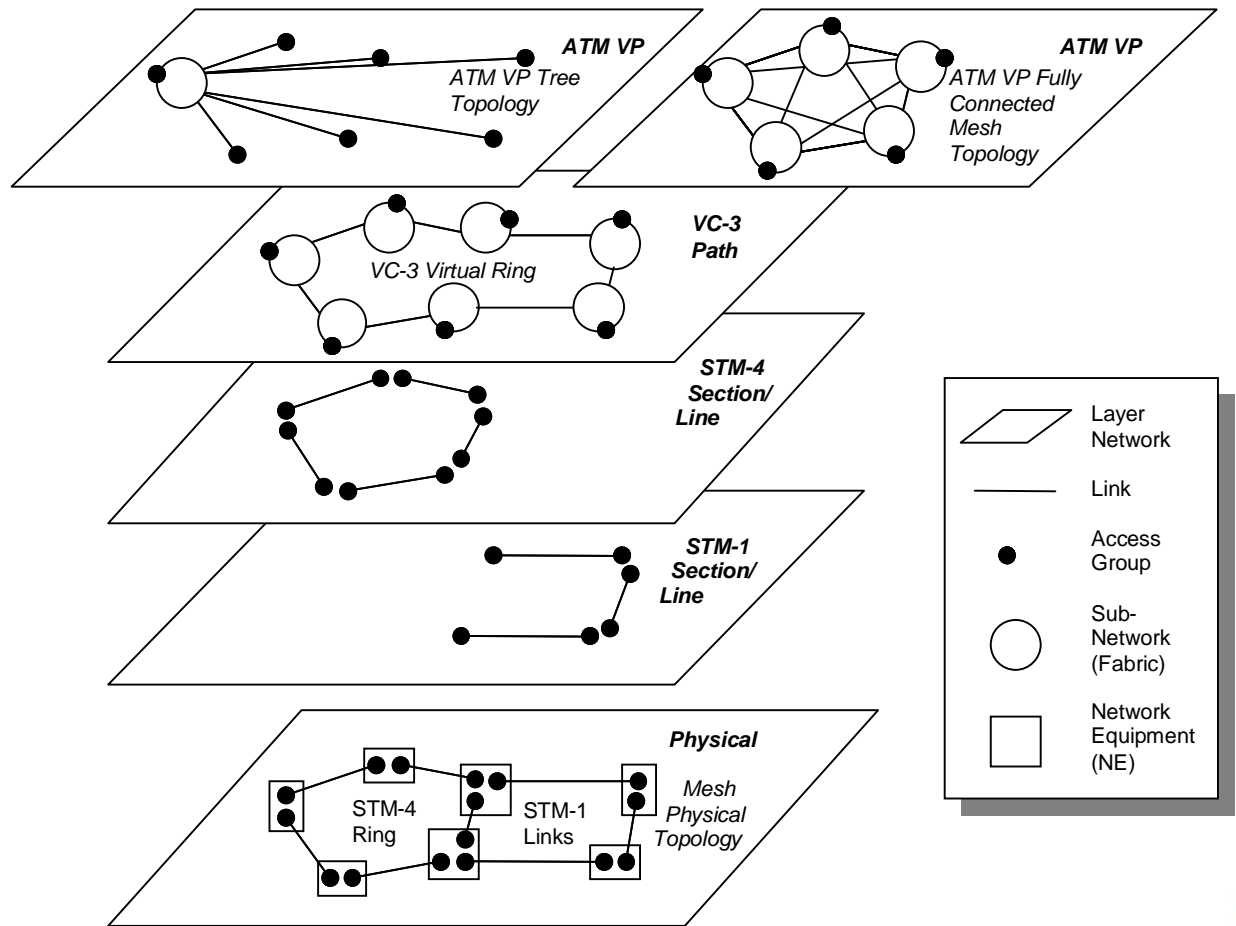
Various Views of Network



Various views of resources

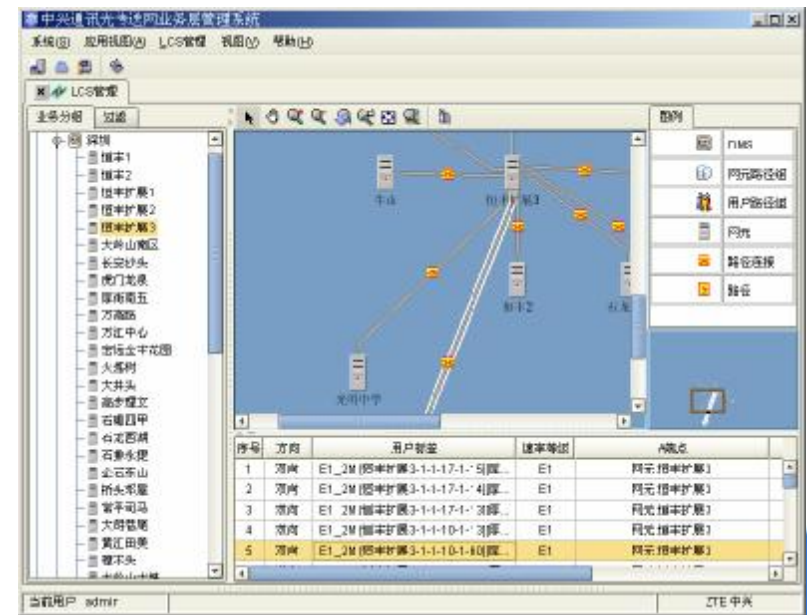
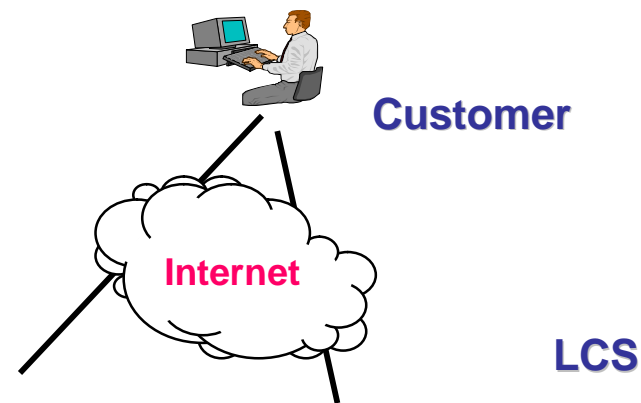


- 4 End to end service views
- 4 Service views, Physical logical views in different layers
- 4 Manage resources in layer or group



ZTE中兴 SMS: Customer & Service Oriented

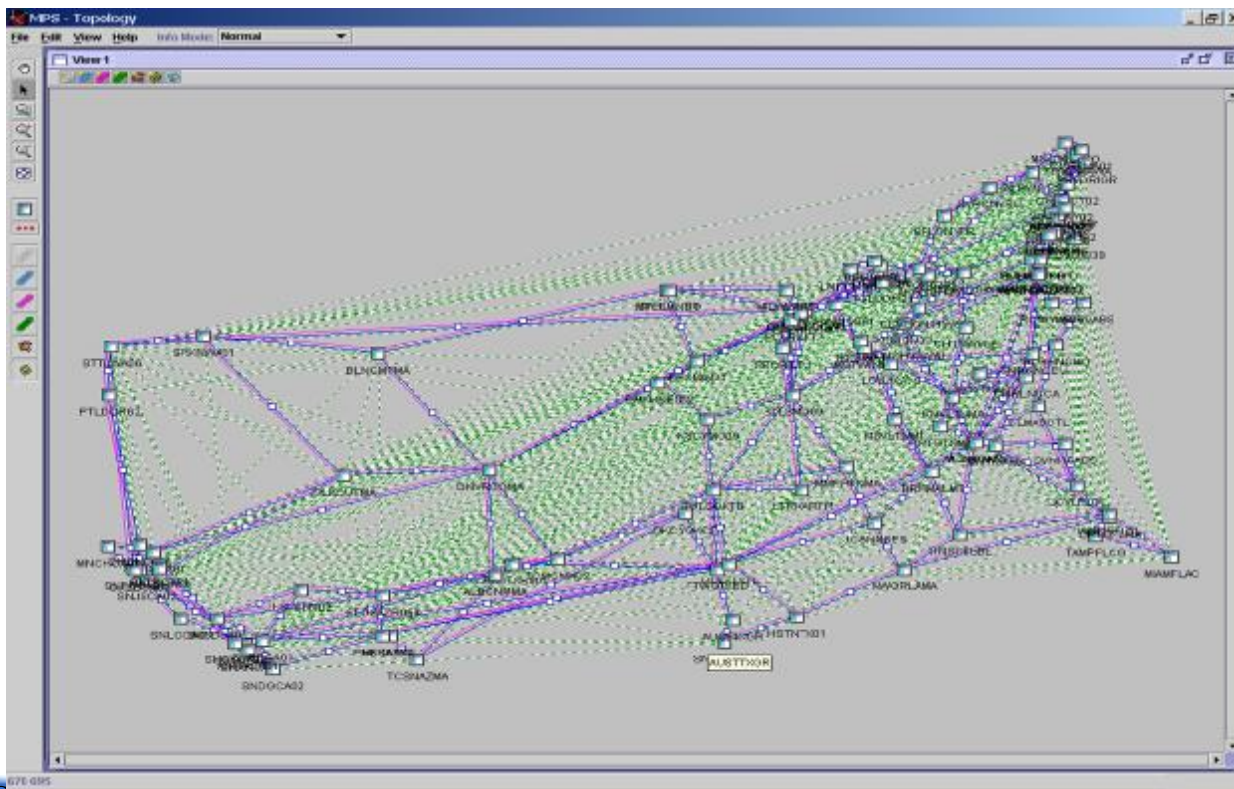
Through SMS, Customer can monitor, query and manage their own circuit services and VPN anywhere, anytime.



Ø Plan of new network

Ø Analysis and optimization of existed network

Ø Network simulation



ØFlexibility and extensibility

ØFlexible deployment. Either integrated or distributed on different devices, functions, domains

ØEasy to update functions

ØOpen. Flexible to integrate with other systems.

ØIntelligence

ØCorrelation analysis

ØPolicy management

ØITU—T M.3060 Principles for the Management of Next Generation Networks

ØITU-T M.3017 Framework for the Integrated Management of HCPN(Hybrid Circuit/Packet Networks)

ØITU-T G.7718 Framework for ASON management

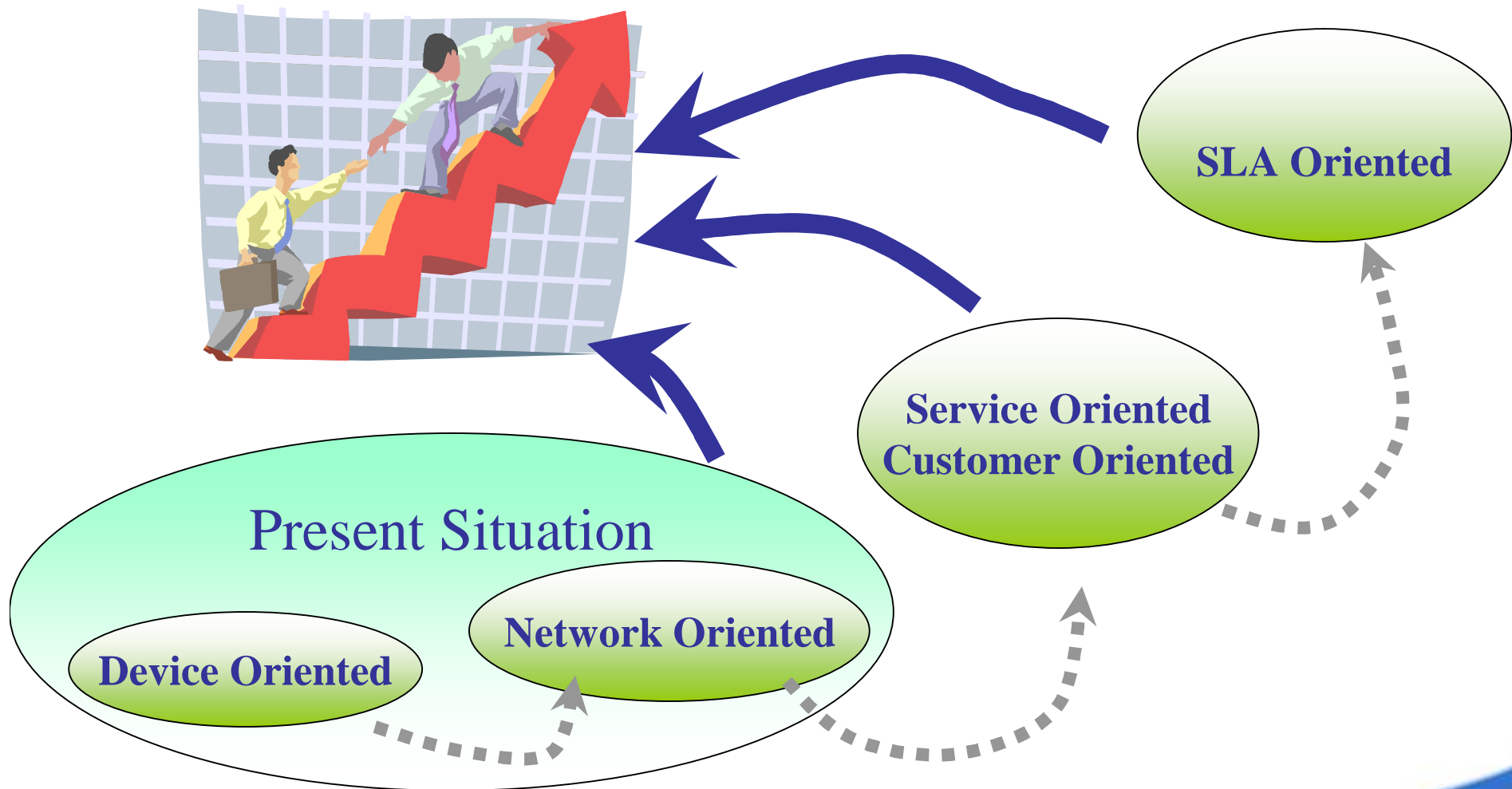
ØITU-T Draft G.7718.1 Protocol-neutral management information model for the control plane view

ØITU-T Draft Q.840.1 Requirements and Analysis for NMS-EMS Management Interface of Ethernet over Transport and Metro Ethernet Network

ØTMF MTNM

Ø CCSA TC7 : MSTP, ASON related specifications in series

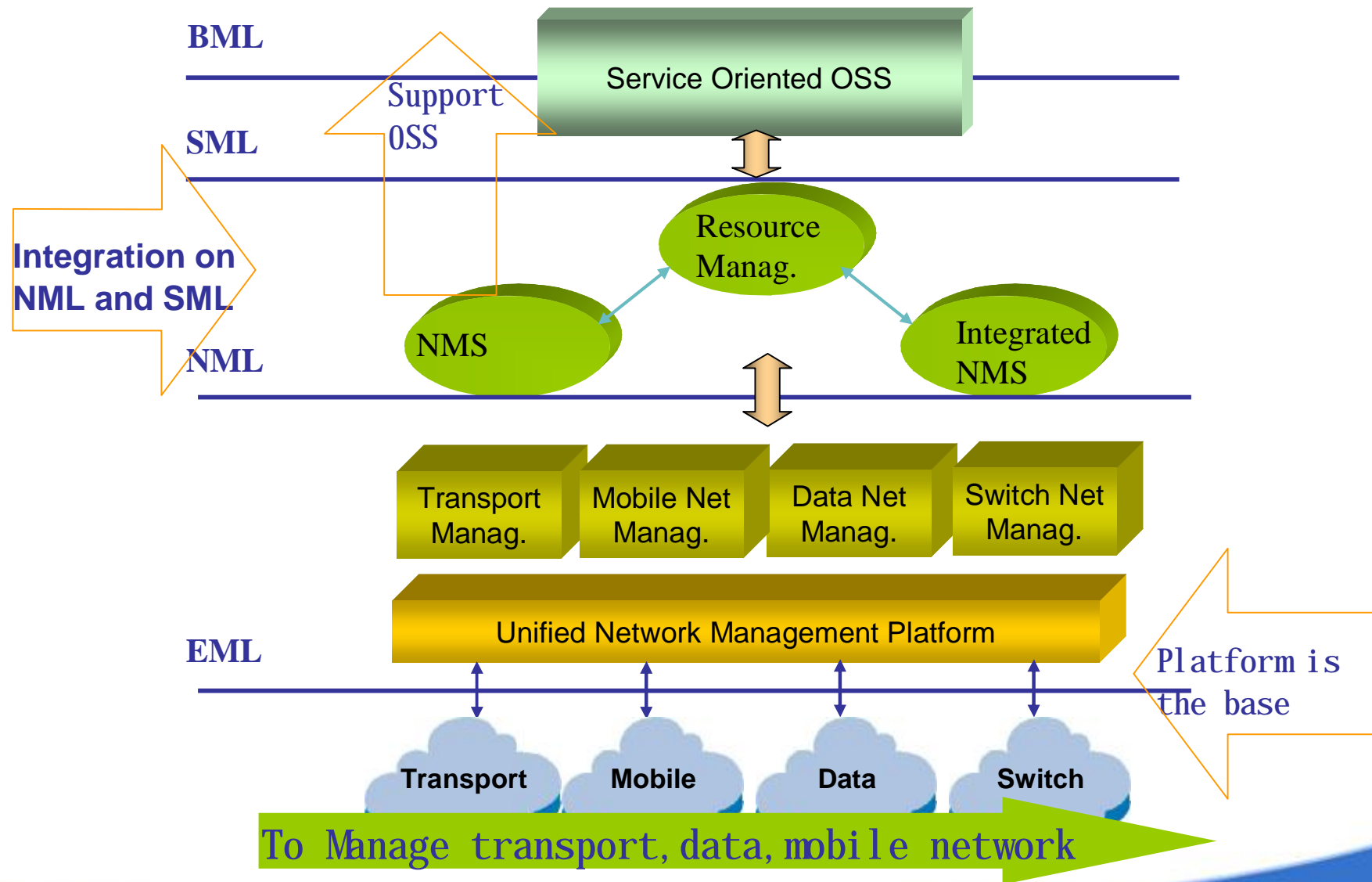
Next Step of Optical Network Management



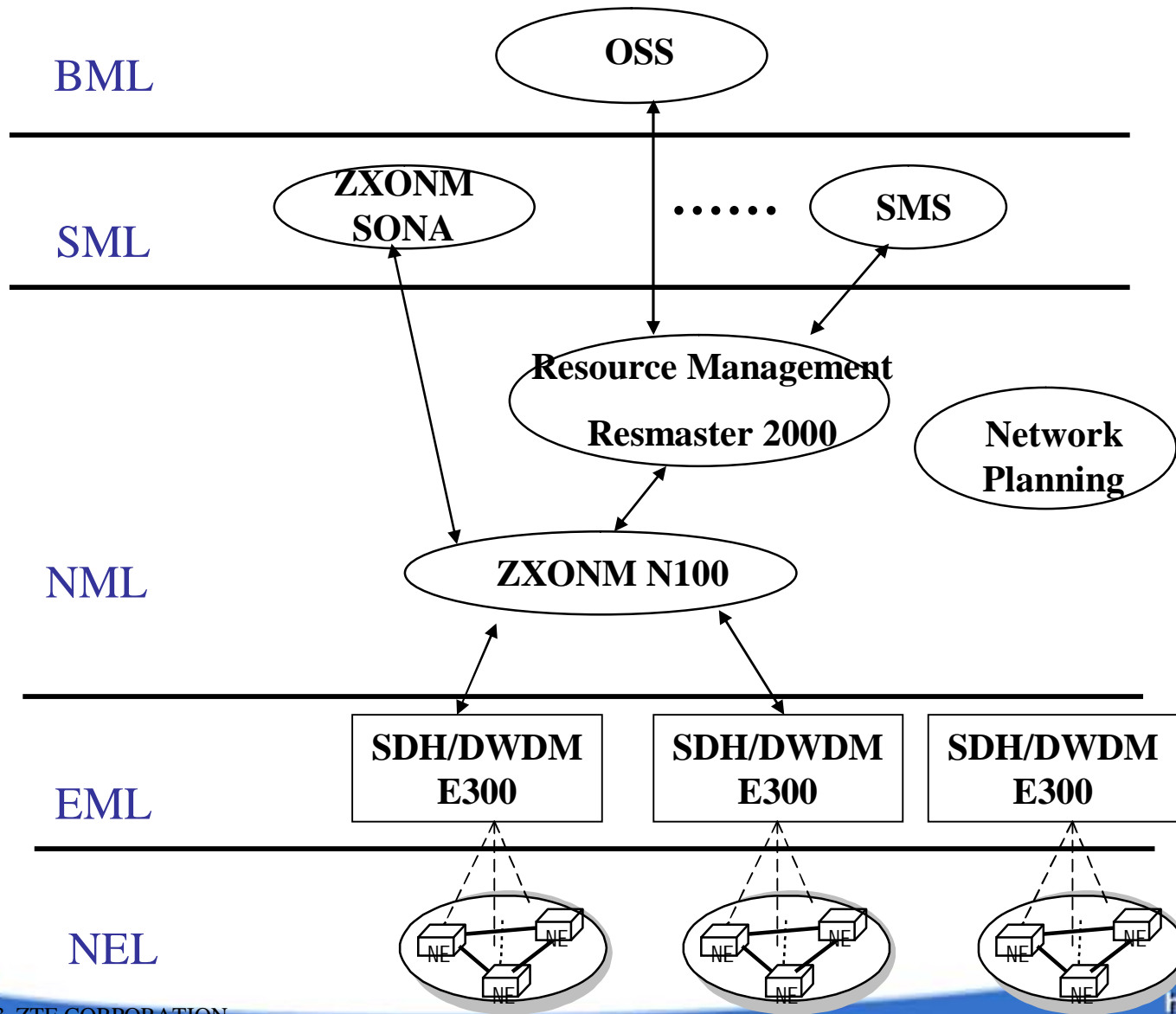
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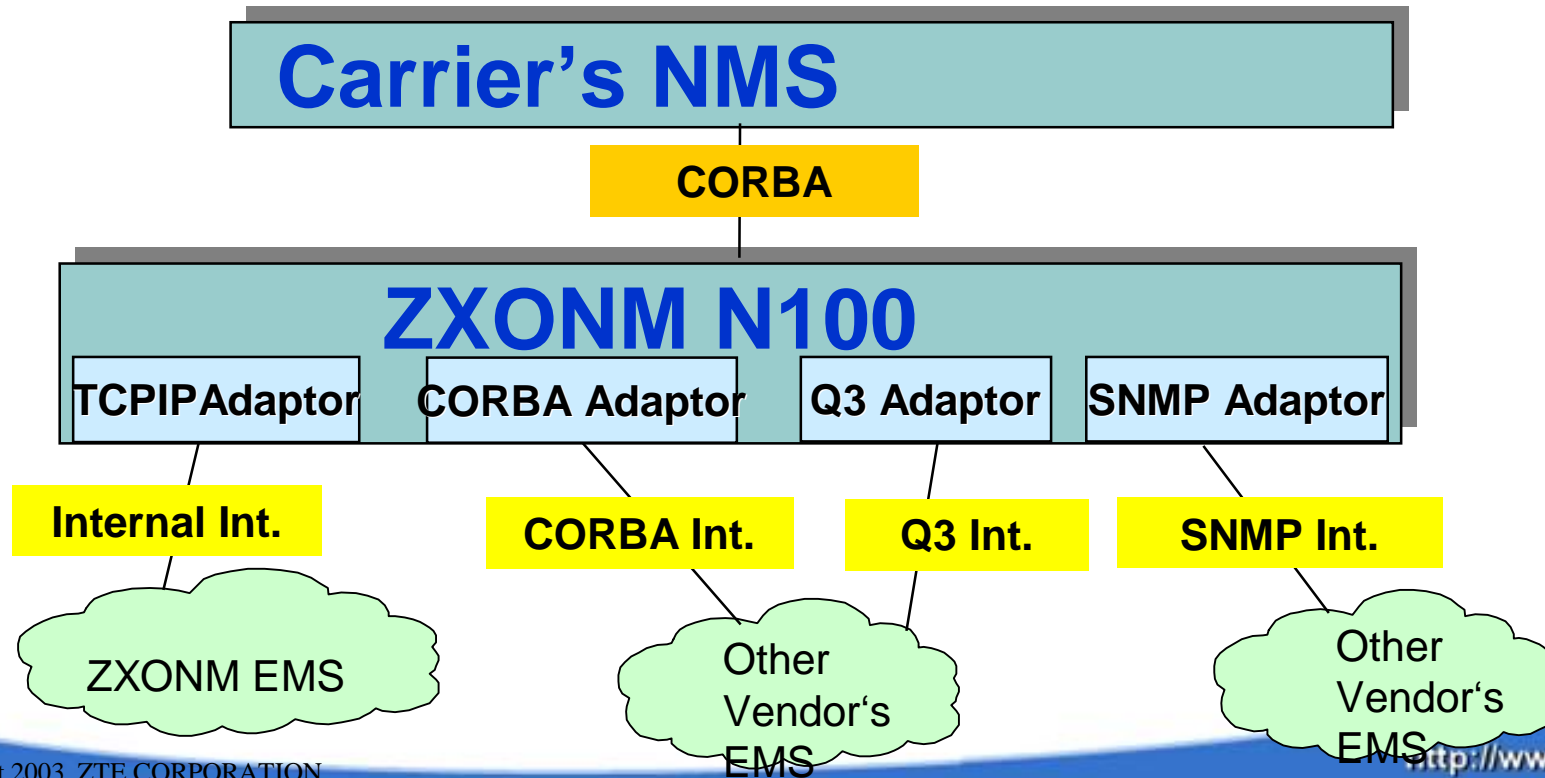
? ZTE's Network Management Solutions



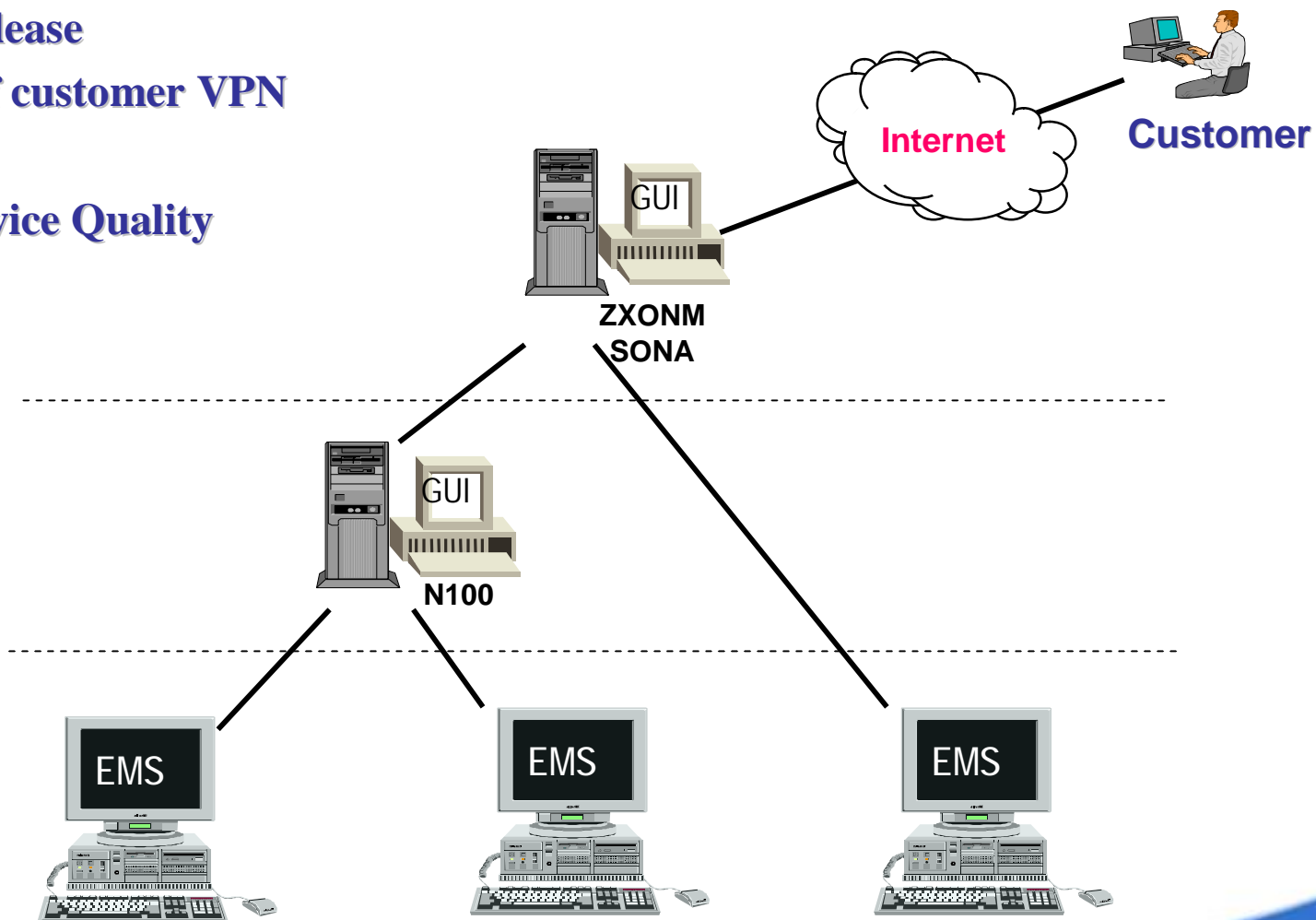
ZTE中兴 Network Management Solutions to Optical Transport Network



- Ø An integrated NMS on NML
- Ø Adaptive to management of large scale, multi service, high level network
- Ø Integrated management of multi vendor's EMS
- Ø Provide standard CORBA interface to carrier's NMS



- SMS: Service layer management
- Face to service lease
- Management of customer VPN
- CNM by Web
- Analysis of Service Quality



Ø **CNM (Customer Network Management)**

Ø Security management

Ø Log management

Ø Service management

Ø **Customer Management**

Ø **LCS (Leased Circuit Service) management**

Ø **VPN Management**

Ø **Analysis of Service Quality**

Customer can log on Web server of SONA by Internet, and monitor, query and manage their own circuit services and VPN anywhere.

The screenshot shows the ZTE CNM web interface in Microsoft Internet Explorer. The browser address bar shows the URL: <http://10.197.33.161:8080/cnm/jsp>. The page header includes the ZTE logo and the slogan "Global Connections Universal Solutions". Navigation links include "安全管理", "日志管理", "业务拓扑", "业务列表", "业务质量", and "帮助". The current user is identified as "当前客户: 1" with account "sona" and a login time of "2004年2月11日 下午5:34".

The main content area displays a network topology diagram with nodes labeled "东语电报7楼", "铜盆岭2", "崇湾1", "崇湾2", "五一一路", and "崇湾2". A table below the diagram lists VPN services:

序号	客户名	VPN名称	SAG名称
1	1	1	东语电报7楼
2	1	1	铜盆岭2

At the bottom of the interface, there is a copyright notice: "Copyright©2003中兴通讯股份有限公司版权所有 请使用IE5.0或以上版本, 800*600或以上分辨率". The status bar at the bottom left shows "业务拓扑启动成功" and the bottom right shows "本地 Intranet".

Easily and quickly create end to end leased circuits for customers.

The screenshot displays the ZTE LCS Management software interface. The main window shows a network topology with various nodes and connections. A detailed view window is open, showing a leased circuit configuration. The window title is "Server VC4 [恒丰扩展3-1-1-3-1-1(3-1-0-0-0)][厚街三屯-1-1-7-...]".

The detailed view window contains a table with the following data:

序号	方向	用户标签	速率等级	A端点
1	双向	[网元:恒丰2 / MS:16:002]_[网元:厚街...	未知	网元:恒丰2 / MS:16:002
2	双向	[网元:恒丰2 / MS:17:001]_[网元:恒丰...	未知	网元:恒丰2 / MS:17:001

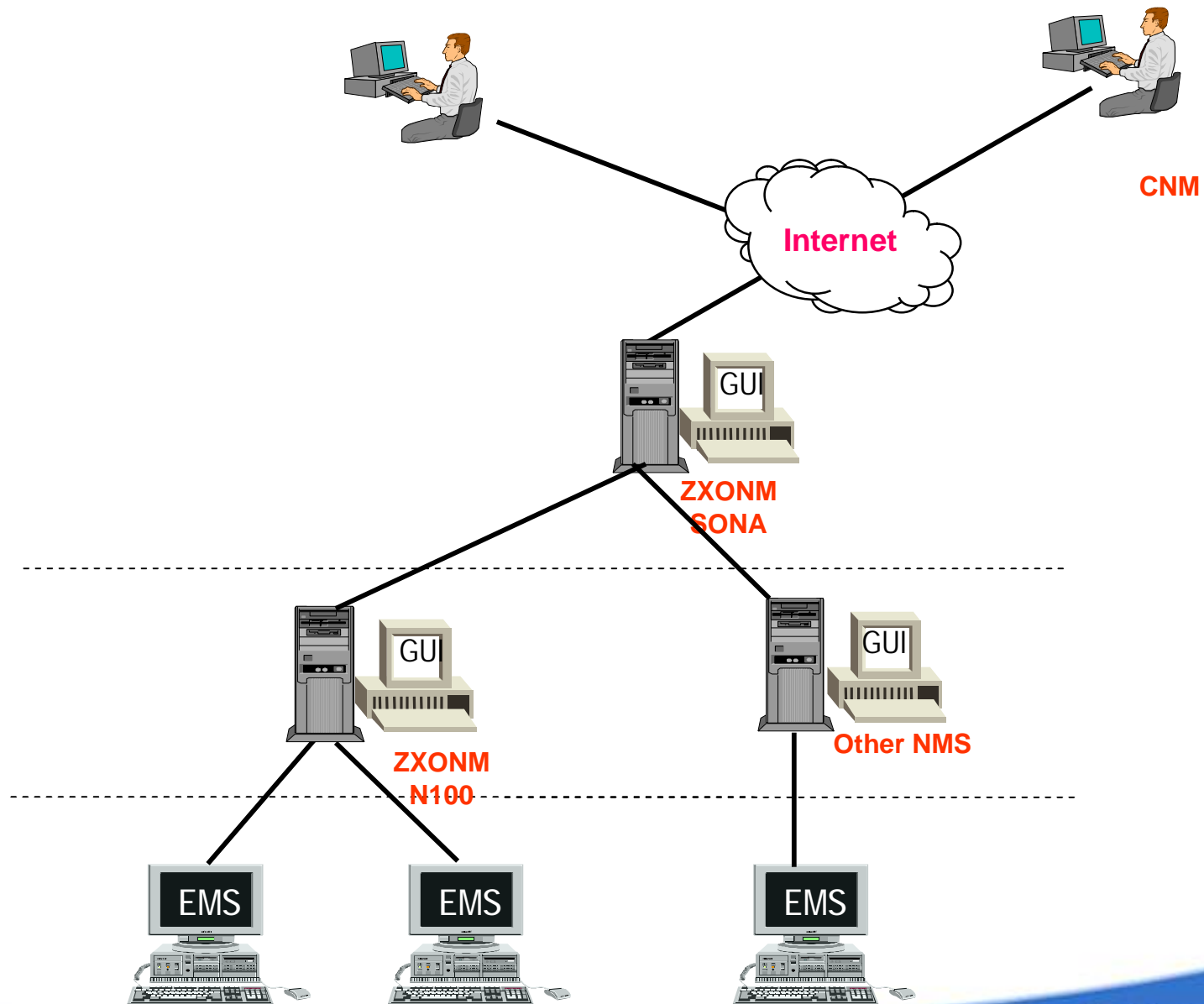
Below the table, a diagram shows the circuit path between nodes: 厚街三屯 (Houjie Santun), 恒丰2 (Hengfeng 2), and 恒丰扩展3 (Hengfeng Extension 3). A legend indicates that red represents the A端点网元 (A-endpoint network element) and blue represents the Z端点网元 (Z-endpoint network element).

At the bottom of the main window, there is a table with the following data:

序号	方向	用户标签	速率等级	A端点
1	双向	E1_2M [恒丰扩展3-1-1-12-1-15][厚...	E1	网元:恒丰扩展3
2	双向	E1_2M [恒丰扩展3-1-1-12-1-14][厚...	E1	网元:恒丰扩展3
3	双向	E1_2M [恒丰扩展3-1-1-12-1-13][厚...	E1	网元:恒丰扩展3
4	双向	E1_2M [恒丰扩展3-1-1-10-1-13][厚...	E1	网元:恒丰扩展3
5	双向	E1_2M [恒丰扩展3-1-1-10-1-00][厚...	E1	网元:恒丰扩展3

The interface also shows a sidebar with a tree view of network elements and a status bar at the bottom indicating the current user is 'admin' and the company is 'ZTE 中兴'.

Integration of EMS/NMS/SMS





ZTE中兴



Global Connections Universal Solutions

Thank You

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