Huawei SoftCOM: Reshaping the Future of Network Architecture
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Changing Role of Telecom in the Global Economy: From Driver to Enabler

Economy Growth Evolution

Source: Huawei MI
Changing Business Factors to Drive Telco Industry Transformation

Traditional service model saturated and declining

Growing New Way

Existing TCO structure no longer sustainable

Saving New Way

Huge potential opportunities in digital economy

Transforming to new business operation models

- Network Management
- Centralization & Automation
- IT Transformation
- Services Innovation
- Customer Service
De-Telecom: Direction of Network Technology Optimization

Transformation is the only option for industry sustainability
- Network structure to be simplified
- Network element to be standardized, virtualized and generalized
- Network cost to be optimized
- Network service to be enabled
- Service platform to be merged and integrated
Network Architecture has been Evolving for the Past Decade

**ALL IP**
- ADSL/VDSL
- PON/NG-PON
- GSM/UMTS
- 40G/100G
- IP+ Optical Platform
- Cloud Platform

**RAN Platform**
**FAN Platform**
**IP+ Platform**

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**Single**

**SingleCloud**
- Single Backbone
- Single Metro

**SingleRAN**
- GSM/UMTS/HS PA/LTE...

**SingleFAN**
- ADSL/VDSL/PON /Ng-PON

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**SoftCOM**
- Cloud technology is the foundation
- Beyond network: Internetized operation, structurally lowers the cost
- Saving TCO and growing revenue in new ways

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**ALL-IP enabled platforms**
- Supporting bandwidth requirements and emerging technologies for 10 years
- Saving TCO and growing revenue in new ways
SoftCOM: The Comprehensive Initiatives

1. Network Control Cloud-
   Software defined network, redefine network architecture

2. Network Function Cloud-
   Network function virtualization, redefine equipment architecture

3. IT System Cloud-formation
   Explore ICT services, redefines architecture of telecom Data Center

4. Internetized Operation
   Agile business operation model creating values in digital eco-system
Pillar 1: Network Control Cloud-formation

**Use Case Illustration**

- SDN based Data Center interconnection
- Controller
- New Routing Algorithm
- Traffic Matrix
- Topology & B/V Cost
- QoS
- 3rd app API
- Regional Engineering
- Exhaustive Waterfall algorithm
- Global engineering
- Non-linear mathematic planning
- Max-Min fairness

**Fundamental Research**

- Light Congestion
- Heavy Congestion
- Non-Congestion

**Advantages:**

1. Less complicated elements, simpler OAM;
2. Centralized and dynamic traffic grooming, optimal experience and efficiency;
3. QoS based traffic operation, supporting network sharing between services and tenants

**Case Study:** Internet Giant to improve IP Core usage to 90+ %
Pillar 2: Network Function Cloud-formation

Network Functions deployed as Software Modules

- Network Functions deployed as Software Modules
- On-Demand and Auto-Balanced Resource Allocation

NfV Principle: Hardware and Software Decoupling
To Structurally Optimize CAPEX and Minimize TTM with Continuous Functional Enhancement
Pillar 3: IT System Cloud-formation

Carrier Cloud Computing Initiatives: Building Cloud-based Data Center Infrastructure
For Data Center consolidation, public/hybrid XaaS service offering and edge DC Intelligence
Carrier Cloud Platform: Creating New Value Proposition in a New Digital World
Making Business Agile, Focusing on Service Enablement and Innovating through the Eco-
Fundamental Platforms Establishing the Architectural Pillars

Everything is service in internet era, operator IT system to be optimized in following aspects:

- Internal system to External system
- Post processing to real time
- Supporting system to service enablement

Fundamental Cloud Computing software platform, equipped with capabilities covering both the IT and CT part of the carrier’s network
SoftCOM in the Long-Term: Open, Enabled and Efficient

Regional Data Center
- PCRF
- Controller
- Apps
- Carrier Cloud

National Data Center
- IMS
- MME
- 3rd party apps
- Control
- P Video
- API Manager
- Carrier Cloud

Cloud in Box
- Cloud BB
- Cloud DSL/OLT
- Dynamic
- Efficient
- Scalable
- Automatic
- Open

Edge Cloud
- SRC
- EPC
- SBC
- Edge Cloud

Carrier Cloud
- Regional Data Center
- National Data Center
- Cloud in Box
- Cloud BB
- Cloud DSL/OLT
It’s all about bringing values

Beyond network, develop new revenue source

- Structurally lower cost

1. Centralized intelligence, reduce nodes, improve 90% Operation efficiency;
2. Smart traffic scheduling, network utilization from 20% to 95%;
3. Network openness & virtualization, network sharing & QoS based traffic operation.

1. Network function by software, deployment and upgrade efficiency improves by 90%
2. Cloud architecture, above 3 times HW utilization
3. Long term: universal HW, leverage IT industry scale to lower cost

1. Cloud architecture, establish unlimited computation and storage capability, 10 times PPR
2. Develop strategic opportunity of IT service, laas for big enterprise and NaaS for SME. Public cloud market size $116B in 2016

1. E-commerce-like operation, 10+ times marketing and service efficiency
2. Extend new service content, specifically device sale and digital content distribution, an important opportunity for operator to have new revenue
Key Takeaways

- **Carrier Network Transformation Embraced:**
  Closed → Open, Complexity → Simplicity, Controlling → Enabling

- Structurally **optimize CapEx** and **OpEx** while **forming a cloud foundation** for a new value proposition in the digital eco-system

- IMS cloud-formation and Gi-LAN initiatives are under solid planning and development, a number of components are expected to be validated and deployed within 12 months

- COTS performance needs to be improved before being deployed in telecom service scenarios

- Cloud platform software needs cross capabilities over both CT and IT areas
Thank you

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