Building Strategic Partnerships with Telcos in ICT Transformation
Carrier Network BG CTO: Sanqi Li
Agenda

1. Achievement Overview
2. Market Outlook
3. Strategy Layout
Historical Achievements in Telco Industry

Revenue Growth ($B)

Market Share Growth

10X Mobile
9X IP
4X Fixed
Key Contributions to Telecom Industry

Successfully Led Three Major Telco Transformations in 2002 to 2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Technology Transformation</th>
</tr>
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<tbody>
<tr>
<td>2004</td>
<td>Distributed BTS</td>
</tr>
<tr>
<td>2005</td>
<td>SingleFAN (DSL/Fiber)</td>
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<tr>
<td>2006</td>
<td>All-IP Network</td>
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<tr>
<td>2007</td>
<td>SingleRAN</td>
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<tr>
<td>2008</td>
<td>Cloud Computing</td>
</tr>
<tr>
<td>2009</td>
<td>OTN Standard</td>
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<tr>
<td>2010</td>
<td>Single Strategy</td>
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<tr>
<td>2011+</td>
<td>Softcom</td>
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</table>

Huawei Product and Solution Strategy Overview
Continually Innovate and Lead in Technology and Standard

- 30,000+ patents granted by 2012
  Top in granted LTE/LTE-A patents
- 5,000+ standard proposals submitted in 2012
  20%+ of all approved proposals in 3GPP LTE Core Specifications
- 180+ lead positions in 150+ standard bodies
Achievement in 2012

Revenue Breakdown

Highlight:
• 78 of 163 global LTE commercially launched networks
• 70+ 100G WDM commercial networks
• The Fastest-growing MS Provider, serving 120+ operators, managing 310+ million subs
• 500+ CSPs in 138 countries selected Huawei BSS & OSS
Industry Recognition in 2012

- “Most Significant Development for Commercial LTE Networks” and “Best LTE Core Network” by 2012 LTE World Summit

- “Best Broadband Access- Fixed” by InfoVision Award 2012
- “Next Generation Optical Awards” by 2012 IRR (Institute for International Research)
- “Solution Excellence Award” by 2012 TM forum
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A Digital Tsunami is on its Way...

- 2B Internet Users
- 3.4% GDP in 14 Countries
- 21% ↑ GDP in Developed Countries
- 10% ↑ Productivity in SME

- Digital Transportation
- E-Health and E-Learning
- E-Government and M2M
- Impact 50% GDP by 2025
Ultra Broadband: Foundation of New Digital World

Fundamentals of telecom industry continue to be solid @ 3 to 5% annual growth
Disruptive Challenges to Telco Business

Business Model Today
- Saturated and Declining
- New Revenue Growth
- Cost and Efficiency

Business Model to be
- New Value proposition in Digital Age
- Social Networks
- Content Networks
- Virtual Networks
- M2M Networks
- Telco Networks
- Enterprise Networks
- Home Networks

TCO Structure Today
- Inefficient and Unsustainable

TCO Structure to be
- Optimized, Open, Automate and Agile

BB Policy in Digital Age
- • Today: Regulated and legacy-focused Heavy Asset vs. “0’ Asset (OTT)
- • Tomorrow: National Strategy on BB Infra. Critical Role in BIG Economy
Telco ICT Transformation Across Network, Operation, Business and Policy

<table>
<thead>
<tr>
<th>Policy</th>
<th>Reality Today</th>
<th>Transform Toward</th>
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<tbody>
<tr>
<td></td>
<td>• Fragment Spectrum</td>
<td>• Industry Promoter</td>
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<td></td>
<td>• Discord BB Policies</td>
<td>• Strategic Partner</td>
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<td></td>
<td>• Voice monopoly</td>
<td>• Business Consulting</td>
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<tr>
<td>Business</td>
<td>• Closed</td>
<td>• Solution Provider</td>
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<td></td>
<td>• Traditions</td>
<td>• Infrastructure Provider</td>
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<td></td>
<td>• Hard to Incent</td>
<td>• Equipment vendor</td>
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<td>Operation</td>
<td>• Rigid</td>
<td>• Joint Innovation</td>
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<tr>
<td></td>
<td>• Managed</td>
<td>• Managed Services</td>
</tr>
<tr>
<td></td>
<td>• High asset vs 0-asset</td>
<td>• System Integrator</td>
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<tr>
<td>Network</td>
<td>• Multi-Gen</td>
<td>• Interchange Provider</td>
</tr>
<tr>
<td></td>
<td>• Fragmented</td>
<td>• Control Decoupling</td>
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<tr>
<td></td>
<td>• Inefficient</td>
<td>• Protocol Centric</td>
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<td></td>
<td></td>
<td>• Ineffective QoS</td>
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<tr>
<td></td>
<td></td>
<td>• Embedded Control</td>
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Huawei has been enhancing its value propositions to best benefit carriers
Agenda

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Vision: Building Strategic Partnerships with Telcos
Strategy Guideline: Drive Sustainable Growth
Solution Strategy: Scale-Out and Scale-Up
Future Network Architecture Strategy: SoftCOM
Network Evolution Strategy: Single
Carrier Data Center Infrastructure Strategy: FusionSphere
Global Service Strategy: Operation-Centric → User-Centric
Business Platform Strategy: Digital Open Cloud
Close Loop Strategy: Ensure Telco Business Success
Strategic Vision: Building Strategic Partnerships with Telcos in ICT Transformation

- **Trusted Partnership**
  - Actively engage in telco business transformation

- **Collaborative Consulting**
  - Develop solutions across equipment, software and services in forming eco-system

- **Approachable Leadership**
  - Be customer-centric and drive industry forward

- **Bottom Line Execution**
  - Achieve operational excellence and maintain sustainable growth
### Lead in Network Infrastructure
- 6% CAGR in Revenue
- FBB No.1 and MBB No.2
- 15% CAGR in software and services
- Solution lead in LTE, IP, MS and CEM

### Best Business Partnership
- No.1 in Asia, Africa, L.A. and Russia
- Establish second home base in Europe
- Major player in Japan and Korea

### Responsible Employees
- Customer-centric & empowerment culture
- Proactive and collaborative teamwork
- Talented and innovative individuals

### Globalized Organization
- Internationalized → Globalized
- Process-based and market-driven
- Driving operational excellence
Solution Strategy: Scale-Out and Scale-Up

- **Scale-Out**: Horizontal Control/Management Aggregation across network segments
- **Scale-Up**: Vertical Functional Integration across Network, Operation and Business
- **Migration**: Integration and Innovation without Disruption
- **Core Technology**: Cloud, SDN, Big Data and Advanced Chips

<table>
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<tr>
<th>Business</th>
<th>Operation</th>
<th>Network</th>
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Scale-Up: Closed and Controlling → Open and Enabling
Complicated and Manual → Simplified and Automated

Scale-Out: Complicated and Manual → Simplified and Automated
Future Network Architecture Strategy: SoftCOM

Build Cloud-based and Software-Defined Network Solution Framework

- **Network Control Logically Centralized:** Abstraction, Programmability and Optimization (SDN)
- **Network Function Software Modularized:** Elastic, Simplified and Robust (NfV)
- **Operation Management Automation:** On-demand, Real-Time, UX enrichment (Cloud OS)
- **Business Service Enabling:** Orchestration, API, Agile and Monetization (Cloud Platform)

Engage with Carriers in Migration Path with SDN, NfV and Cloud Initiatives
Network Evolution Strategy: Single

- Constantly minimize cost of network migration across multi-gen technologies
- Continually innovate and lead in bandwidth, performance and capacity (Data Plane)

Single Strategy Overview

- Unified equipment platform across multi-gen
- Masked protocol complexity and interwork
- Key in-house chips for optimal performance

- LTE-A/B/C
  - >5Gbps@Peak
  - >10Mbps@Edge

- G.Fast
  - 1Gbps@100m
  - >1Gbps per HH

- 400 Gbps per λ
- 1 Tbps per λ
- 100 Tbps OTN

- 400 Gbps per port
- 2 Tbps per slot
- 1000 Tbps router
Carrier Data Center Infrastructure Strategy: FusionSphere

• Continue to invest in Carrier Cloud OS with enhanced management automation
• Focus on Carrier Specifics in distributed data centers across WAN infrastructure
• Support SDN and NfV Initiatives and IDC/EDC IaaS offering
Global Services Strategy: Operation-Centric → User-Centric

- Solve Telco's 80% OpEx bottleneck through integration, professional services and managed services
- Transform operation model:
  - Network Operation Centric → Customer Experience Centric (CEM):
    - Inward rigid processing driven → Outward agile business driven
- Explore business insight for new value proposition w/ big data analytics across network, contents and users
## Business Platform Strategy: Digital Open Cloud

- Create New Value Proposition in digital ecosystem
- Unleash Telco Core Capabilities to complement and monetize enhanced services
- Enrich User Experiences for differentiated service delivery
- Engage with Carriers to form various solutions using the Open, Agile and Lean framework

<table>
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<tr>
<th>Digital Open Cloud</th>
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<tr>
<td>Service Enabling</td>
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<tr>
<td>New Value Proposition</td>
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<td>API Mngt</td>
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<td>Monetization</td>
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<td>Management Automation</td>
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<td>Service Orchestration</td>
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<td>Big Data Analytics</td>
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<td>SoA</td>
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<td>Identity</td>
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<td>Location</td>
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<td>Presence</td>
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<td>QoE</td>
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<td>On-Demand</td>
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<td>Billing</td>
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Digital  | Service  | Ecosystem
Close-Loop Strategy: Ensure Telco Business Success

- Create New Value Proposition across network, operation and business
- Engage with Carrier CXOs to Co-Innovate through business transformation

[Diagram showing the relationship between Business, Operation, Network, MBB, FBB, Telco IT, and Global Service]

Strategic Partner
Business Consulting
Solution Provider
# Summary

## Build Strategic Partnerships with Telcos
- Trusted partnership in business success
- Collaborative consulting in solution delivery
- Approachable leadership in driving industry forward
- Operational excellence

## Drive Sustainable Growth
- 6% CAGR in revenue
- FBB #1 and MBB #2
- 15% CAGR in software and services
- From box-driven to solution-driven
- #1 in Asia, Africa, LA and Russia
- Second home base in Europe

## Lead ICT Transformation
- Invest in SoftCOM and lead network migration
- Provide advanced solutions across network, operation and business
- Focus on telco 80% OpEx issues and business transformation
- Strengthen on solution, SI, MS and business consulting
- Industry promoter in BB policy and strategy
Thank you

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