

Managing Clouds, Smart Networks and Services

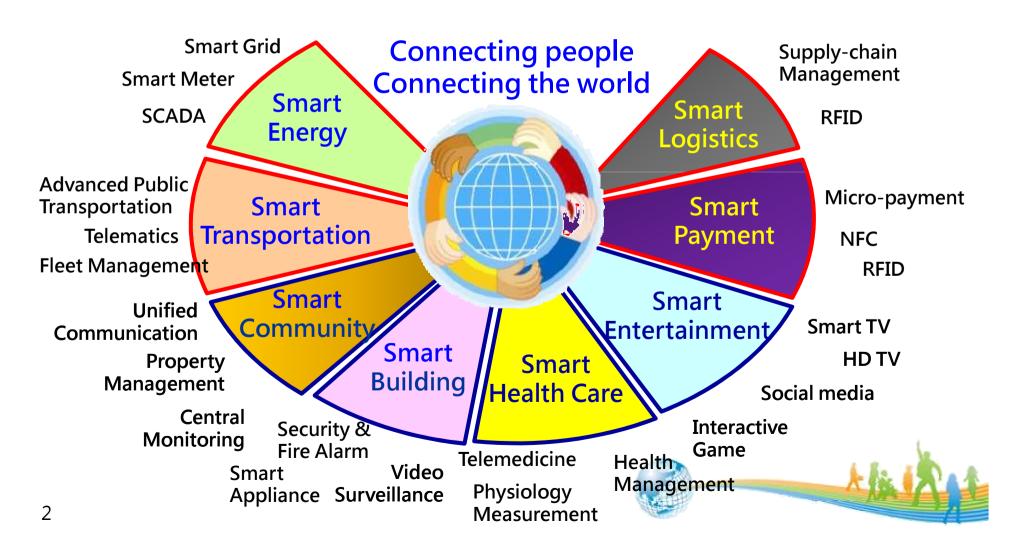
Rong-Syh Lin Chunghwa Telecom Co., LTD. 2011.9.23



Prosperous and Colorful Era

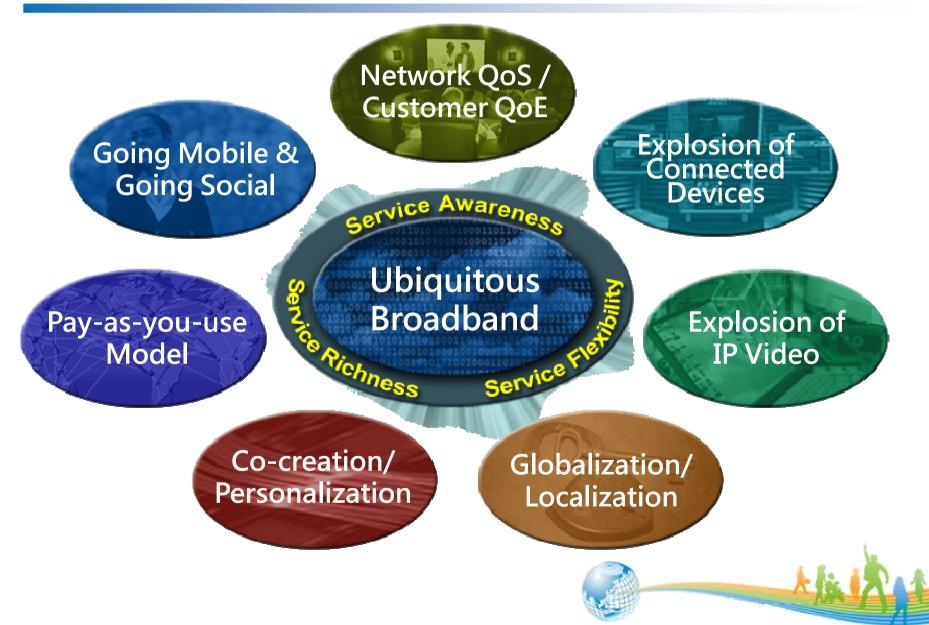
- Smart City
- Smart Home

- Smart Business
- Smart Individual





Key Drivers of Change





Telco Transformation

Telecom industry no longer just telecom industry

- Telecommunication services need to become integrated services across different industry.
- Industry competition and cooperation extended.

Telecom Operators no longer just telecom carriers

 From the traditional telecommunications service providers to become a full service solutions providers.

Telecom services not only telecom services

- Telecommunications services are new customercentric lifestyle services.
- Create a living environment for ubiquity.

Service management

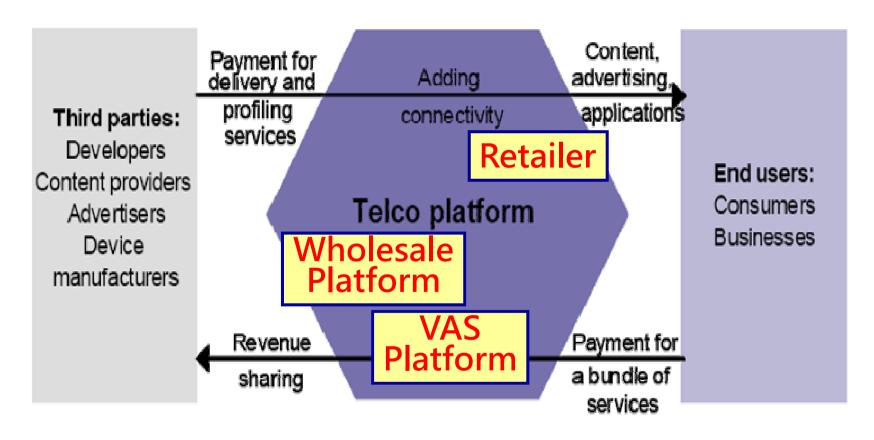
- Open platform, multi-service platform.
- Open is King! Sharing is Key!





Telco's 2-sided Business Model

Getting paid by upstream partners as well as downstream end-users



Source: Ovum



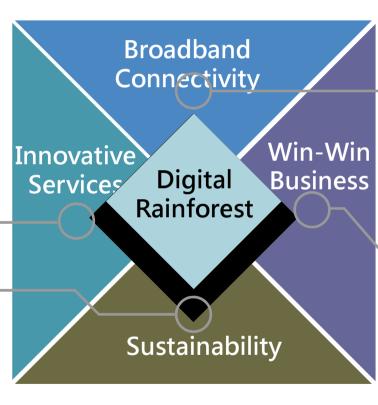


The Theme: Digital Rainforest

-An Enabler of Prospering Digital Economy Ecosystem

- ■Promote digital services powered by ICT Platform
- ■Customer-aware multiscreen services, e.g., IPTV

- ■Green by ICT, Green with ICT, Green of ICT
- Promote Smart Green services



■xPON

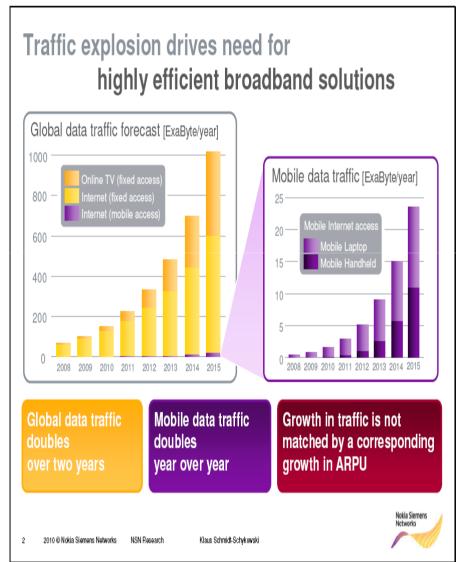
■Enhance 3G HSPA+ and offload data traffic via WiFi

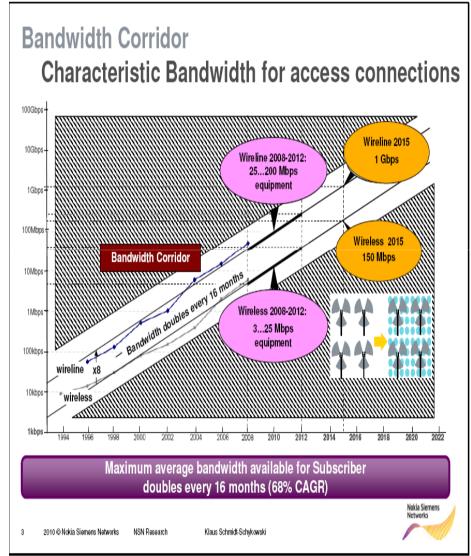
■Evolve to LTE

■Collaborate with strategic partners to develop digital services, e.g., Cloud platform, Mobile Hami Book/App Stores, etc.



Traffic Explosion vs. Bandwidth Upgrade





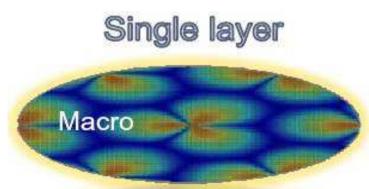




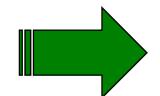


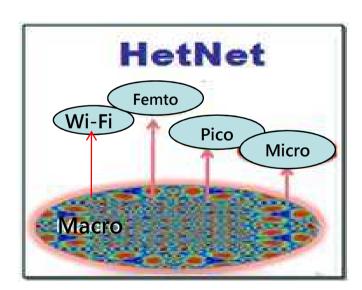
BB Network Architecture Evolution

- ■E.g., for mobile data explosion,
 - Heterogeneous Network: macro cell + small cell
 - 3G data off-load: WiFi/Femto introduction
 - Traffic Tide → Cloud-based resources adaptation



Multi-layer expansion





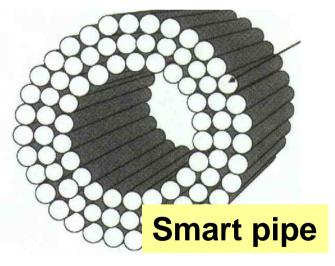




Bandwidth: Limited Resources

- QoS Policy Control
- **■** Differentiated package/tariff
 - → Customer Self-determined!
- New Pricing/Business Model







Customer-aware Innovative Services

- ■E.g., MOD(IPTV) for smart home application,
 - Home entertainment center

From watching TV to playing TV

MOD

TV Master On-demand,

Interactive





Existing TV

Passive



Example IPTV 2.0 Services

- Interactive (PVR, ADs)
- Personal/customized
- Multiple screens
- Customer-aware
- Integrated communication

More Funs

- Face TV
- Sharing for community
- Associated programs
 Internet content, UGC

Going Social



Friendly User-interface

Flexible Operation Support



- Open standard
- Monitoring interface
- Workflow management
- Cloud(storage, mining)
 - Flexible packages

- Touch panel
- HD interface
- Hot topics zone
- Widgets

