



International Telecommunication Union



Views on NGN Technology Trend

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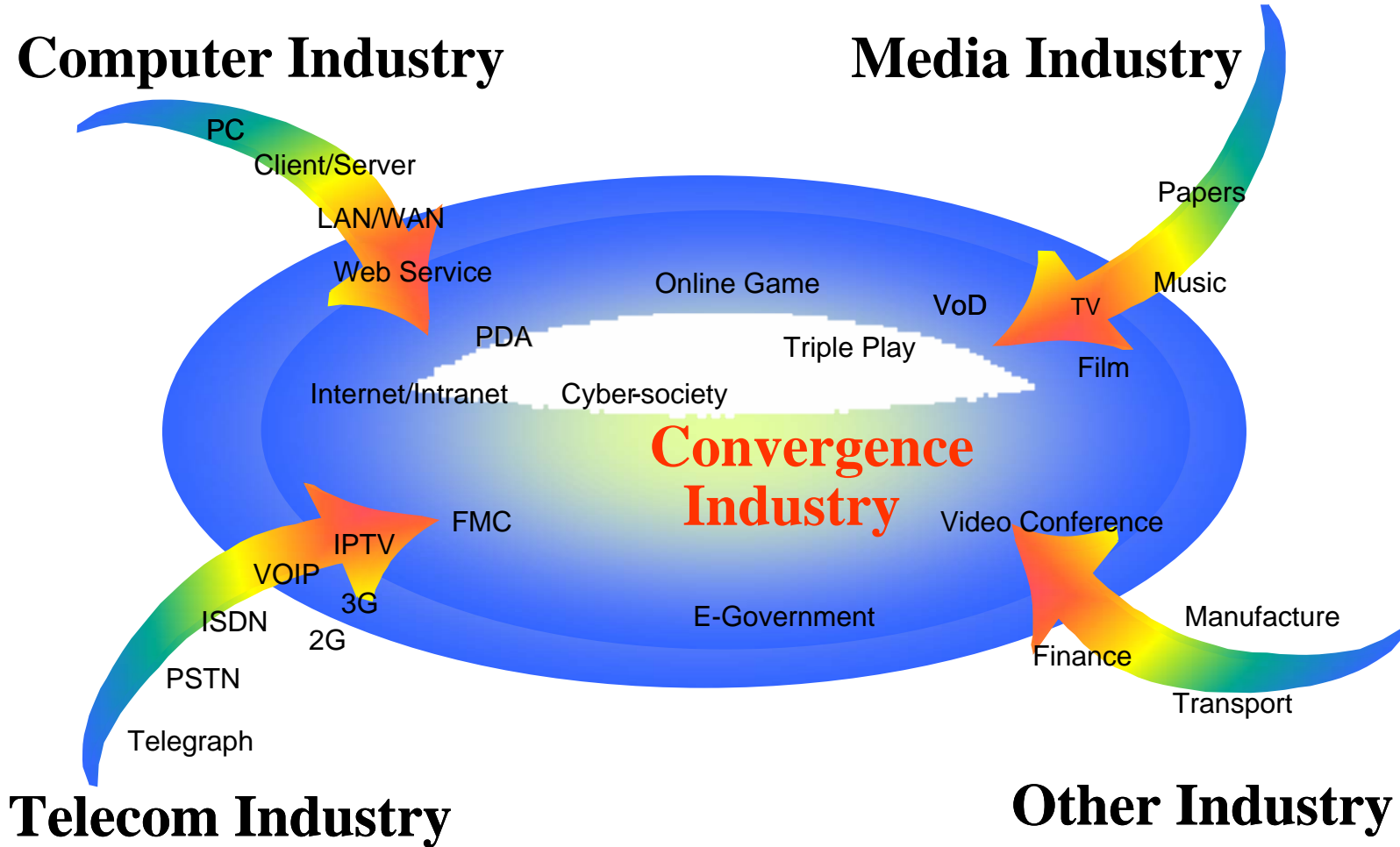
ITU-T/ITU-D Workshop "Standardization and Development of Next Generation Networks"
Dar es Salaam, 3-5 October 2006



New value chain is emerging

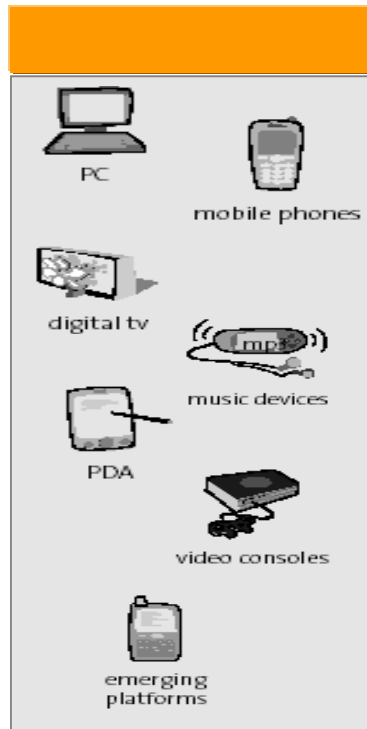


→ Convergence is the trend of telecom industry

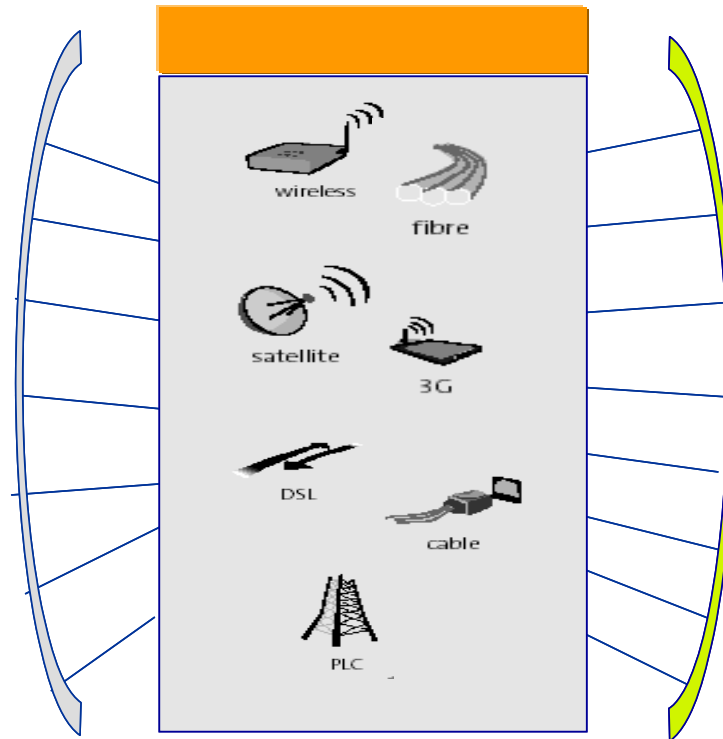


New business mode: Marketplace and Network OS

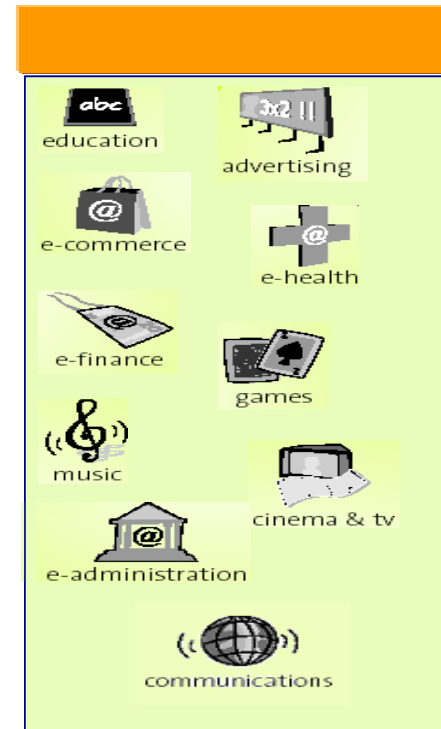
Terminals



Networks



Services and Content

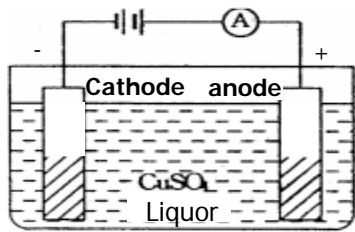




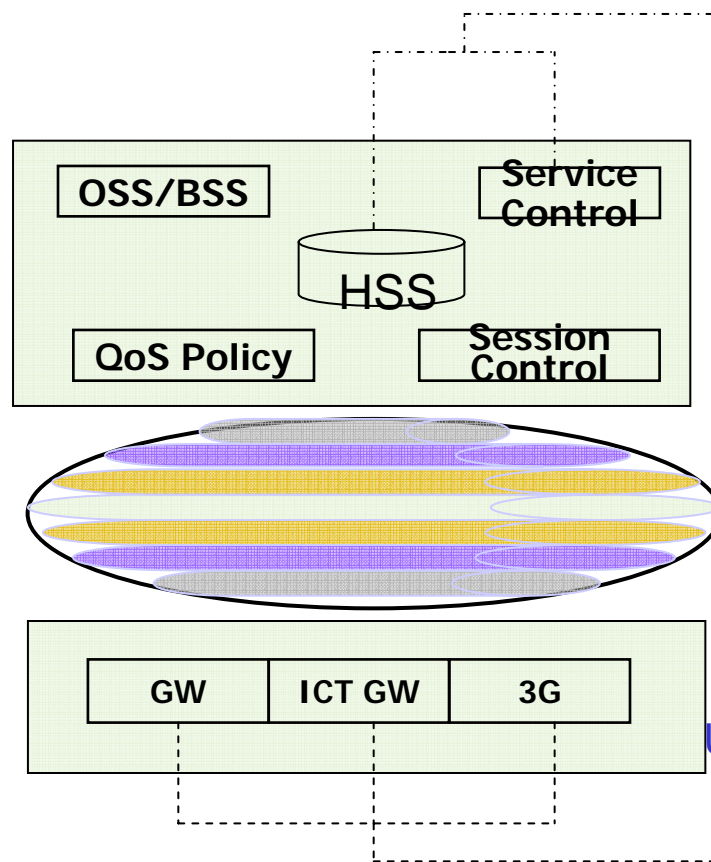
Triple Play: multi-media experience



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- Bearer network should support service based, QoS and security capability



Capability Open

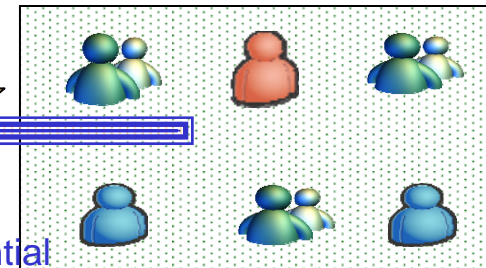
- User data
- Service interface
- Control capability



Millions Services

Value matching

Probe



User Open

- Residential
- Enterprise
- Personal

Millions subscribers



Key issues for new value chain



→ Convergence is happening

- Voice & Data convergence experience for customer;
- Fixed and Mobile network and services for carrier;
- Telecom and IT service and technology, business model for industry;

→ All IP network

- Voice Over IP/ Video Over IP
- Everything will be Over IP

→ Customer-oriented strategy is the direction for carriers

- Flexible and open architecture for convergence network
- A flexible service delivery platform for voice, multimedia and content on a wide range of terminals
- customer oriented management organization

→ Business environment is changing

- Value chain and value share
- Time to market





IMS: the Most Promising Technology



→ IMS will be the best way evolution to ALL IP network;

Single architecture support

Unified user data

Flexible service component

Flexible service combined

FMC/Full services support

Power VHE capability

IMS technology features:

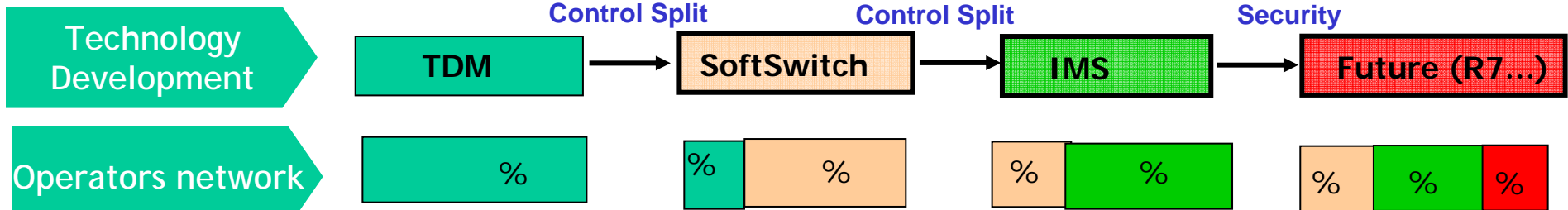
- Support session control and service control split, make core network simple ;
- Support fixed and mobile network unified user data management, make network more intelligent ;
- Support service capability and application open, new service deployment more flexible;
- Support combined service capability, so can support text, voice, data, multimedia service multiplay ;
- Support mobile , broadband, fixed network and all kinds network access ;
- Support VHE service capability, by CSCF (P/I/S) logical function and route function;



Future Telecom Network Evolution



Technology and standard is developing



Example for network coexisting at some time

Driver factor	SoftSwitch	IMS	Future(R7...)
Perfect network architecture		✓	✓
Full service support/Combined services		✓	✓
IP Multimedia service	✓	✓	✓
Reduce OPEX	✓	✓	✓
Unified User data		✓	✓
Traditional Voice	✓		
ALL-IP (QoS, all IP access)		✓	✓ (more)

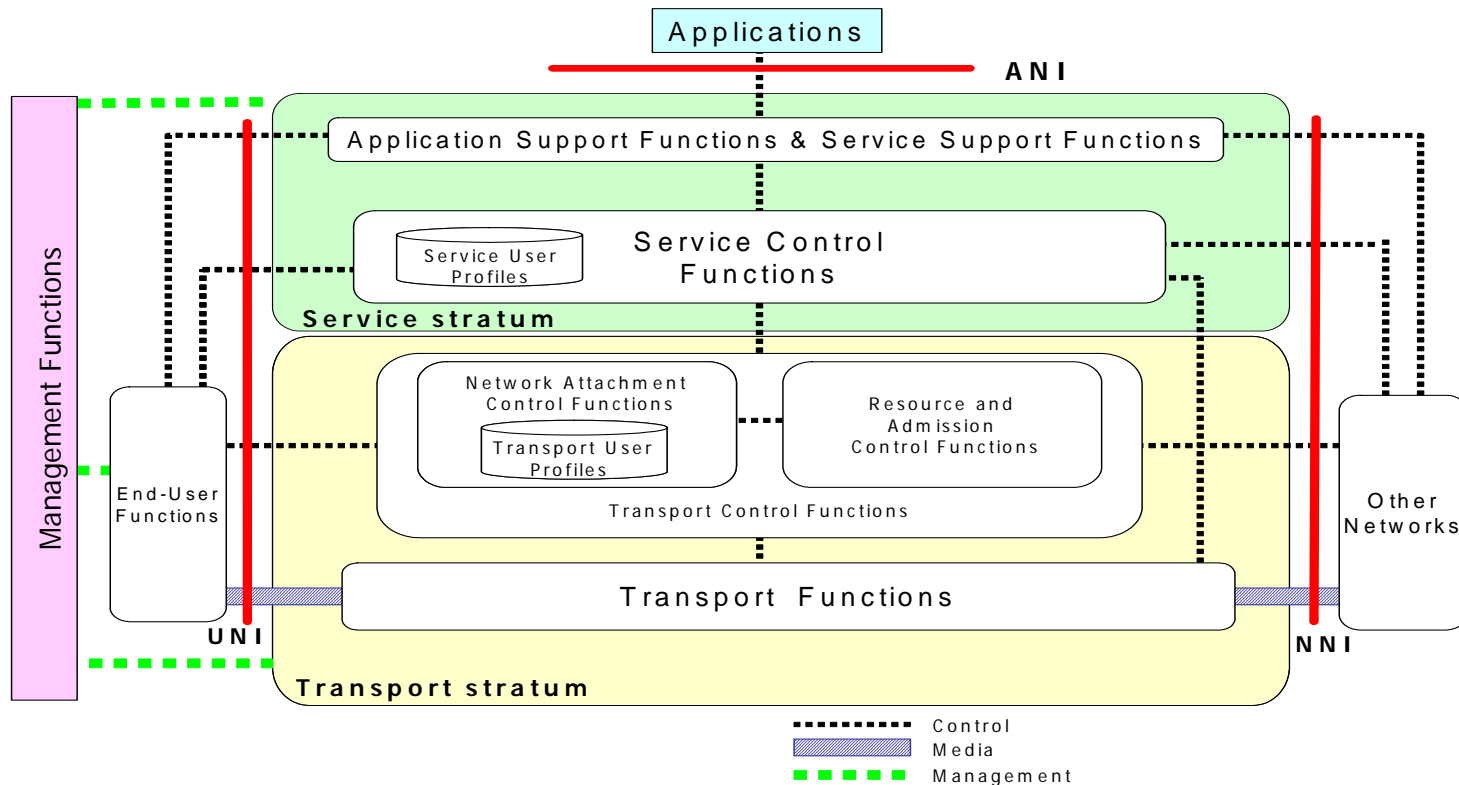
What's Next

- Multimedia services and IP TV solution integrated
- Legacy system and services support
- Combination services
- Enhance IP Centrex
- VCC (voice & video)
- Enhance CSI support
- ...



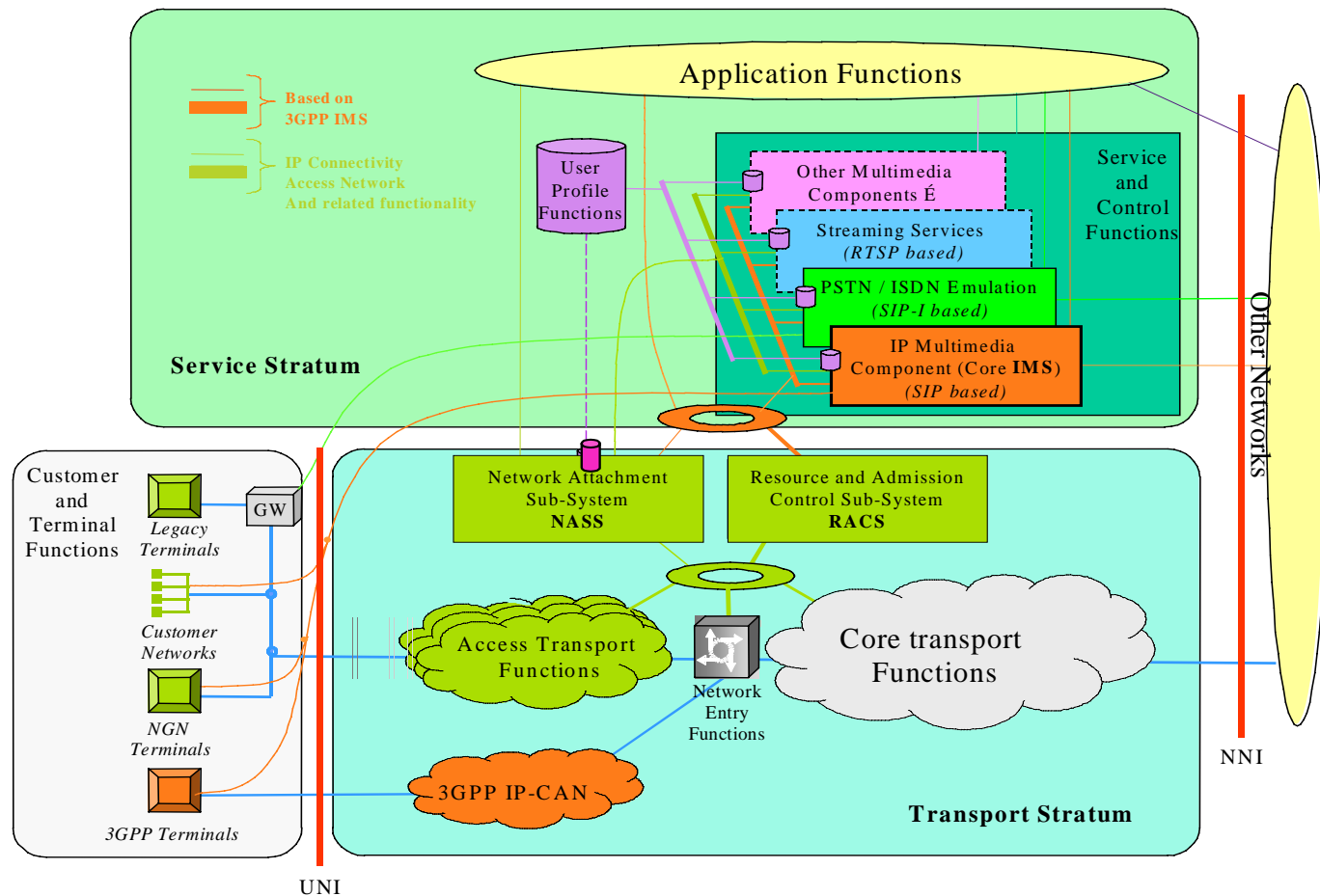


ITU-T NGN Architecture Overview



Note: UNI/NNI/ANI are not meant to represent any specific interfaces. (This type of note is written in TR-FRA word file.)

TISPAN NGN Architecture





NGN Vision



- o Secure and Convenient network featuring both the existing Fixed-Telephone Network and IP Network
- o IP-based network enabling
 - Guaranteed QoS
 - provisioning of seamless fixed & mobile services
 - provisioning of broadband Internet access, IP telephony, multicast communication for video distribution, bi-directional video (data) communication, & Ethernet services
- o Layered structure model for future technological and service flexibility
- o IMS-compliant service control functions
- o Open network (Network interface disclosure) ensuring security and interconnectivity with other carriers and ISPs.



NGN Key Features



- Targeted Functions (based on IPv4/v6 dual):
 - End-to-end quality control
 - Active control for voice & high-definition video services
 - IP multicast function for large-scale hi-resolution video distribution
 - Security functions
 - Multi-tier integrated technologies for service convergence
 - Open connectivity functions (e.g. Application tie-ups)
- Targeted Services:
 - Internet access, IP telephony, video distribution, corporate customer services, etc.
- Other:
 - Various services through tie-ups with IT-home appliance manufacturers and ASPs
 - Disclosure of network interface to other carriers and ISPs



NGN Core Network



- o Basic principles
 - Access independent Control Layer (IMS, AAA, mobility management, Policy Control & Charging, QoS, etc.)
 - All non-legacy IP broadband access systems connected to the core through the same interface (S1)
 - Access system independent Multiservice Edge Node
 - Inter-system mobility management integrated in IP core network
 - Common IP/GBE metro access network
 - Single IP core network transport

- o Customers' needs:
 - Seamless experience across technologies
 - One profile for multiple services



Operator's NGN Deployment Roadmap



Objectives: to be fully implemented at the year of 2010

- o (1) Develop and implement ubiquitous broadband service
- o by integrating fixed and mobile communications, etc.

- o (2) Build a high-quality next-generation network that is
- o flexible and secure

- o (3) Seamlessly migrate from existing fixed line telephones
- o to IP telephones and from copper wire systems to optical fibre
- o

- o (4) Expand business opportunities using ubiquitous
- o broadband service



NGN Standards Roadmap



2006Q3

2008Q3

2010Q3

2012Q3



- ❑ Requirement and functional architecture.
- ❑ Mainly support ADSL/WLAN access
- ❑ QoS covers access network.
- ❑ Mainly support VOIP service.
- ❑ PSTN/ISTN evolution.
- ❑ PSTN/ISTN simulation and emulation services
- ❑ Interworking with PSTN/ISDN
- ❑ Only few protocols are developed.

NGN trials

- ❑ IMS based control become the trend
- ❑ Clear Separation of Service stratum and Transport Stratum
- ❑ QoS control cover both access and Core network.
- ❑ Open API.
- ❑ IPTV and stream service are the killer applications.
- ❑ Most protocols are covered and developed.
- ❑ Protocol related to Resource control are the hot areas.
- ❑ NASS and RACS related standards are the hot areas.

Limited deployment

- ❑ IMS is the main control mechanism.
- ❑ Unified User database.
- ❑ Support variant access technologies including 3G and WIMAX.
- ❑ FMC
- ❑ End to end security is guaranteed.
- ❑ Protocols developed into mature stage and are ready to use.

Large scale deployment

- ❑ Super 3G is supported
- ❑ FTTH is supported
- ❑ Service data profile is separated from transport data profile
- ❑ IMS evolve to All IP network?

True Converge?



The End



Thank you for your attention!
(<http://www.huawei.com>)