



Vision and Outcomes of BcN

2007.7.23

NGN-EC²

**Broadband Convergence Network
Research Division**

Agenda

Megatrend

Key Technology Development

Epilogue



Megatrend



Digital Convergence



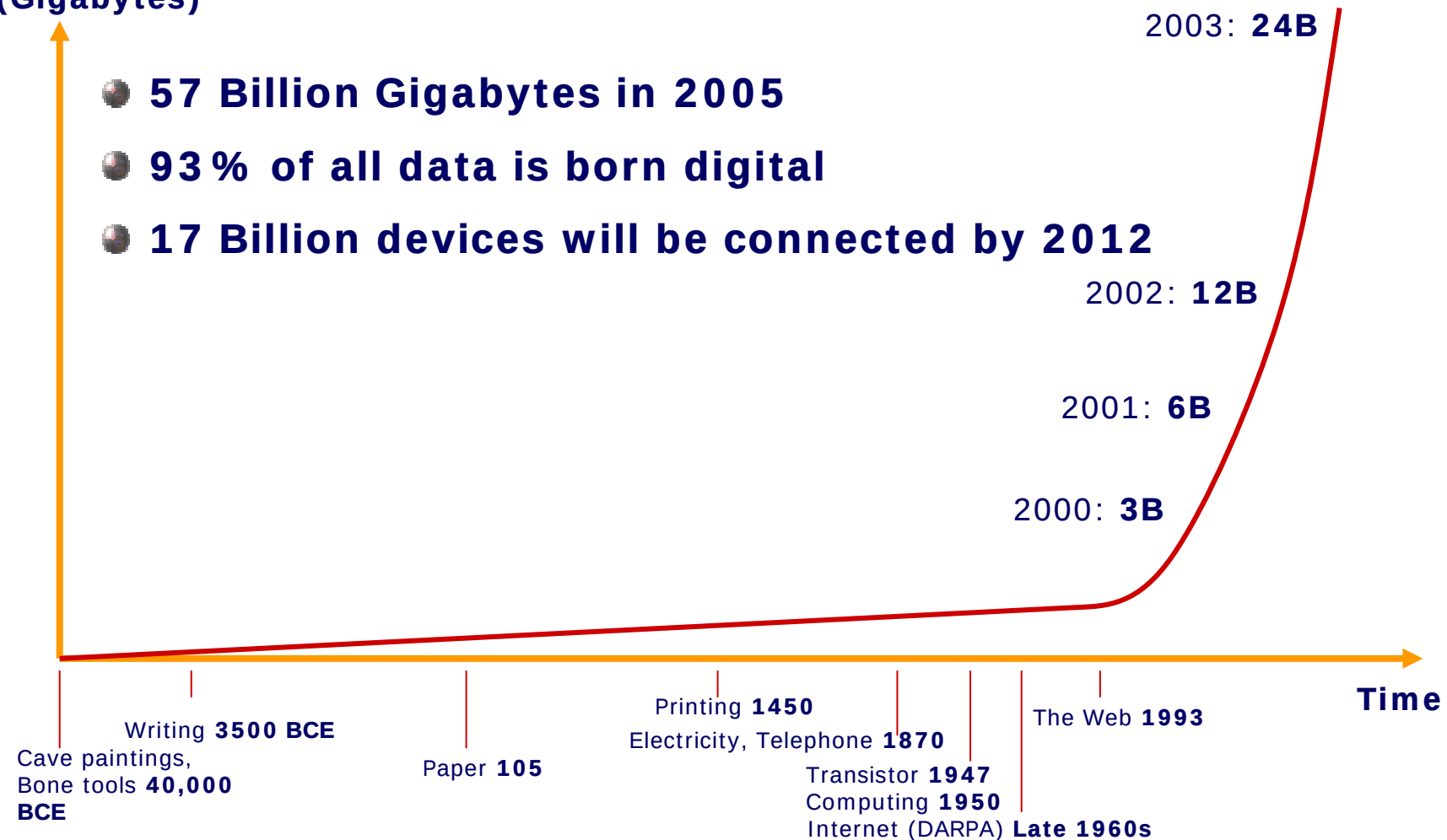
Personalization



Ubiquitous Computing

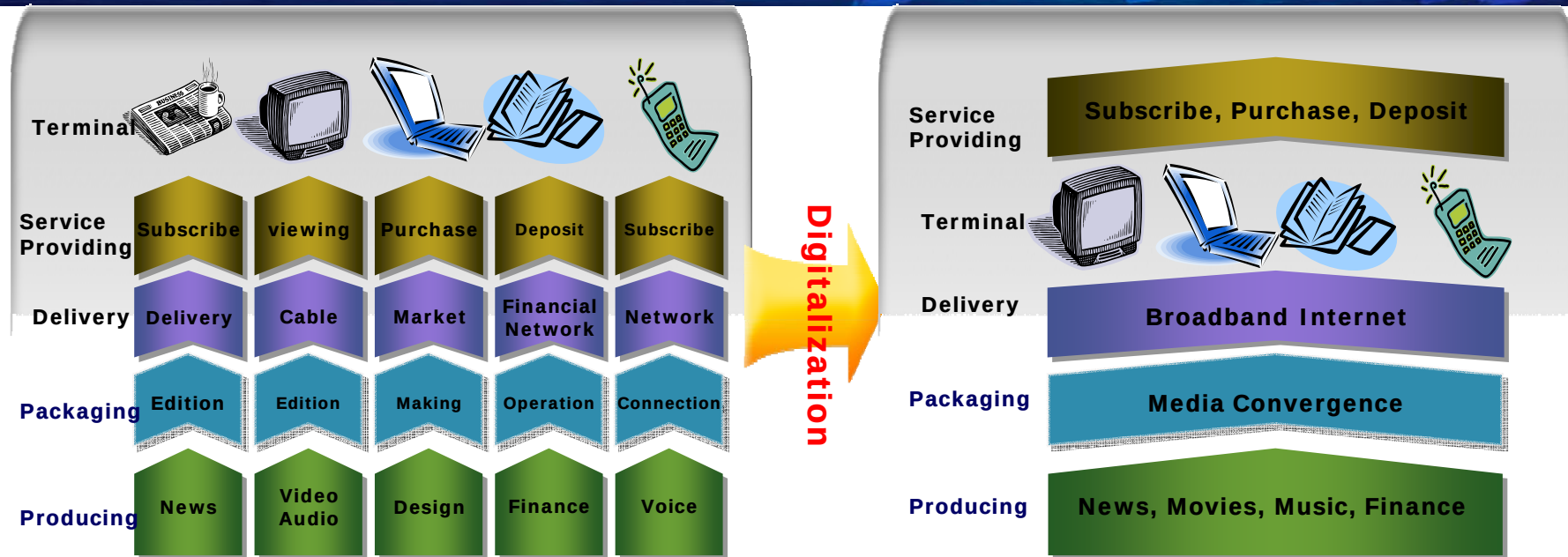
Digitized Information Explosion

Volume of data
(Gigabytes)

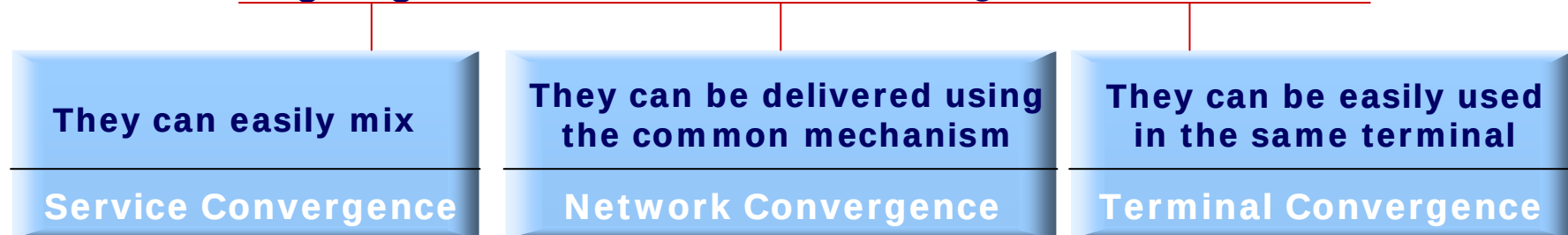


Source : UC Berkeley, School of information management and systems

Digitalization & Convergence



Being Digital: All information having the common format



Source : Business Implications of Digital Convergence, KT, Korea

Customers Want What ?

▶ Consumer behaviors in Ubiquitous Society

• “十人一色 時代”
1 Taste to 10 persons

- price competition
- brand competition
- reasonable consumer
- clever consumer



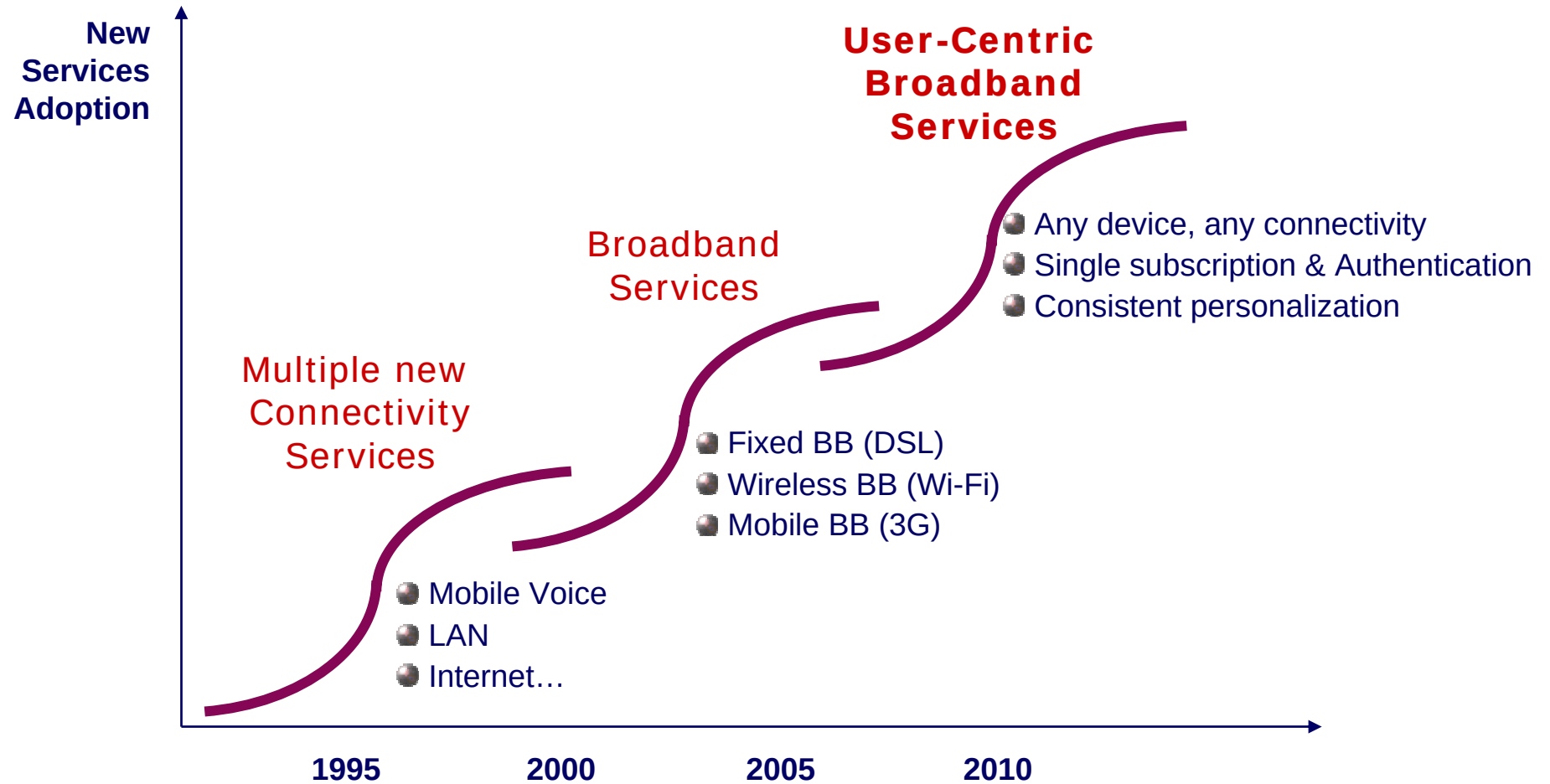
• “一人十色 時代”
10 Tastes to 1 person

- value competition
- personality competition
- emotional consumer
- profit-making prosumer

Tailored consumption that increases the value of individual!

- Personalization & Self-Customization

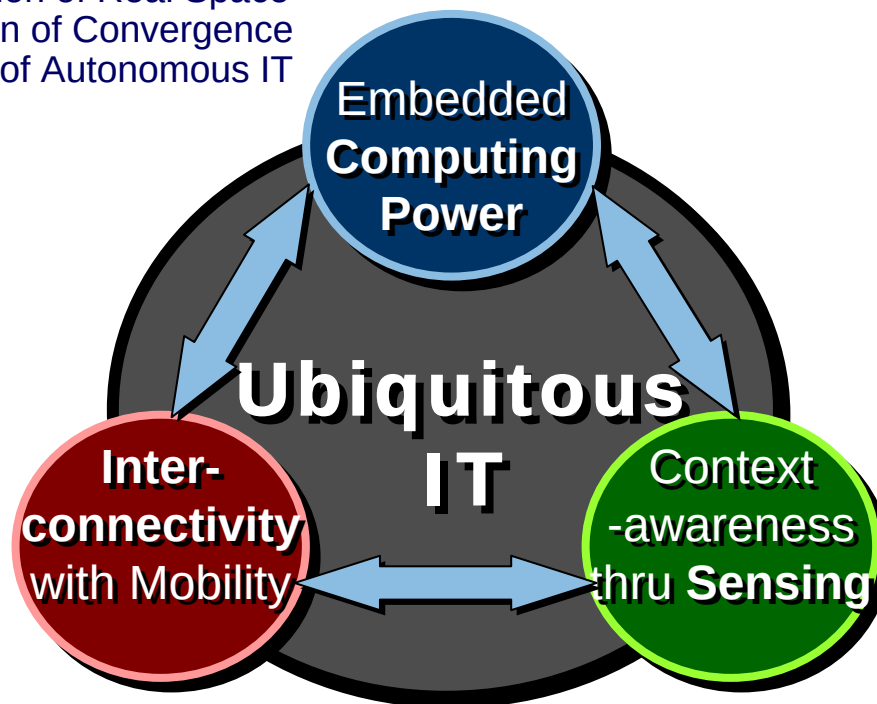
Service Towards Personalization



Source : User-Centric Broadband, Alcatel

Essence of Ubiquitous Technologies

- Integration of Computing and Things
- Augmentation of Real Space
- Acceleration of Convergence
- Expansion of Autonomous IT



Network Requirement

- Scalability
- Context-aware service
- Context-aware transport
- Secure connectivity
- Access independent mobility
- Efficient identity management

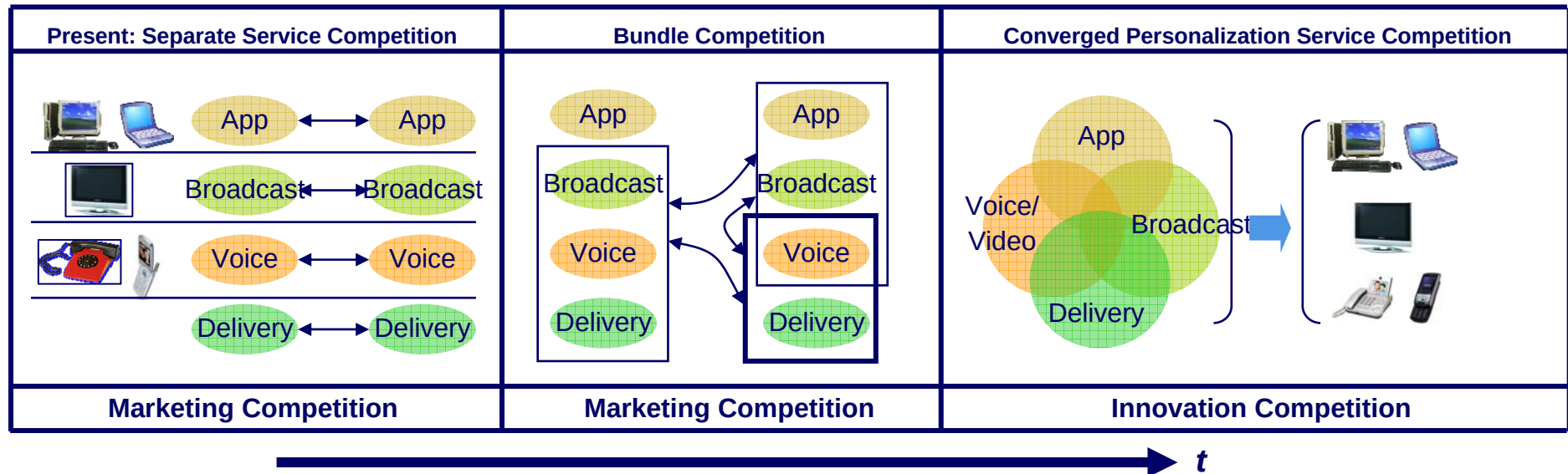
- Interconnectivity of All IT
- Increase of Nomadic Services

- Enhanced Context Recognition
- Paradigm Shift in IT Interfaces

Source : Vision and Prospectiveness of the Future Information Society, KISDI, Korea

Why the Network & Platform Again?

● Innovation Competition is awaiting



- Differentiation in the network capability
- Fast service creation / delivery platform
- Integrated platform for the upcoming converged services
- Holistic management & maintenance capability

Source : Business Implications of Digital Convergence, KT, Korea



Key Technology Development



Direction of R&D



Key Challenges & Roadmap



Key Results

Direction of R&D

Unlimited expression of users' personalities

- Recognize me !
- tailored services for me !
- unique service for me !

Reasonable pricing scheme

- pay for only that I use !
- pay only when guaranteed !

Preventing from negative effects

- Protect me !
- Let me trust you !
- Be simple enough for me !

Open service

Open API

Access authen., Service authorization

Service Mediation

SLA based unified billing

SLA management

Service policy management

Real-time mobility control

Service & Control

Broadband Access

Converged Access

Ubiquitous Access

Next-generation
Access

User/service recognition

Individual user/service-level QoS

Real-time usage monitoring

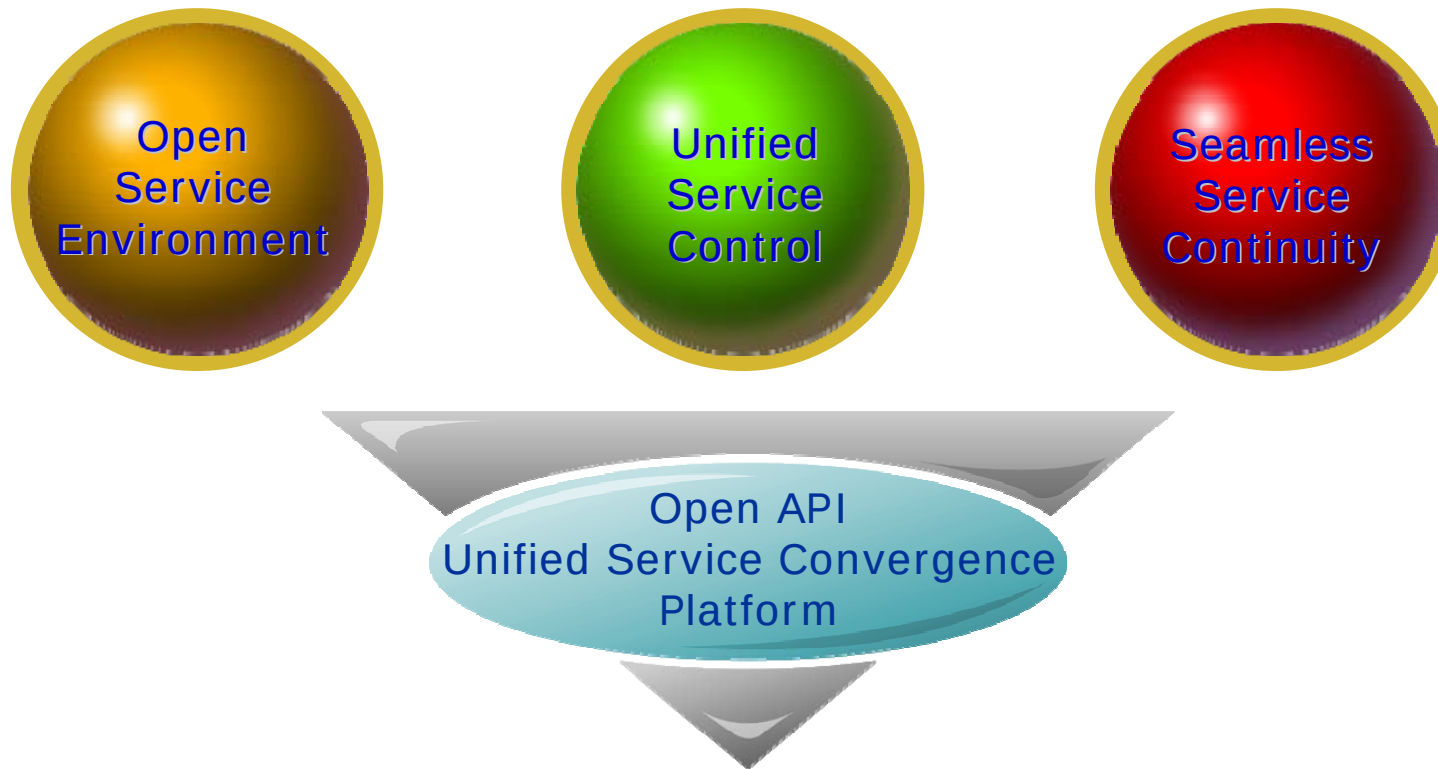
Real-time QoS monitoring

Network security

Network protection/ Reliability

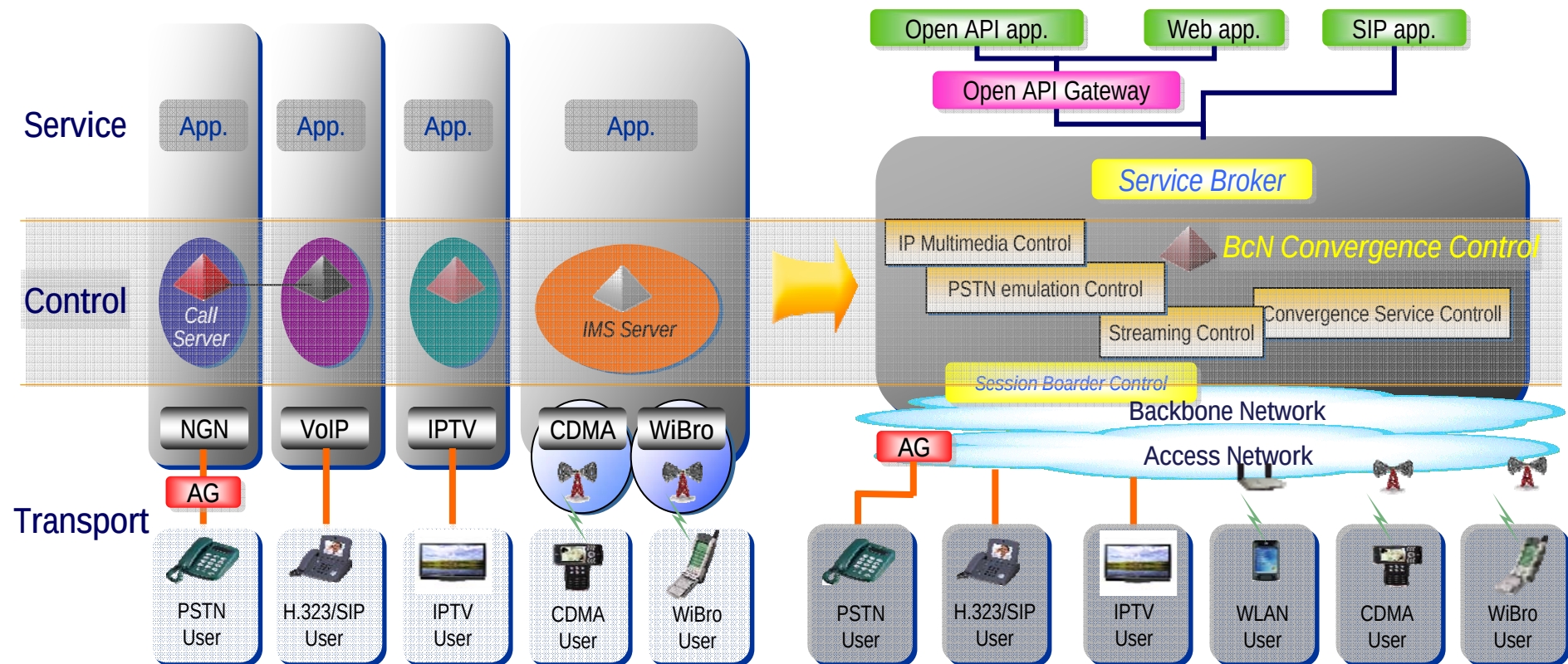
High performance
Unified transport

Challenge I: Seamless Convergence

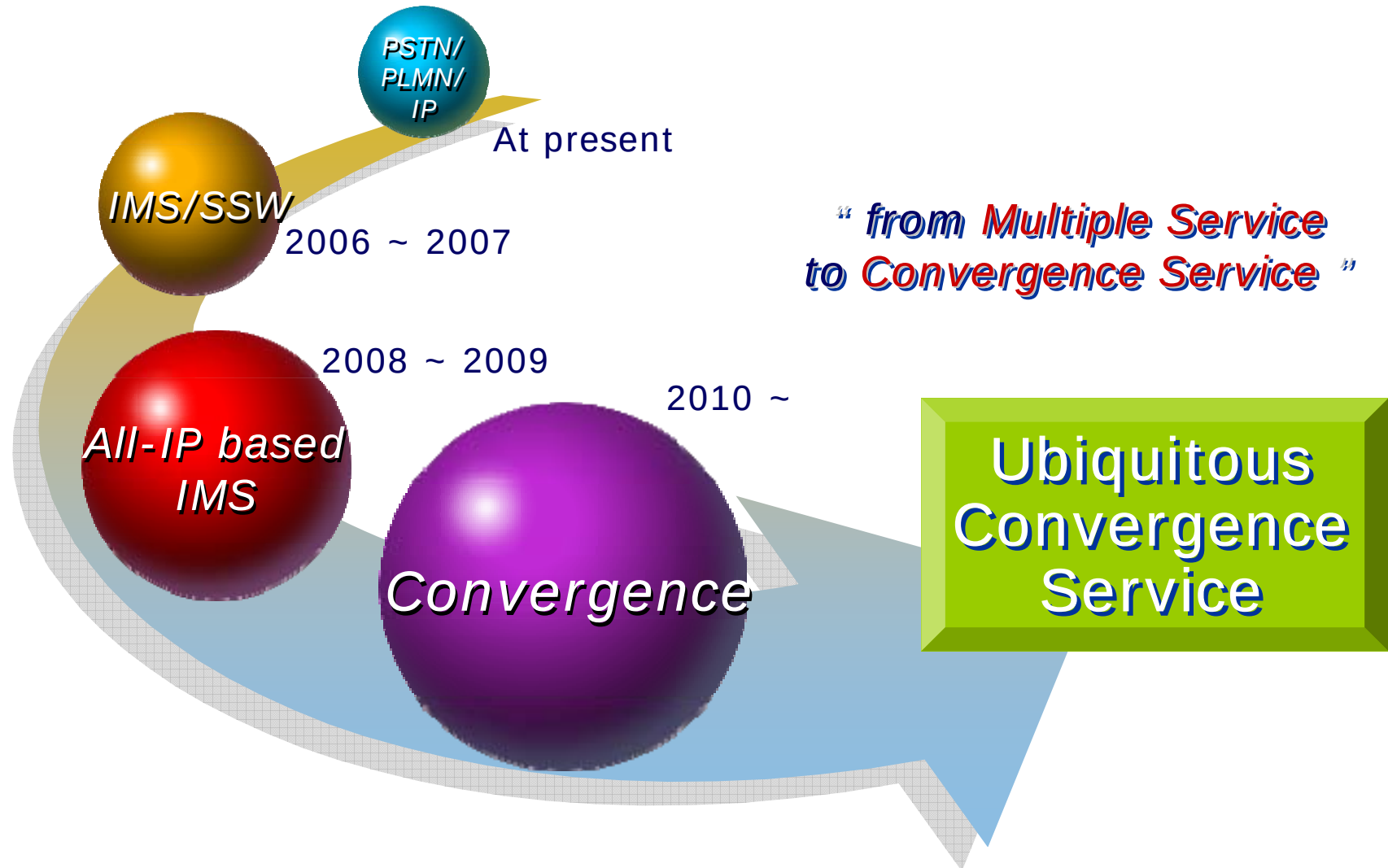


- network independent open services
- convergence services through unified service platform
- seamless service in anytime, anywhere

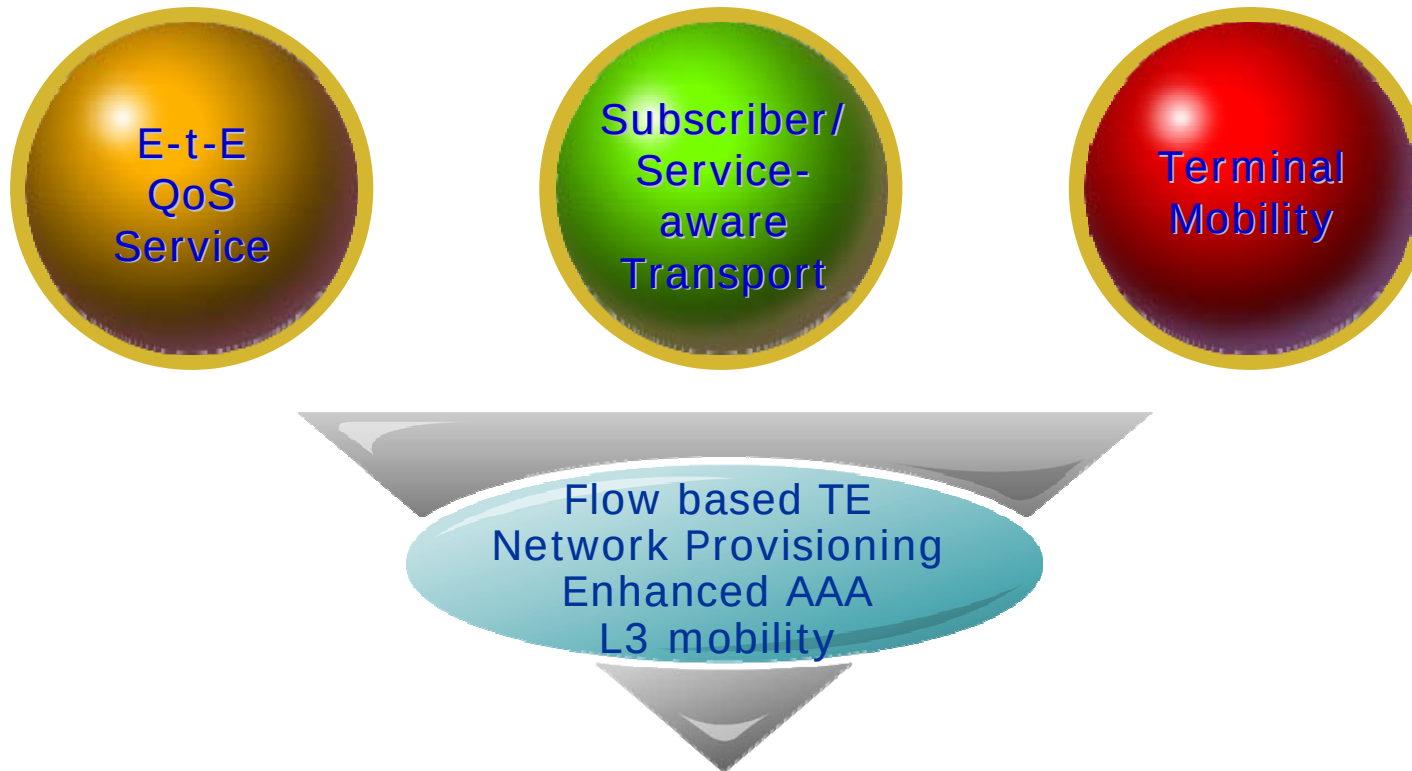
Convergence Control



Roadmap

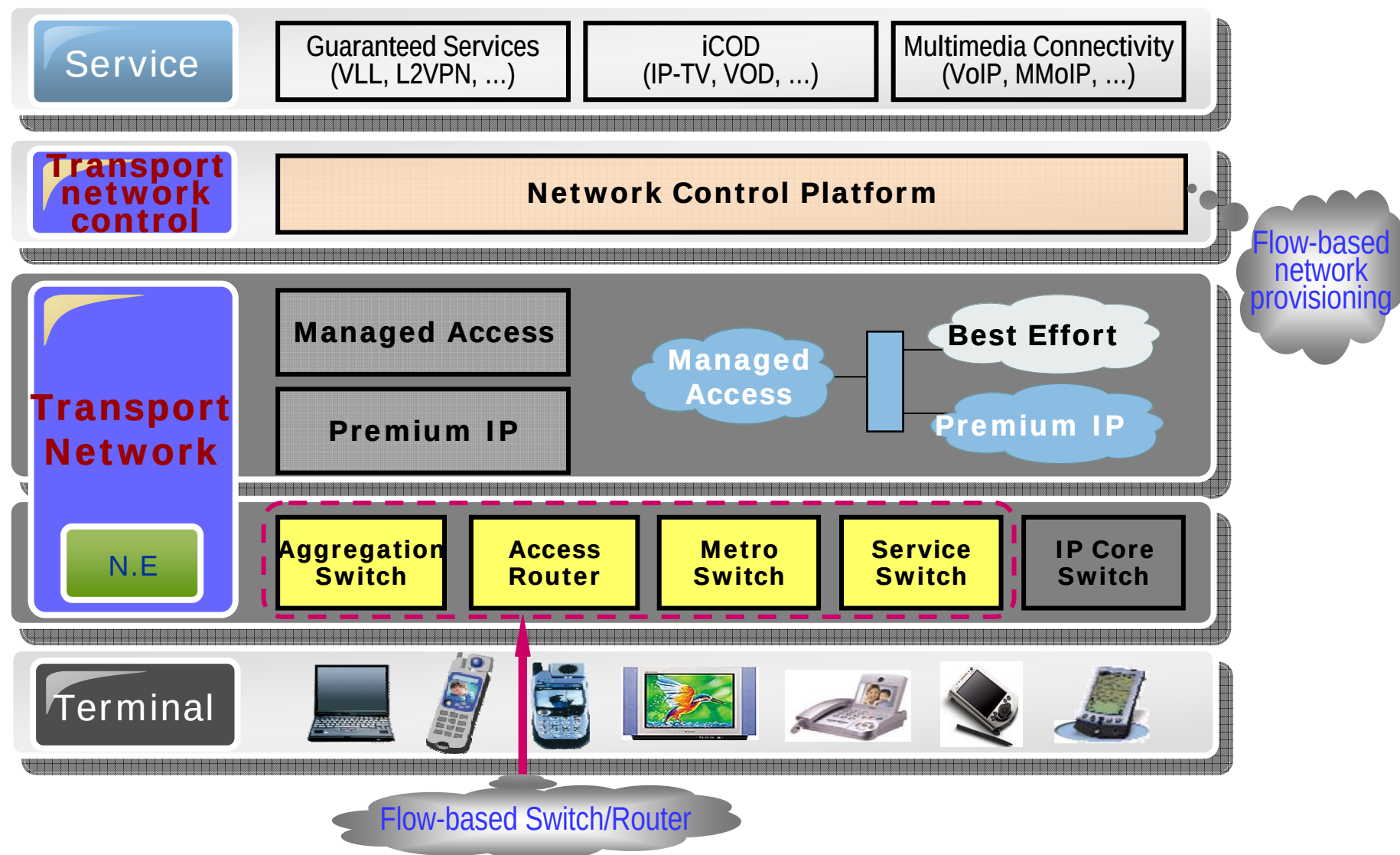


Challenge II: New IP Transport

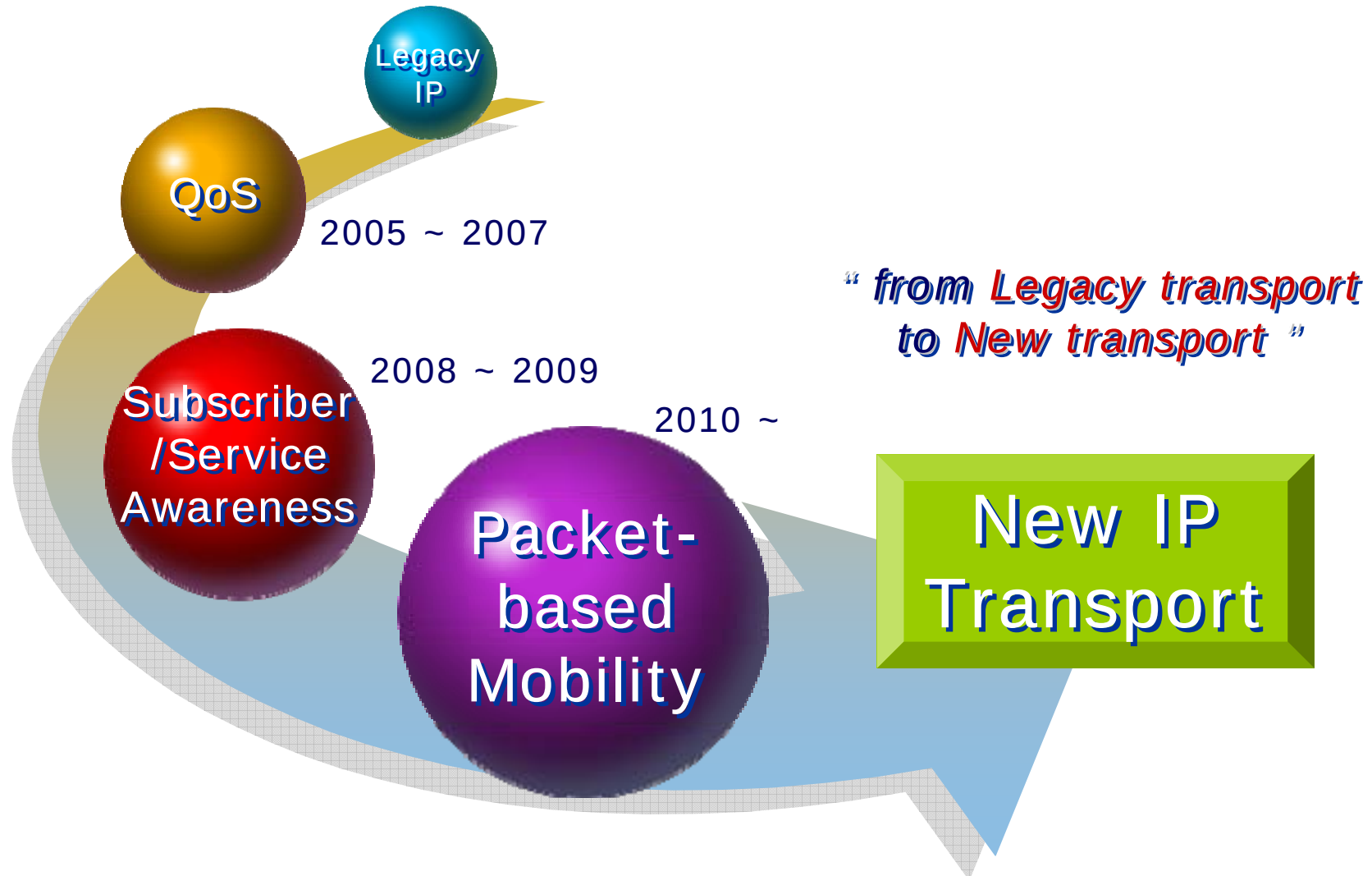


- Differentiated & personalized premium services
- E2E QoS incorporating legacy aggregation devices (IP-DSLAM, ...)
- Fast handover between different IP networks

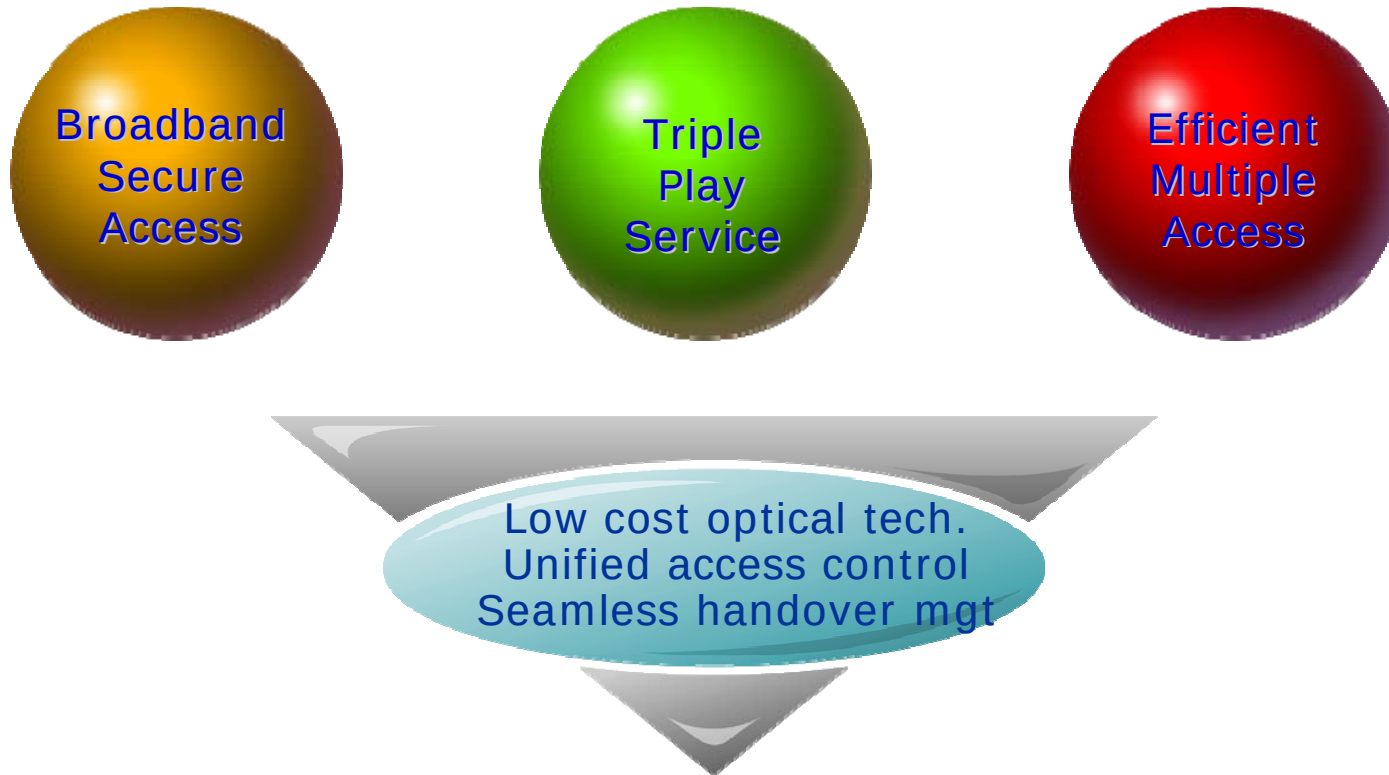
Managed IP Transport



Roadmap

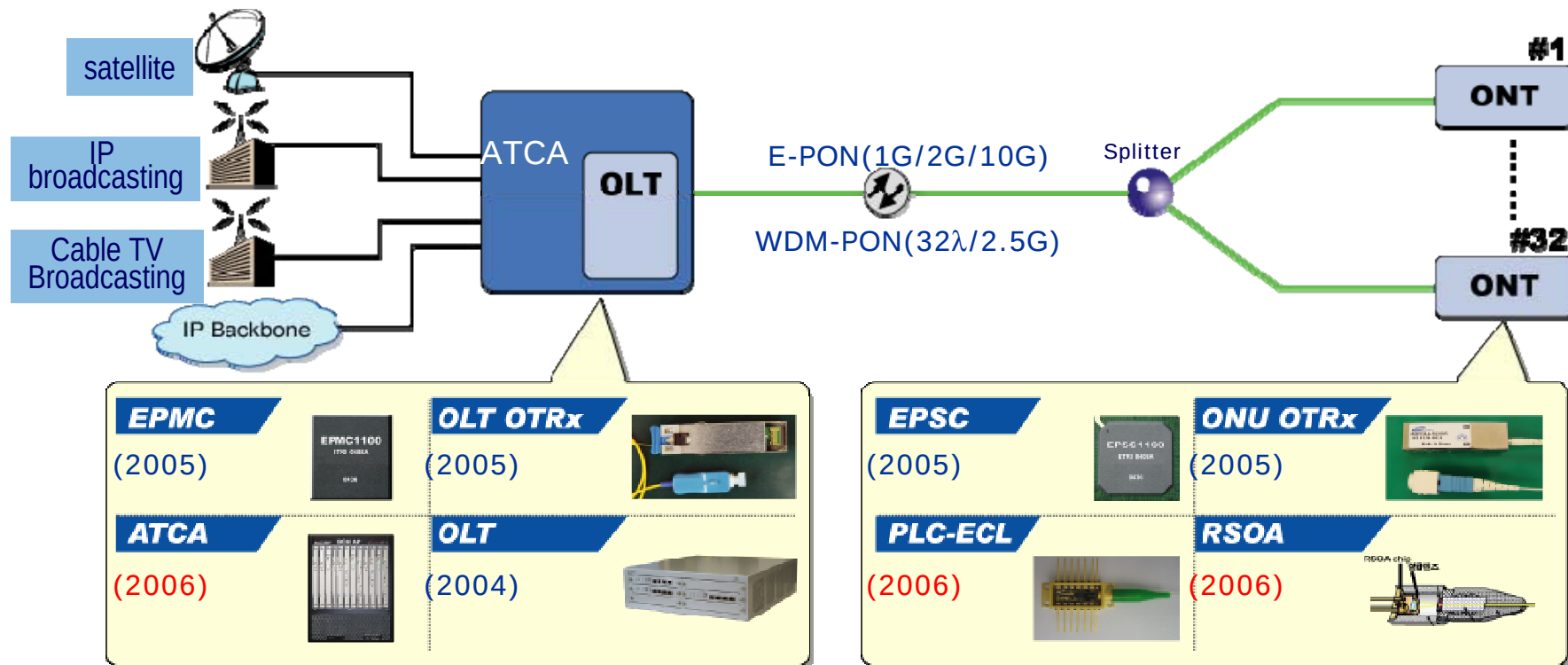


Challenge III: New Access



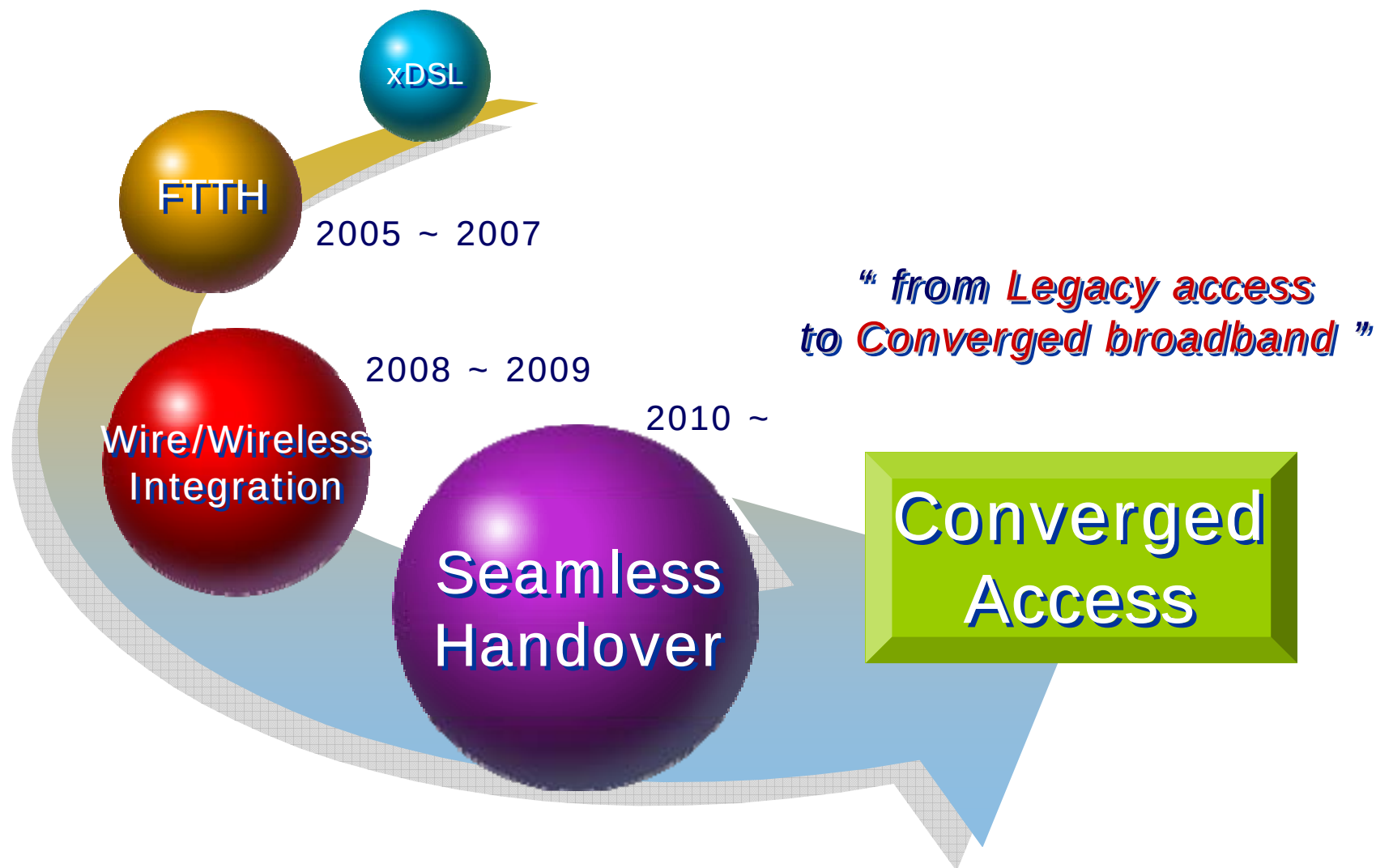
- Low-cost but high-speed access technologies
- Efficient accommodation of TPS
- Seamless handover between different access

FTTH Technology



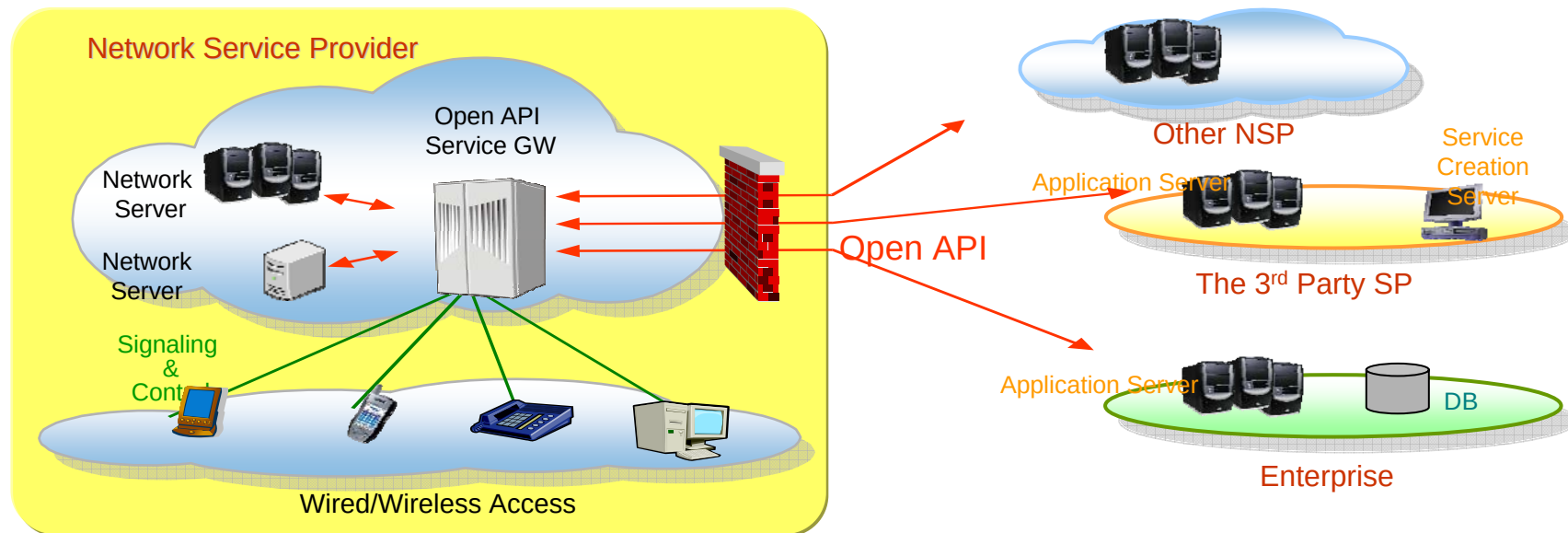
EPMC: Ethernet PON Master Control (OLT MAC ASIC) / EPSC: Ethernet PON Slave Control (ONU MAC ASIC)
 PLC-ECL: Planar Lightwave Circuit – External Cavity Laser / RSOA: Reflective Semiconductor Optical Amplifier
 ATCA: Advanced Telecom Computing Architecture / OTRx : Optical Transmitter and Receiver

Roadmap



Key Result: Open API

- Open API Interoperability Test
MSF GMI : '06.10, ETSI PlugTest : '06.9
- BcN Trial Services
KT : e-voting
LG Dacom : T-Banking Click Call,
Hanaro : Live Phone
- Commercial Services
KT : Biz- Phone ('06.6)., U2Phone ('06.9.)
LGT : Groupware Click call ('06.11.)
LG Dacom : IPTV-Banking Click Call ('06. 11)
- Standard :
Approval of multimedia multicast session management
(Parlay/3GPP, 3.9)



Key Result: NCP & QSR Series

NCP

Resource Mgt.
Per-flow control
Monitoring

- Developed : QSR series specific NCP
Intra-carrier NCP incorporating legacy NEs
- Planned : Inter-carrier NCP & Convergence NCP, Mobility

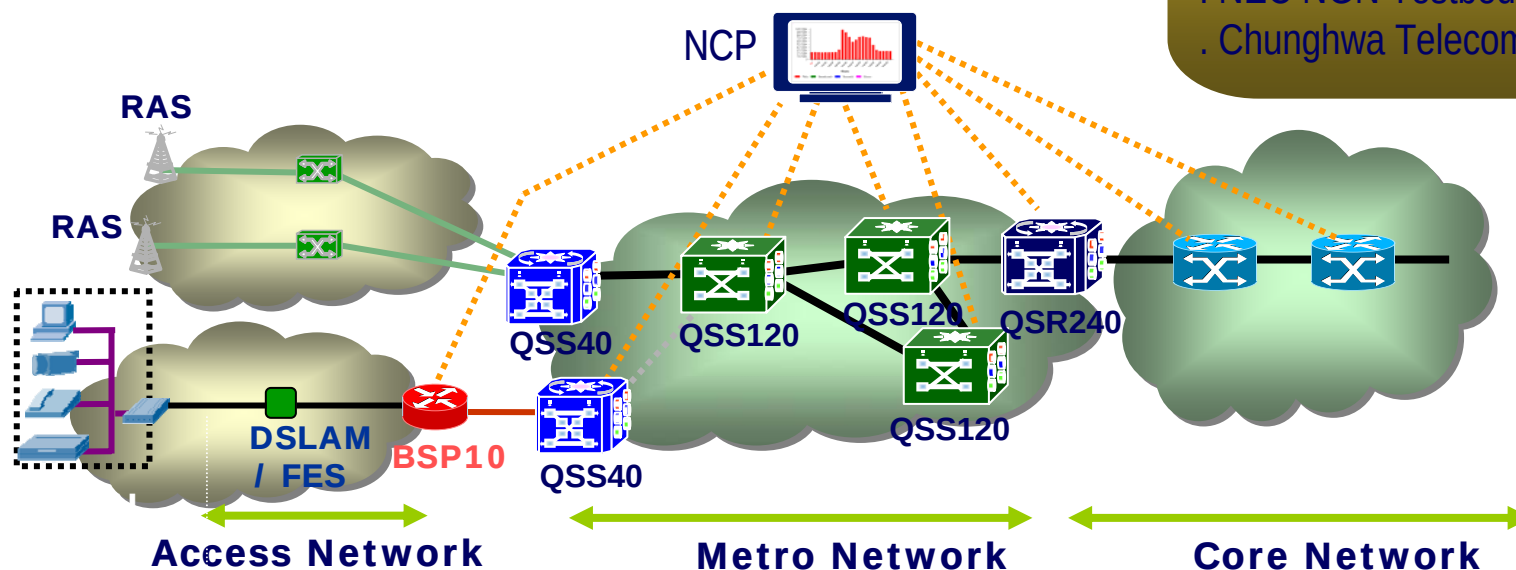
QSR

Flow-based forwarding
Edge service function

- Developed : QSS40/120, QSR240
- Planned : BSP10, Enhancing of QSS40/ QSR240

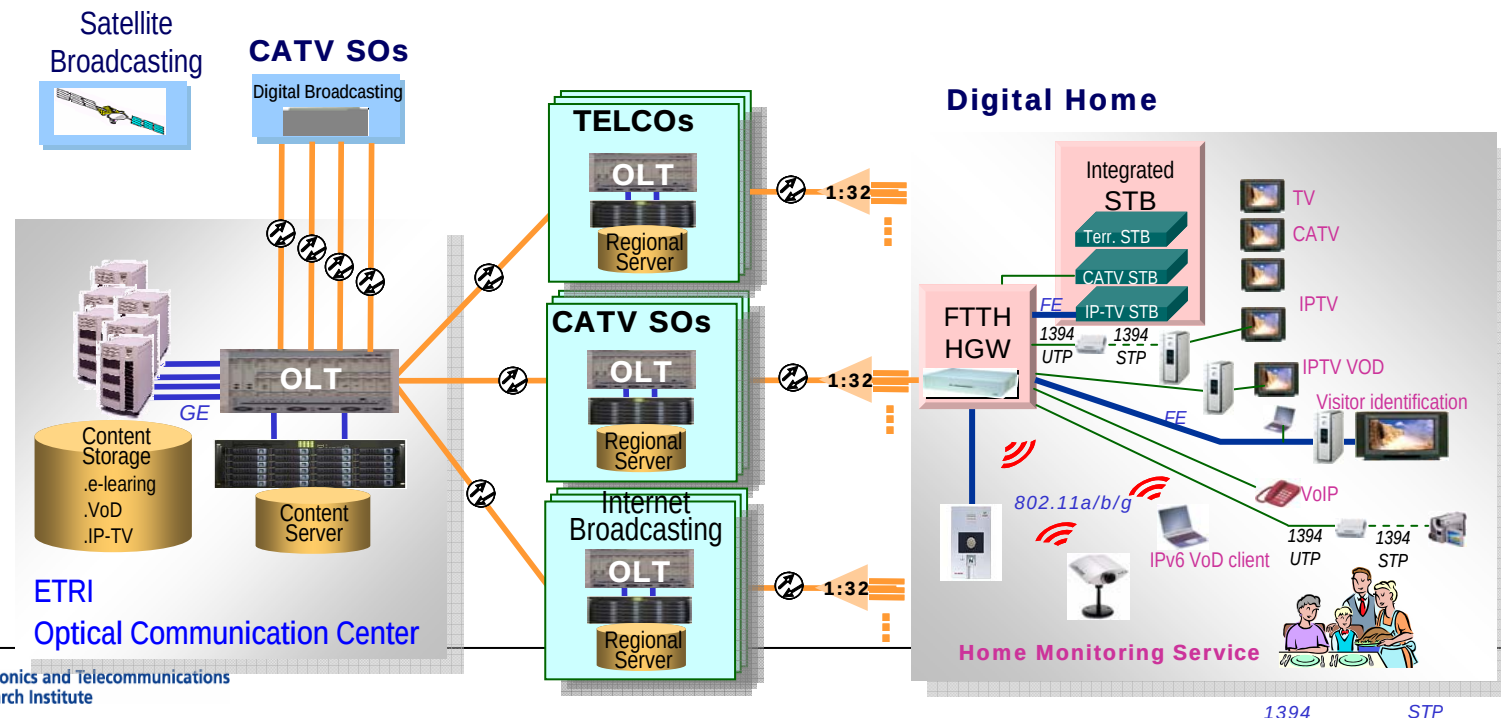
32 systems of QSRs have been installed by 2006

- . e-Government Network
- . ChinaNet.Com
- . NEC NGN Testbed
- . Chunghwa Telecom



Key Result: PON-based FTTH

- Deploying Optical Infra (2005~2008)
 - Applying R&D products : E-PON, WDM-PON, G-PON
 - 100Mbps TPS to 20,000 subscribers
- Commercialization of FTTH equipment & services (2005~2008)
- Building of Field Test-bed Network (2005~2009)



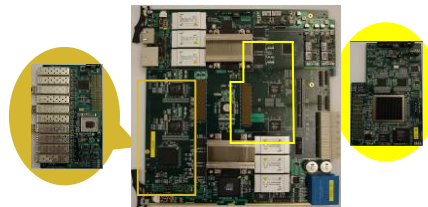
Key Result: other core technologies

Carrier class Ethernet

- Developing carrier class Ethernet transport architecture and functions
Contribution to ITU-T and IEEE 802
- Developed CCE50 10G I/O module, Commercial prototype expected
December 2007



CCE50



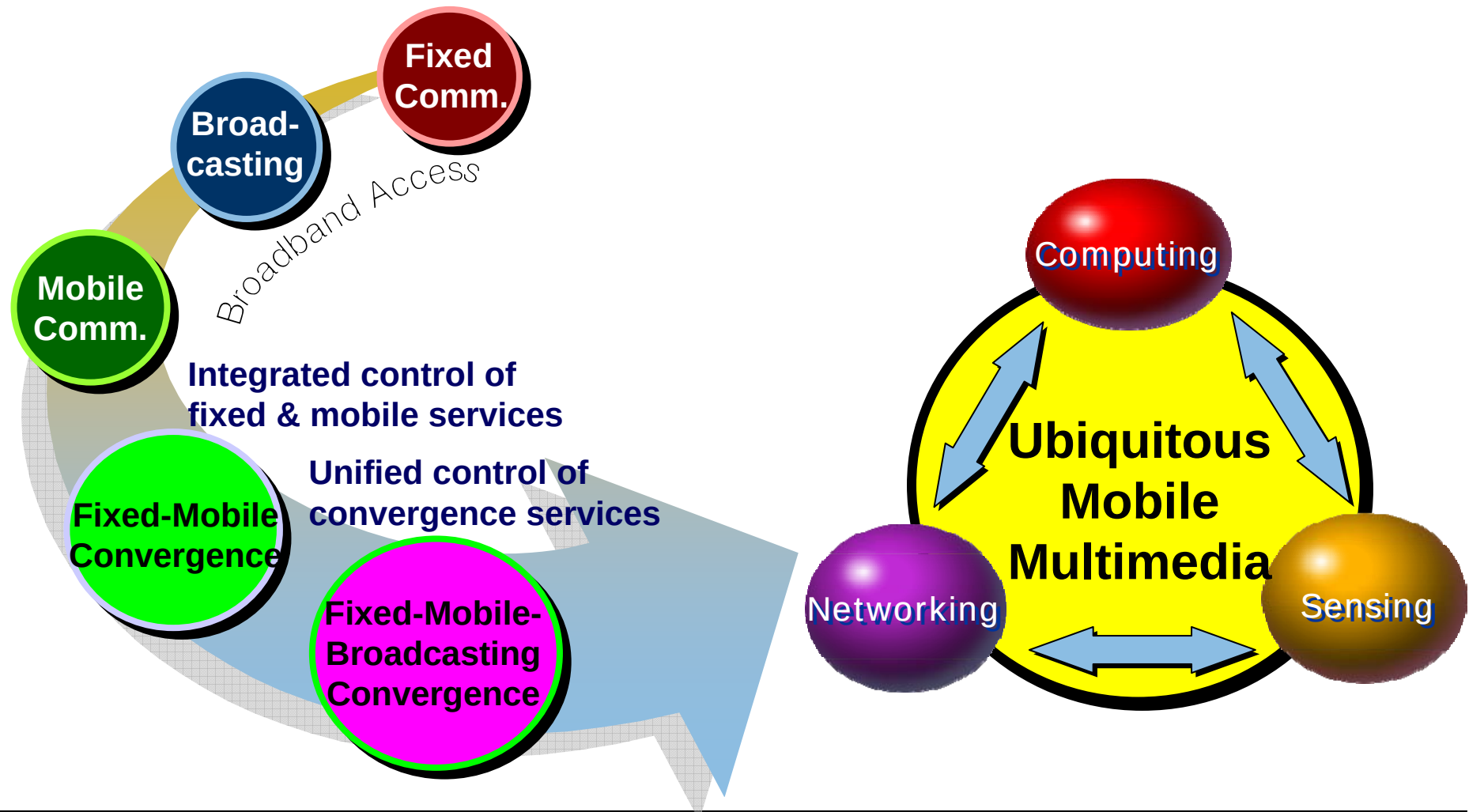
- Super wideband variable bandwidth multi codec
 - Support 8~64 Kbps variable bit rate
 - The result is reflected in ITU-T recommendation G.729.1
 - NDA with FT, NTT, Huawei, VoiceAge, Ericson, Nokia, Motorola



Epilogue

BcN R&D Vision

- Creating building blocks for u-Life Care Services



BcN Initiative

- BcN is a key infrastructure opening the era of
Ubiquitous mobile multimedia
- BcN initiative is an effort to make a new NGN solution for
Cost-effective and value-innovative infra
- To achieve BcN/NGN vision efficiently and effectively,
Global Collaboration is a must

Collaborative research topics
for technology development
and standardization :

- Integrated AAA
- Personalization Management
- FMC service control
- Packet based seamless mobility
- Flow-based TE
- Optical Transport



Thank You !

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Broadband Convergence Network
Research Division