ITU-APT Regional Seminar

BcN

(Broadband Convergence Network)

Inje University, Rep. Korea
ChulSoo Kim
10 Sep. 2004

Contents

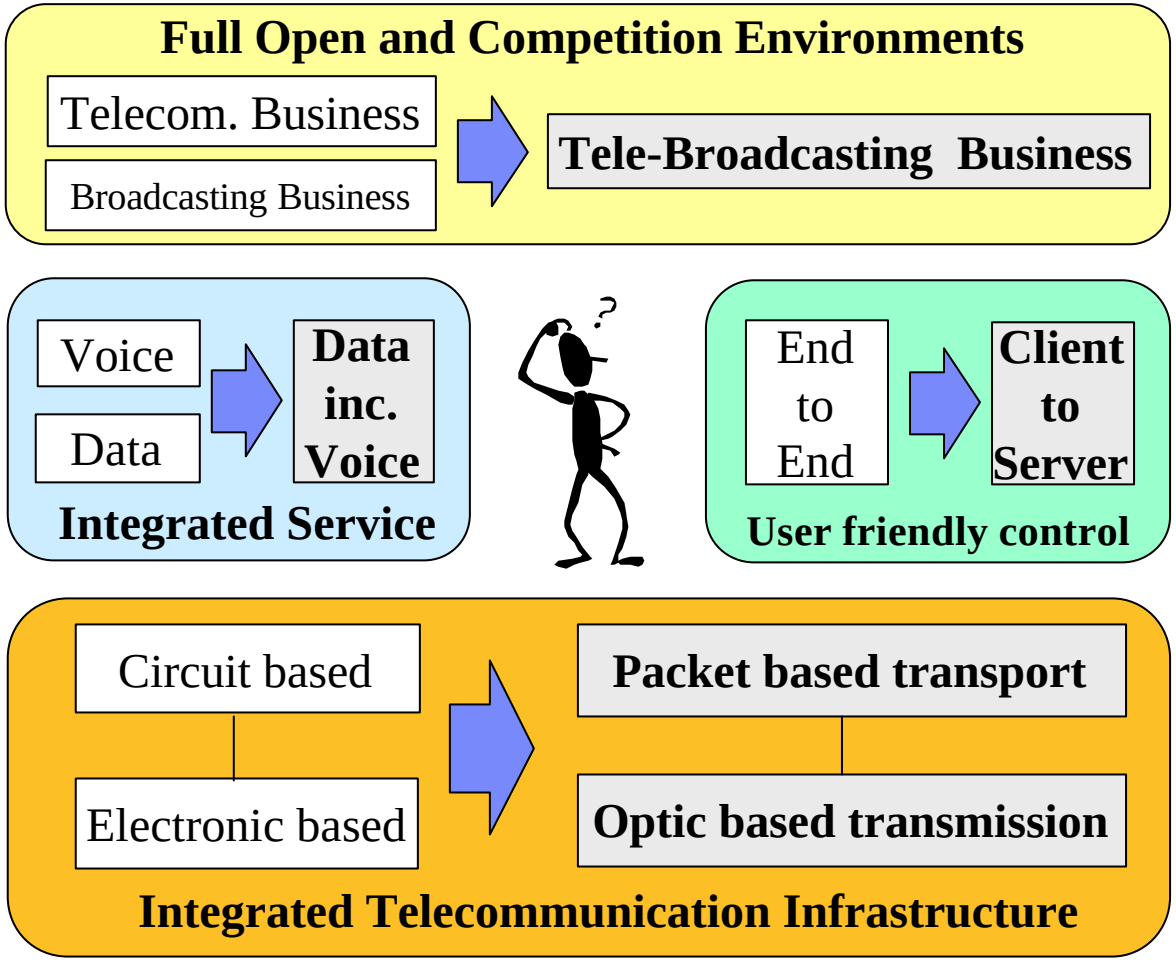
- PART ? . BcN Overview
- PART ? . Realization of BcN
- PART ? . Broadband of Wireless Access
- PART ? . Standard Model of BcN
- PART ? . Considerations

PART ? . BcN Overview

- Environment Analysis
- State of Broadband in Korea
- Definition of BcN
- General Architecture
- Development of User Equipments
- Vision
- Driving Forces Towards BcN
- BcN versus NGN

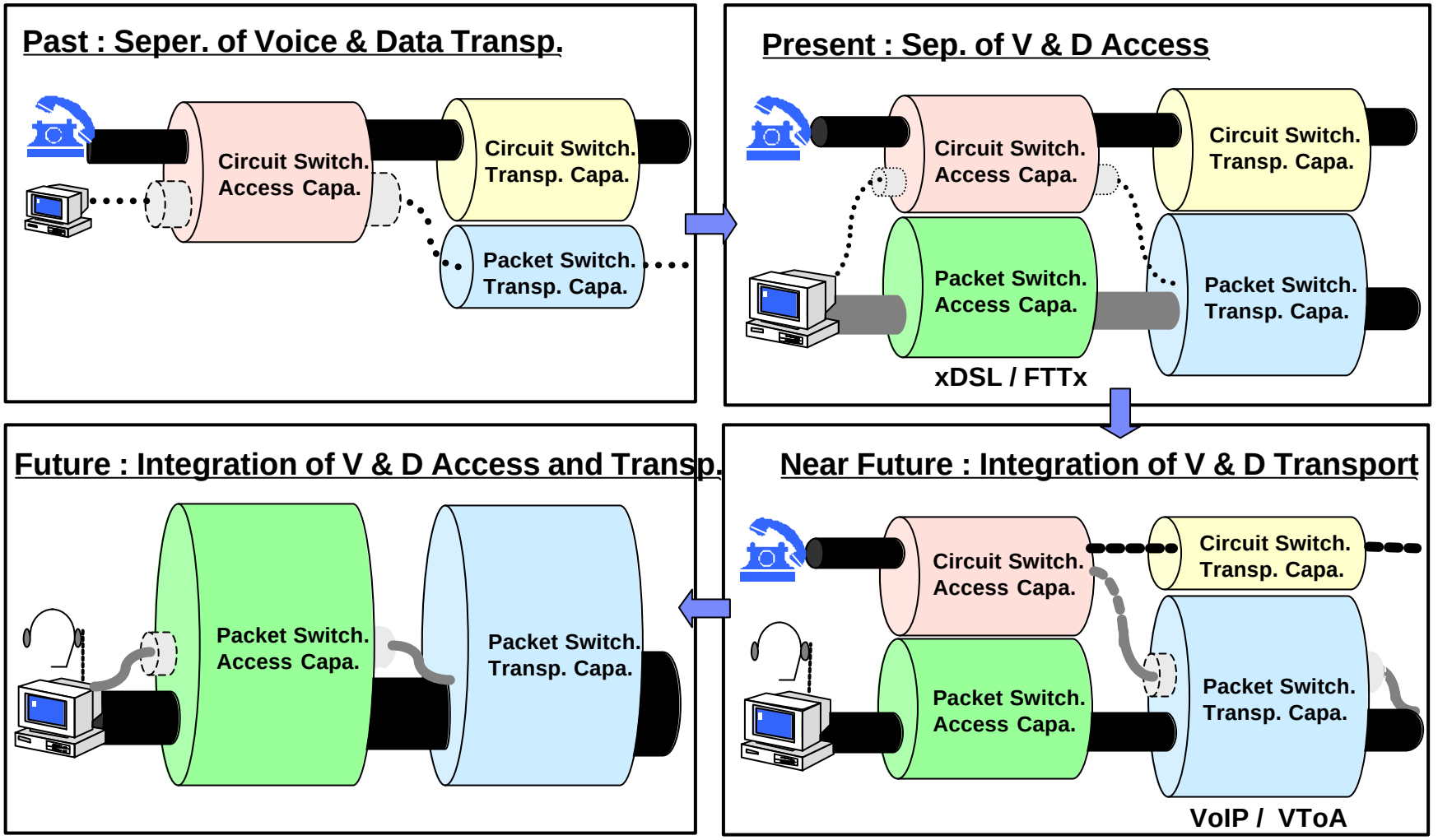
PART ? .

Environment Analysis(1)



PART ? .

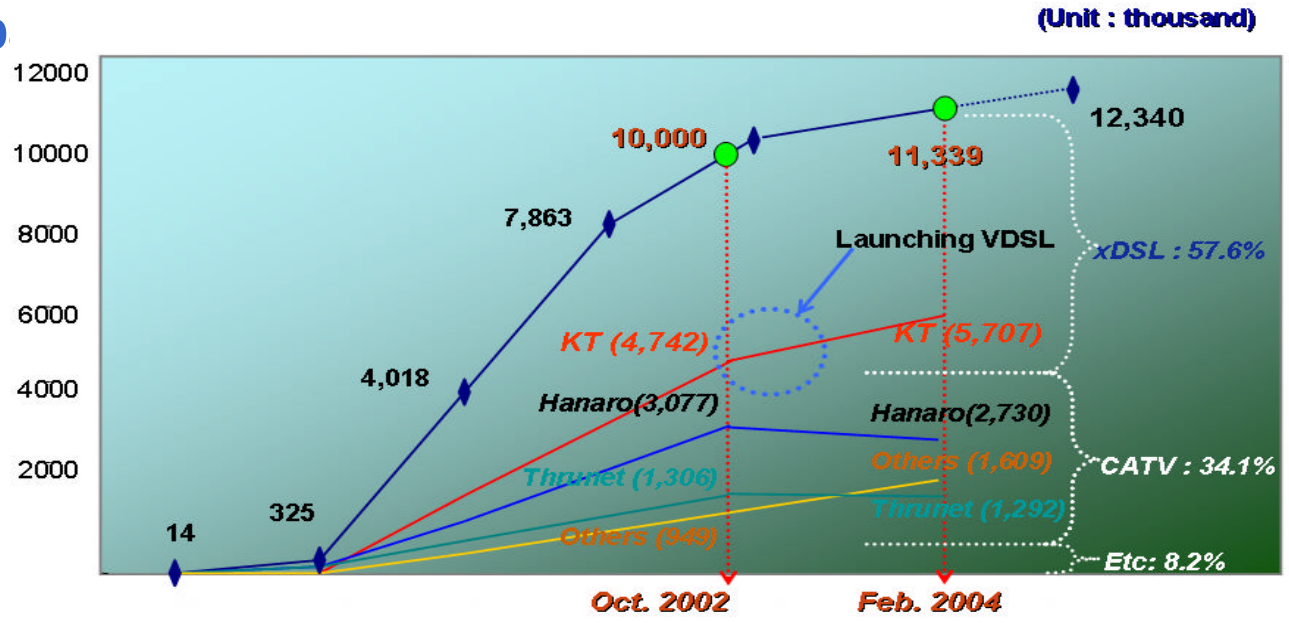
Environment Analysis(2)



PART ? .

State of Broadband in Korea

Broadb



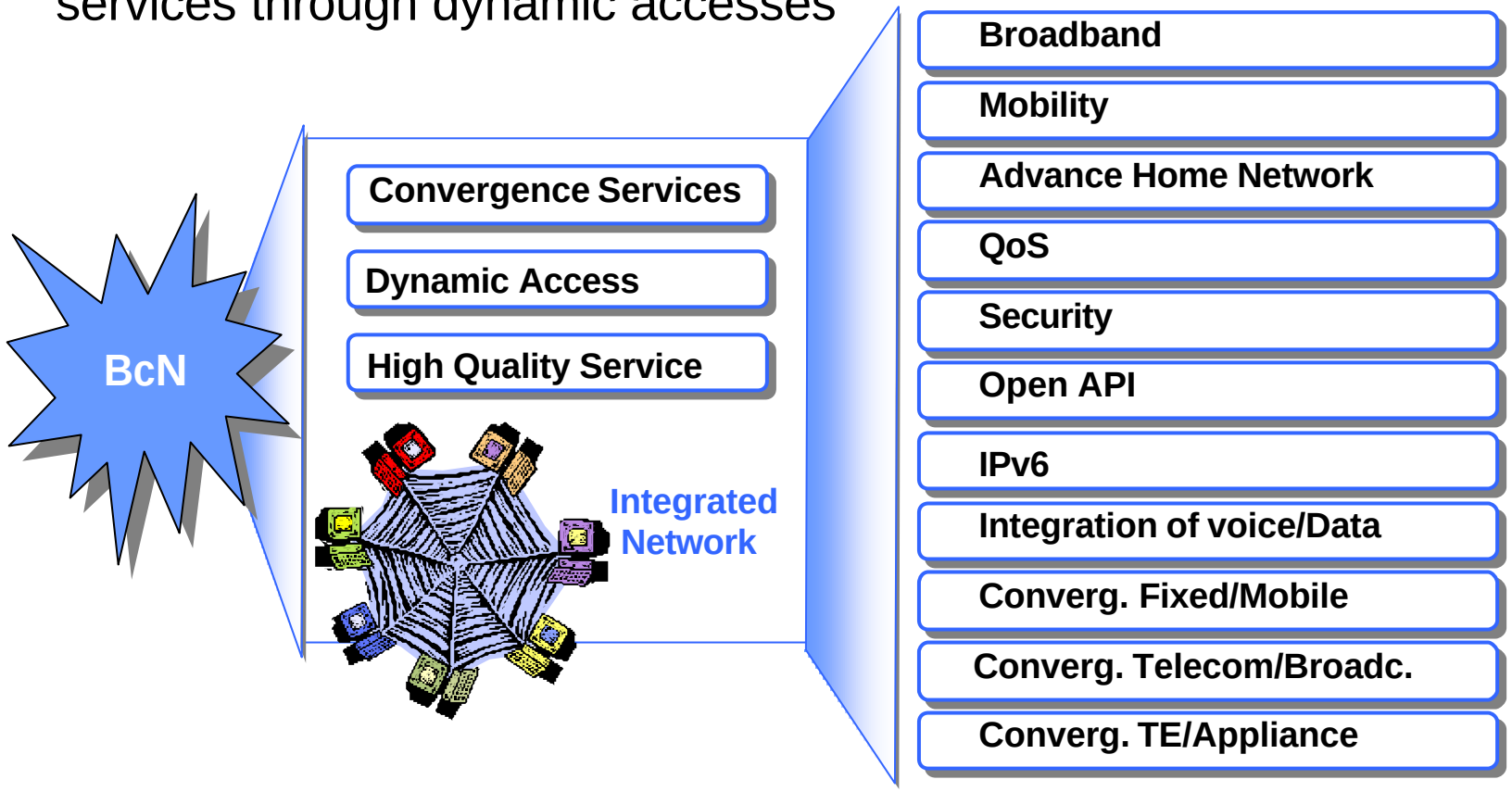
- **High speed(Broadband) internet Subscriber number : over 11million**
  - DSL: 6.25million(56.5%), HFC: 382 3.82million(34.5%),

    LAN: 0.99million(9.0%), FTTH: 1thousand

PART ? .

Definition

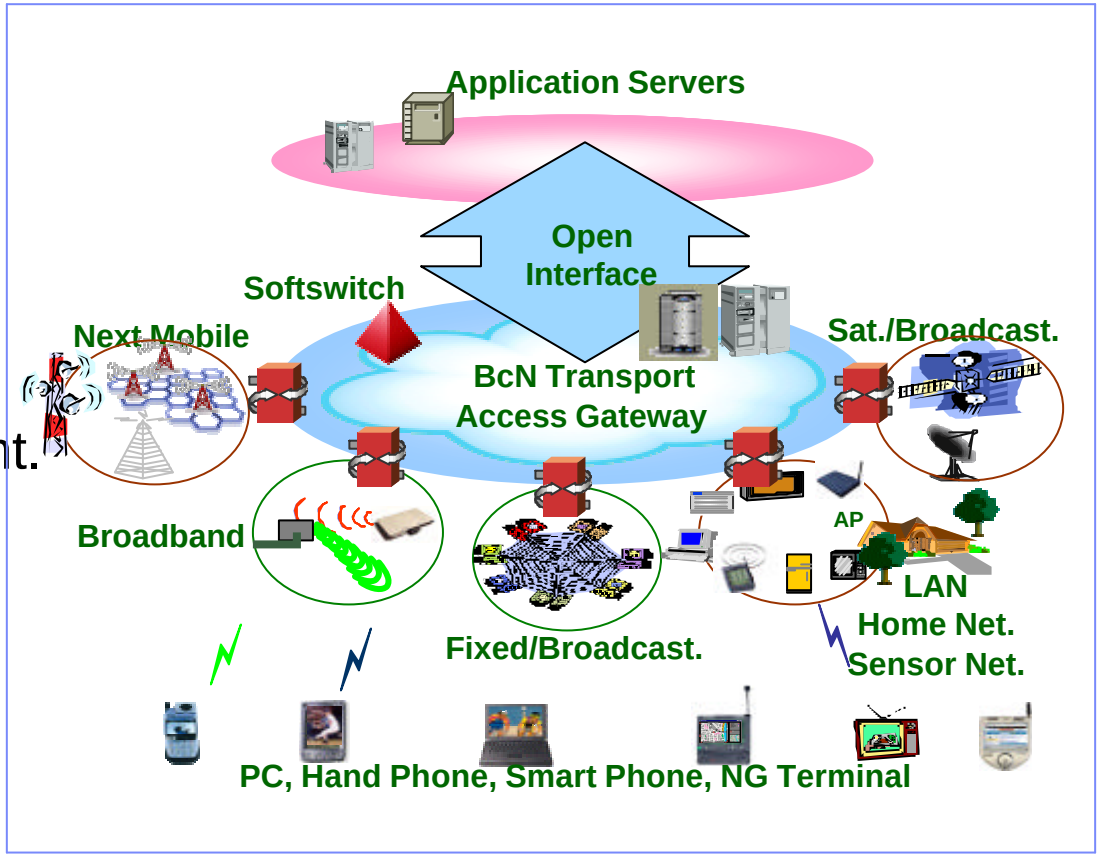
- BcN ?
  - IP(Packet) based integrated network for high quality convergence services through dynamic accesses



PART ? .

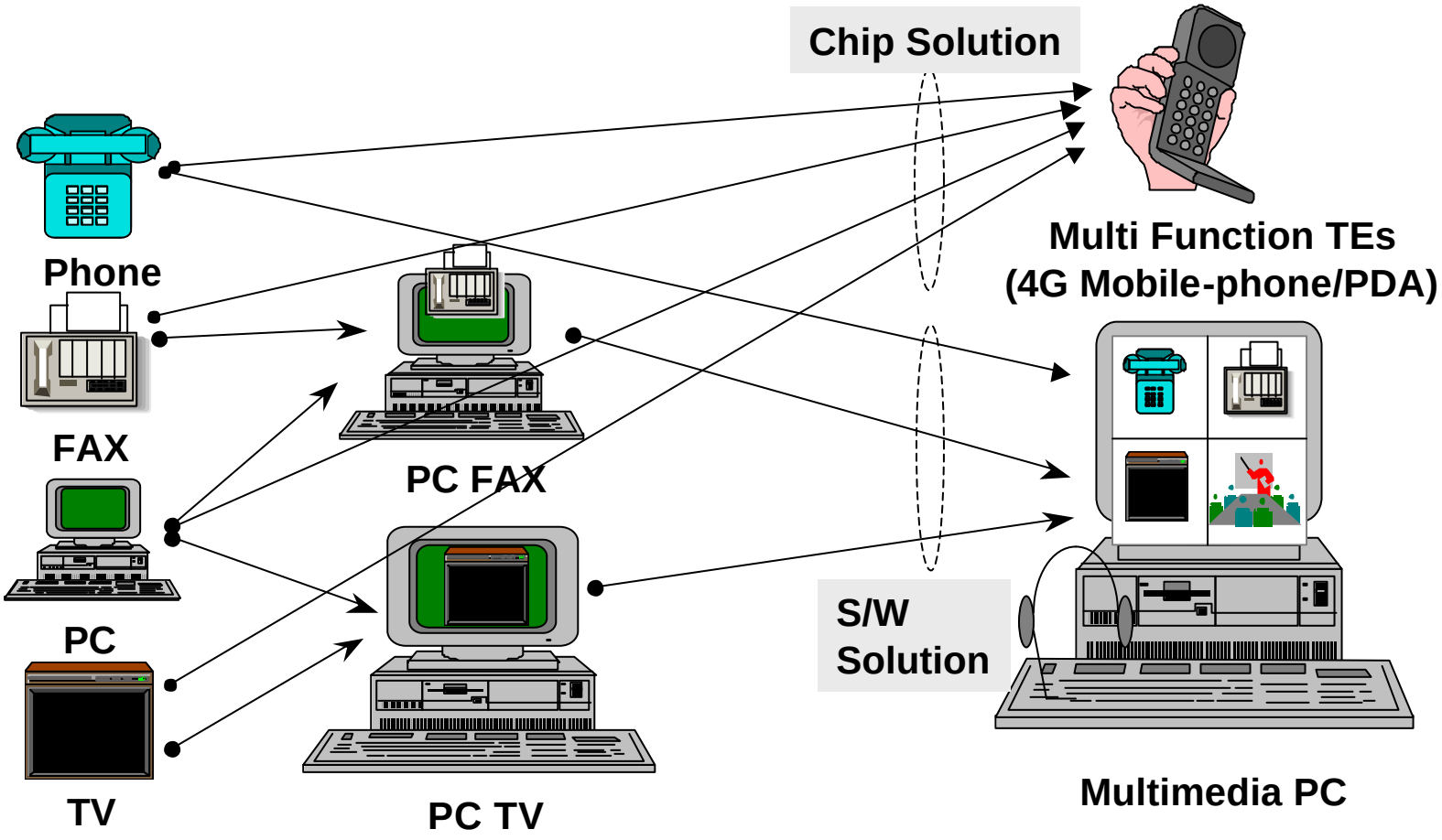
General Architecture

- Easy adapt of new service
- All IP based integrated transport network
- Integrated Customer/ Service/Billing Management.
- Dynamic Access Network
- Multi-Function TE



PART ? .

Development of User Equipments

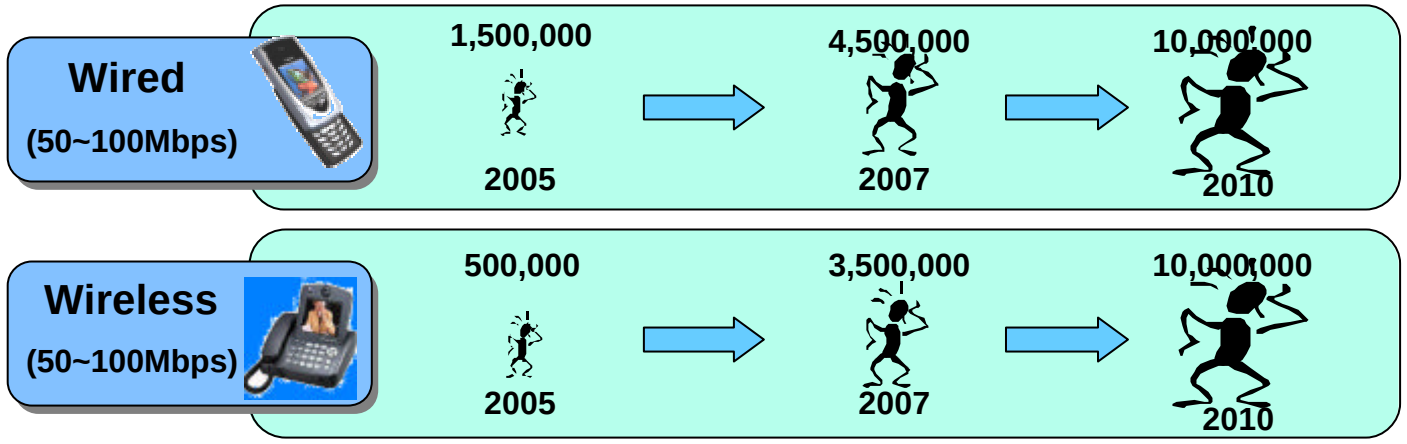


PART ? .

Vision

- **Vision**
  - Build a state of the art information infrastructure in the world
  - Create an environment to use high-quality multimedia services
  - Prepare core foundation of IT industry growth momentum

- **Goal**
  - Build an Integrated network with the bandwidth of 50~100Mbps that can offer seamless multimedia services to 20 million wired or wireless service subscribers



PART ? .

Driving Forces Towards BcN

- **Need of change communication market architecture(Need of New value added service)**
  - Saturation of both Fixed and Mobile telephone services
  - Need of Integrated (Fixed+Wireless) and Convergence (Telecom+Broadcast)
- **Need of New Service Paradigm**
  - Increase of Service requirements (Flex. of Access, Diversity of Service etc.)
  - Increase of High Quality services
- **Need growing energy for IT Business**
  - Preparation of New Revenue Stream based on IT Business
  - Development of new high-tech and market

PART ? .

BcN versus NGN

BcN (Broadband Convergence Network)	NGN (Next Generation Network)
▪ 2002 NGN, 2003 NGcN, 2004 BcN ▪ Convergence of Broadcasting and Telecommunication	▪ Continuation of GII(1993)concept ▪ 'NGN 2004 Project' in ITU
▪ Terminology ▪ Time for Convergence of Broadcasting and Telecommunication ▪ NGN related Recommendations in ITU are still conceptual	

PART ? . Realization of BcN

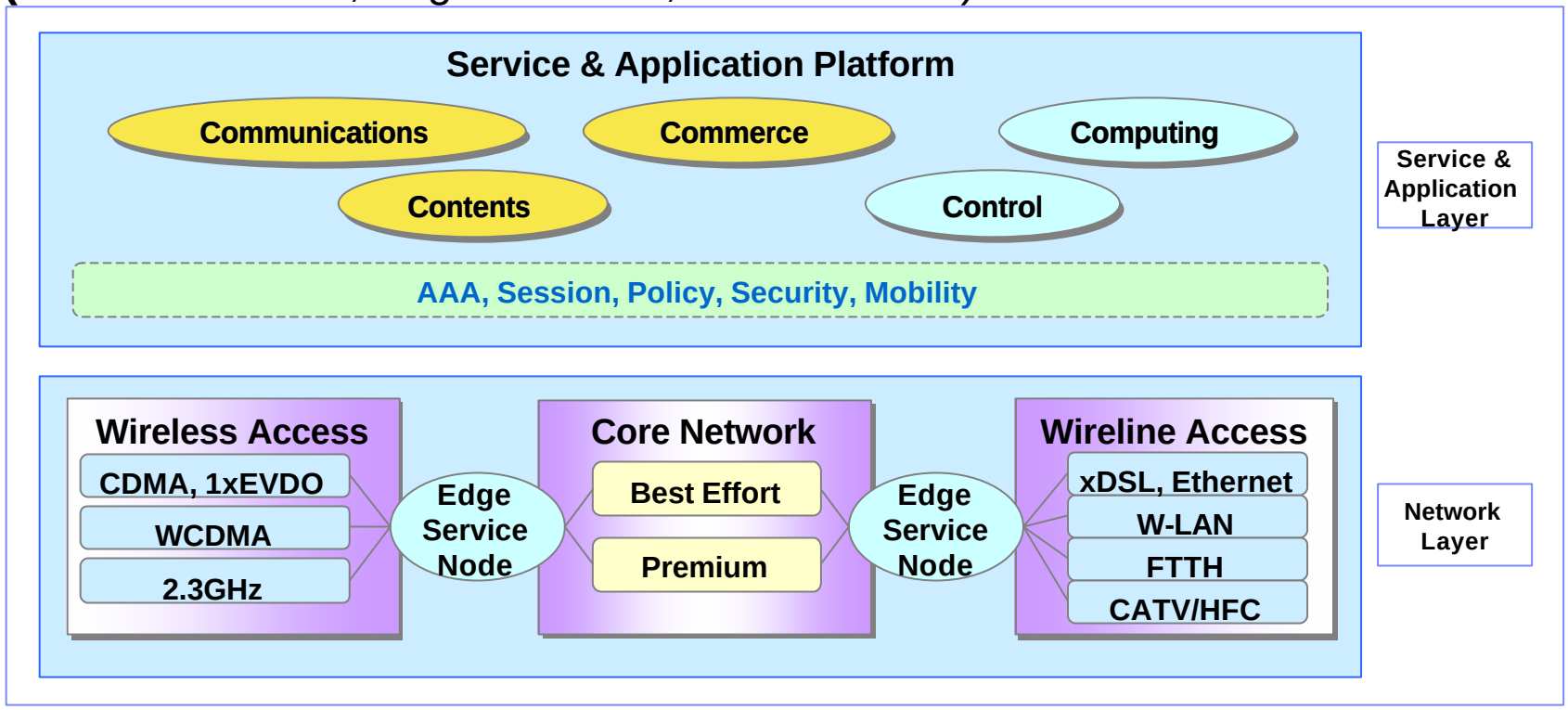
- Realize Leveraging Engines
- STEP 1. Evolve Broadband Access Network
- STEP 2-1. Add intelligence to Edge Network
- STEP 2-2. Add QoS to Core Network
- STEP 3. Home Networking through Broadband
- Final STEP. Broadband convergence Network

PART ? .

Realize Leveraging Engines

Network Evolution

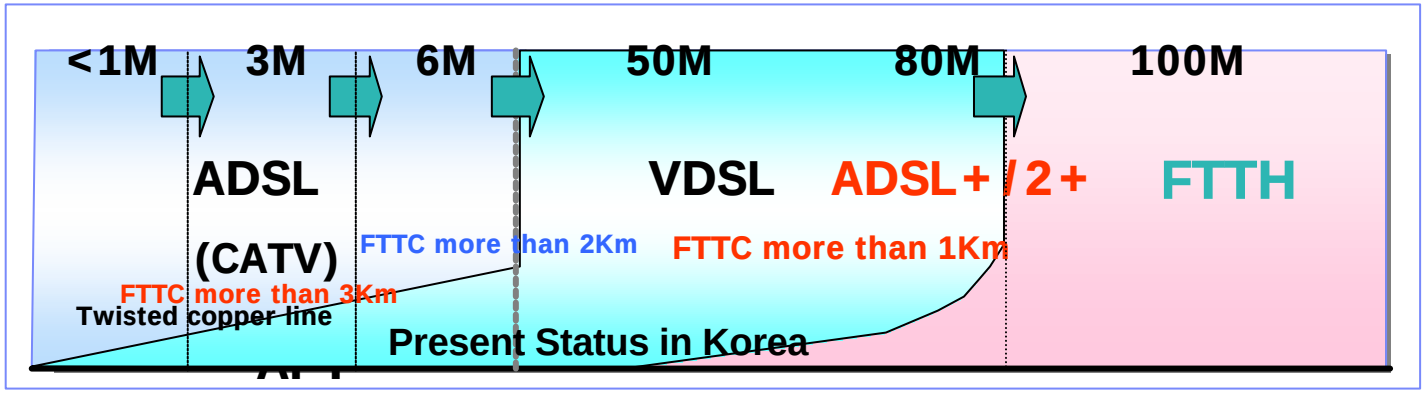
(Access Network , Edge Network , Core Network)



PART ? .

STEP 1. Evolve Broadband Access Network(1)

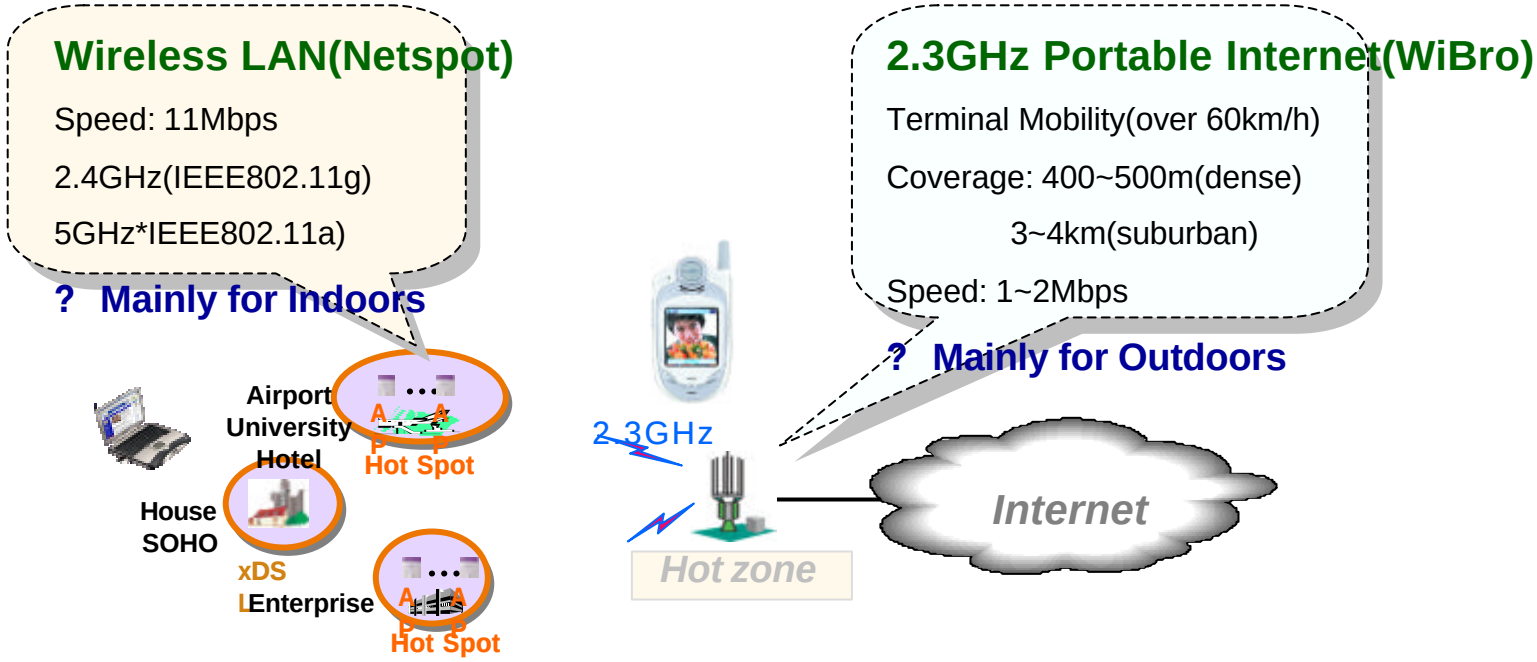
- **Fixed broadband needs "Higher Speed"**
  - Services : High quality VoD, T-commerce, Telecom-Broadcasting convergence, Tele-medicine, Virtual reality, …
- **Evolution phase**
  - VDSL : 13/20Mbps → 80Mbps
  - FTTx : FTTC-VDSL / FTTC-Ethernet → FTTH
  - HFC : 4Gbps, Triple-play service



PART ? .

STEP 1. Evolve Broadband Access Network(2)

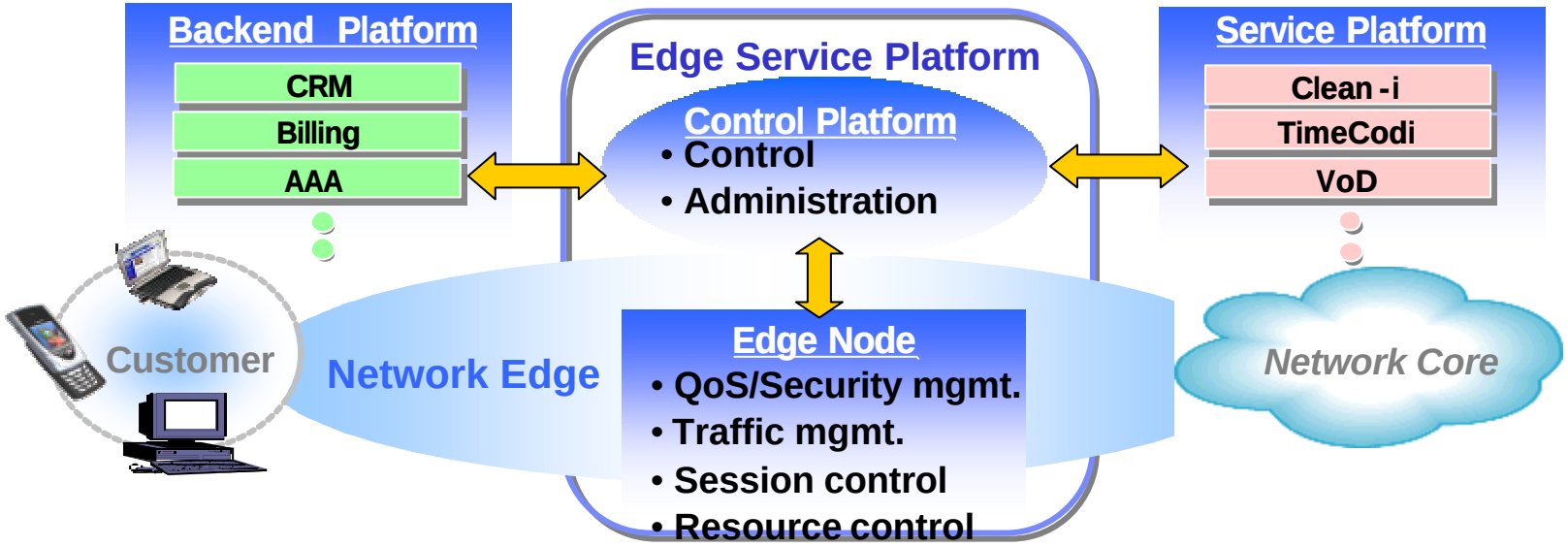
- **Wireless broadband needs "Higher Speed, Mobility & more Coverage"**
  - IP based integrated network for high quality convergence services through dynamic accesses



PART ? .

STEP 2-1. Add intelligence to Edge Network

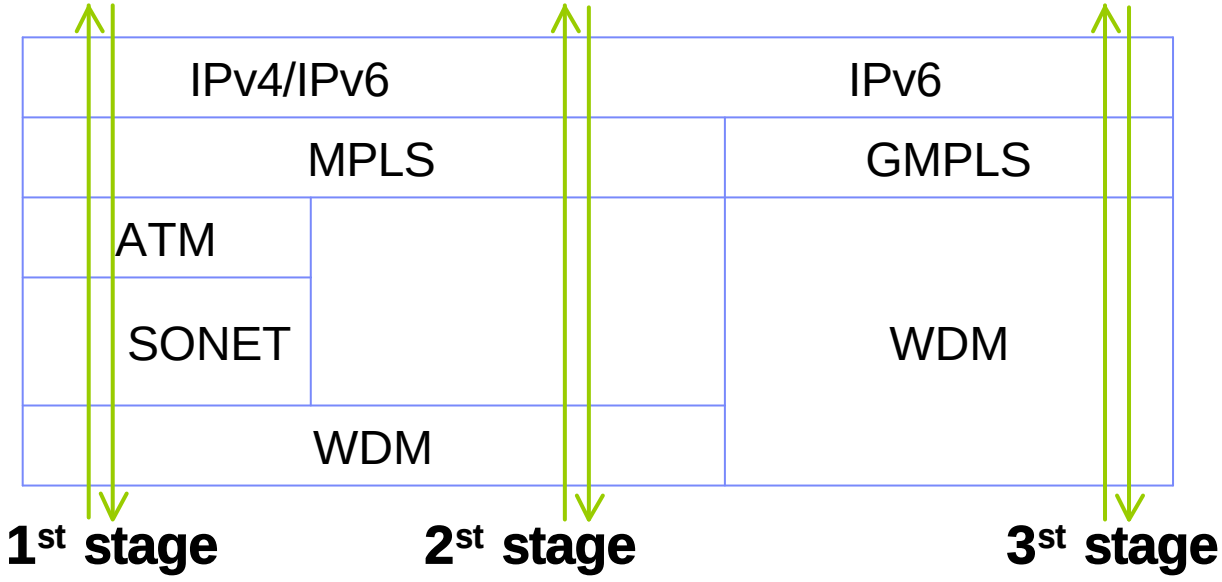
- **Edge Service**
  - Value-added services based on administration & control of user profile established in Edge Service Node
  - Personalized services with connection authentication & variable platform resource
  - Services : Content filtering, Scheduled shutoff, VoD, …



PART ? .

STEP 2-2. Add QoS to Core Network

- **Premium Core Network**
  - QoS (MPLS, Diffserv, RSVP, …)
  - Security (Host/Application-based → Network-based)
  - Services : Best-effort → Premium(real-time, high quality)
- **Migration(Layering Convergence)**

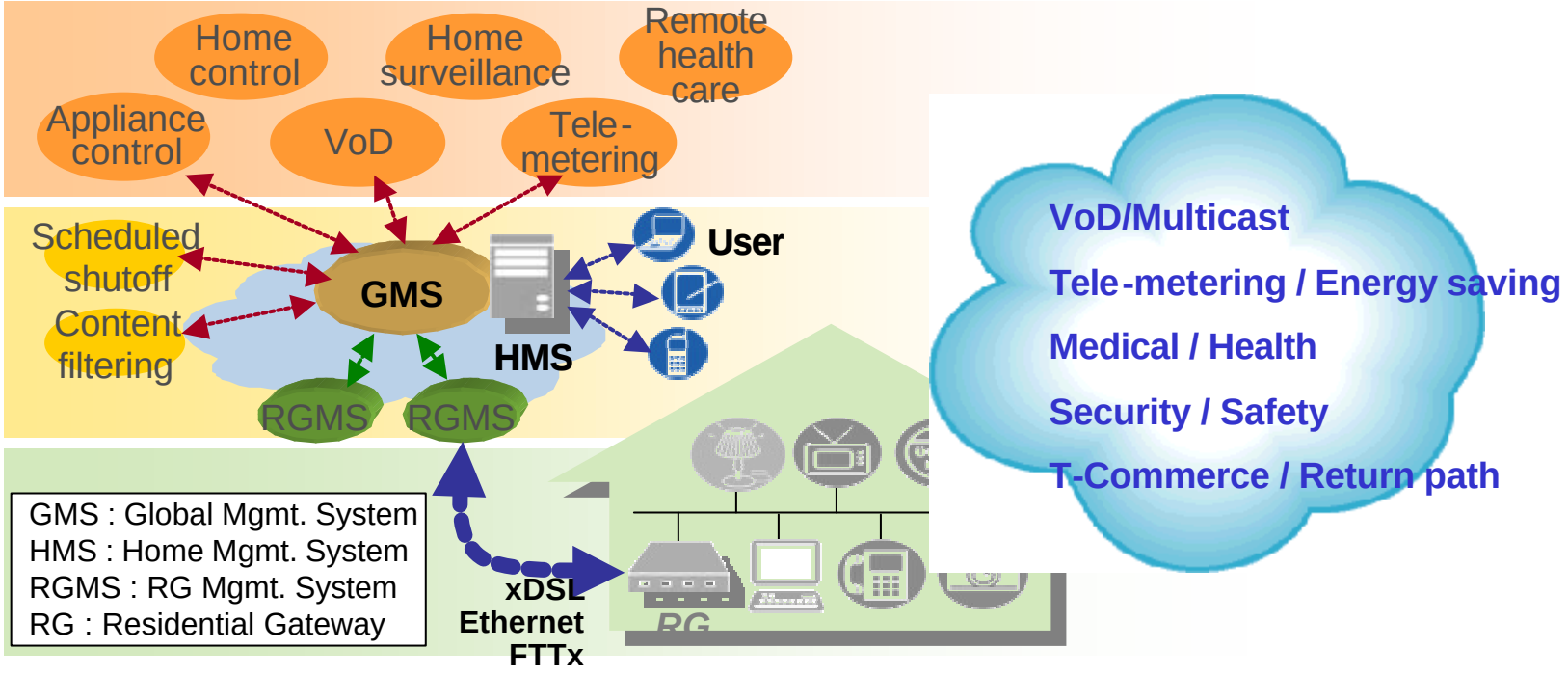


PART ? .

STEP 3. Home Networking through Broadband

For Ubiquitous Network

Build All-IP environment in home → Enlarge the network coverage to Home



PART ? .

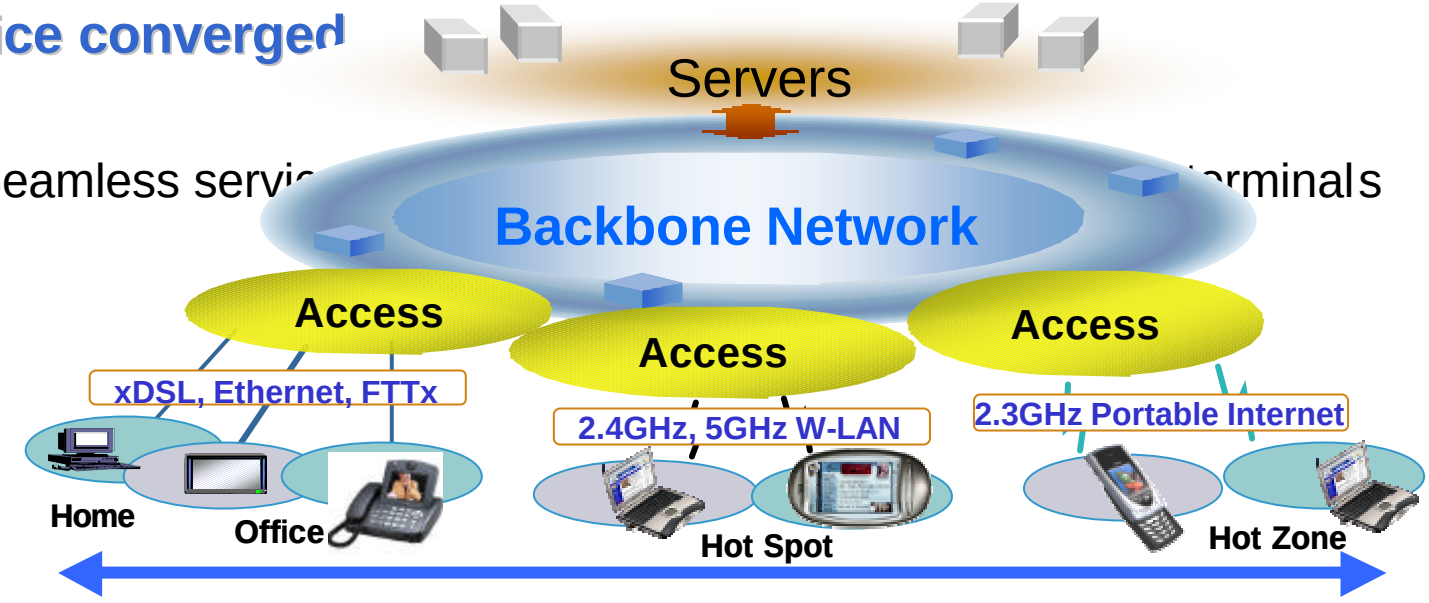
Final STEP. Broadband convergence Network

Network converged

Various type of broadband access networks (fixed, mobile) are converged into one backbone network

Service converged

Seamless servi… …erminals



PART ? . Broadband of Wireless Access

- Overview
- Driving Plan

PART ? .

Overview

Definition

Provide various type of service according to mobility of users

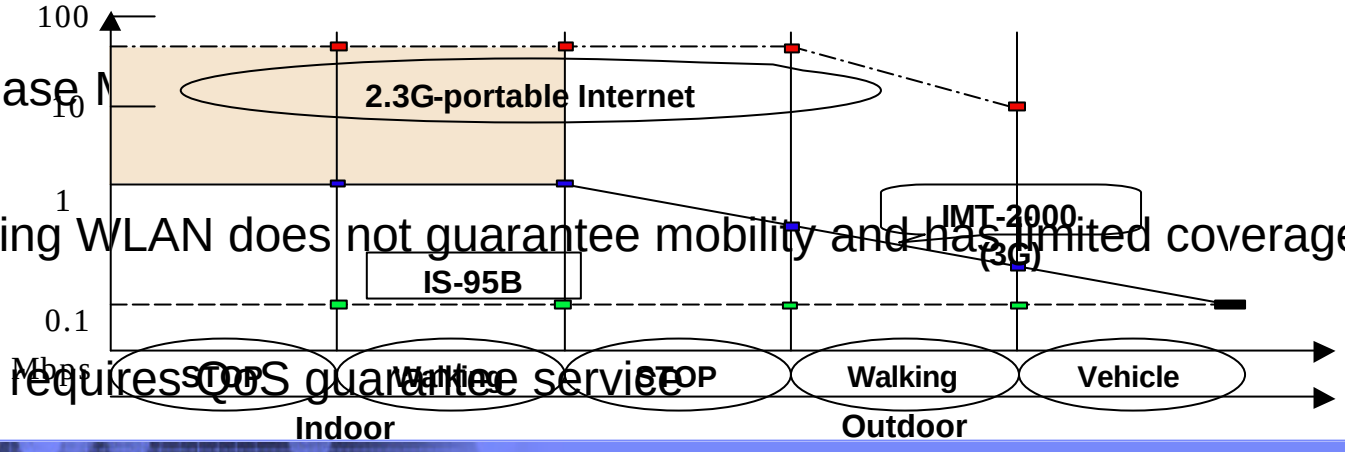
Consist of Wireless LAN, WiBro, IMT2000(include enhancement)…

Needs

Increase M

Existing WLAN does not guarantee mobility and has limited coverage area

User requires QoS guarantee service



PART ? .

Driving Plan(1)

Object

Providing wireless network for the 3G equivalent environment with 50~100 Mbps to the 10 million user

Unit : 1000

	2005	2007	2010
WiBro/WLAN	500	3,500	9,500
4G			500
Total	500	3,500	10,000

Strategy

Frequency reallocation and finding new frequency

PART ? .

Driving Plan(2)

Solution

Improvement of IMT2000 and WLAN Technology

New Technology(Wibro)

Providing Broadband wireless network for Seamless Services

High speed WLAN	WiBro	IMT2000 and IMT2000 enhancement
Coverage : 100m Speed : 500Mbps~1Gbps Terminal : Notebook, PDA	Mobility : 60km/h Speed : 30~50Mbps Based IP Network	Speed : 10Mbps HSDPA(High Speed Downlink packet Access)

PART ? . Standard Model of BcN

- Objects
- Driving Status

PART ? .

Objects

Vision of BcN

Interface Between Network devices

Providing Service scenario

PART ? .

Driving Status

Draft 1.0 (2004.6)

Draft 2.0 (2004.12)

providing Service Requirement and

Verification of Key Technology

Guideline for Test Bed and Commercial network

Will be continue 2010

PART ? . Considerations

- OAM issues
- Traffic Management Issues
- Complicate charging and accounting
- Killer application
- Profit model

Thank you.