Convergence Access Network in Korea

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Agenda

- **Paradigm Shift in IT World**

- **IT Status in Korea**

- **Convergence Access Network**

- **Concluding Remarks**

Big Changes!

- Internet delivers 6 billion e-mails every day (Oct. 2003)
- After the Industrial Revolution, we've achieved 50 times productivity growth for 200 years
- Processing power of a computer today is comparable with 10,000 computers of 25 years ago

Time to technology acceptance
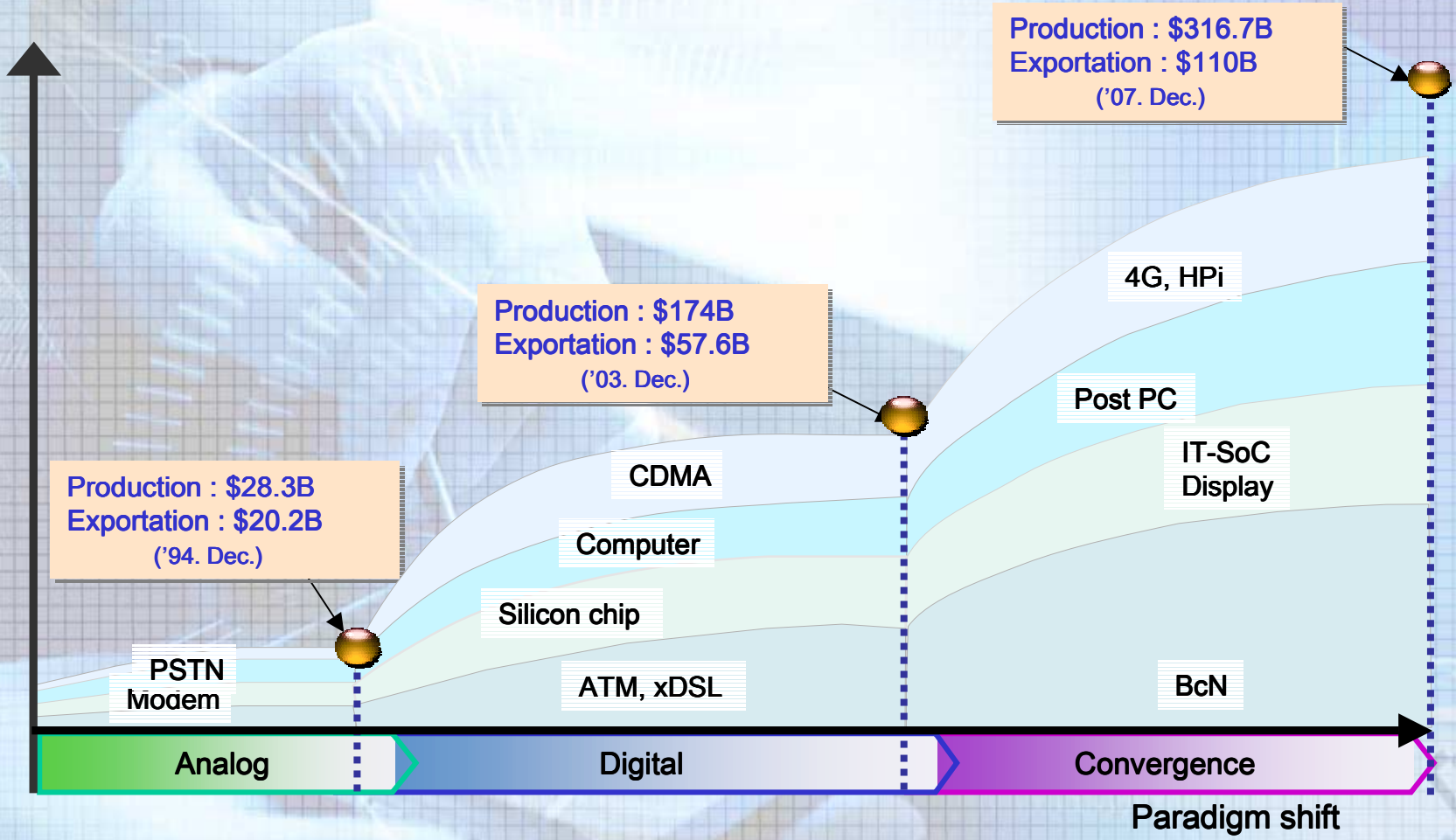
	Years
ATM	
PC	
LAN	
E-mail	
Web	
E-commerce	

Years 0 1 2 3 4 5 6 7 8 9 10

Business cycle compression
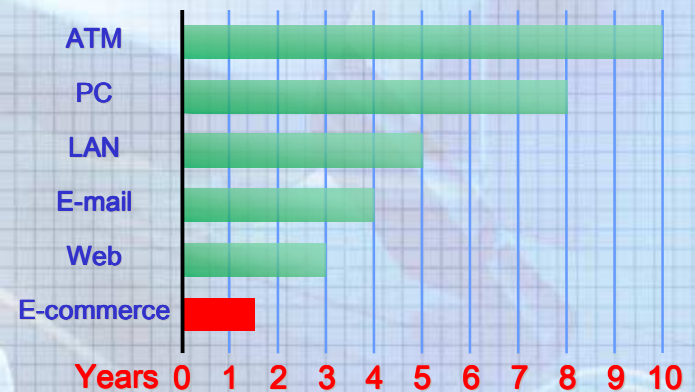
Radio	PC	TV	Internet
38 years	15 years	13 years	4-5 years

Time for becoming 50 million Users

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Paradigm Shift & IT Industry Growth

Production : $316.7B
Exportation : $110B
('07. Dec.)

Production : $174B
Exportation : $57.6B
('03. Dec.)

Production : $28.3B
Exportation : $20.2B
('94. Dec.)

4G, HPi

Post PC

IT-SoC
Display

CDMA

Computer

Silicon chip

BcN

PSTN
Modem

ATM, xDSL

| Analog | Digital | Convergence |

Paradigm shift

Current IT status in Korea

- ## Top 7th Country of IT in the world
- ## 11 million broadband subscribers in December 2003
  - ▶ 65% of total households with broadband connections
  - ▶ Highest percentage among the OECD countries

11.5 million IT Subscribers (03/2004)
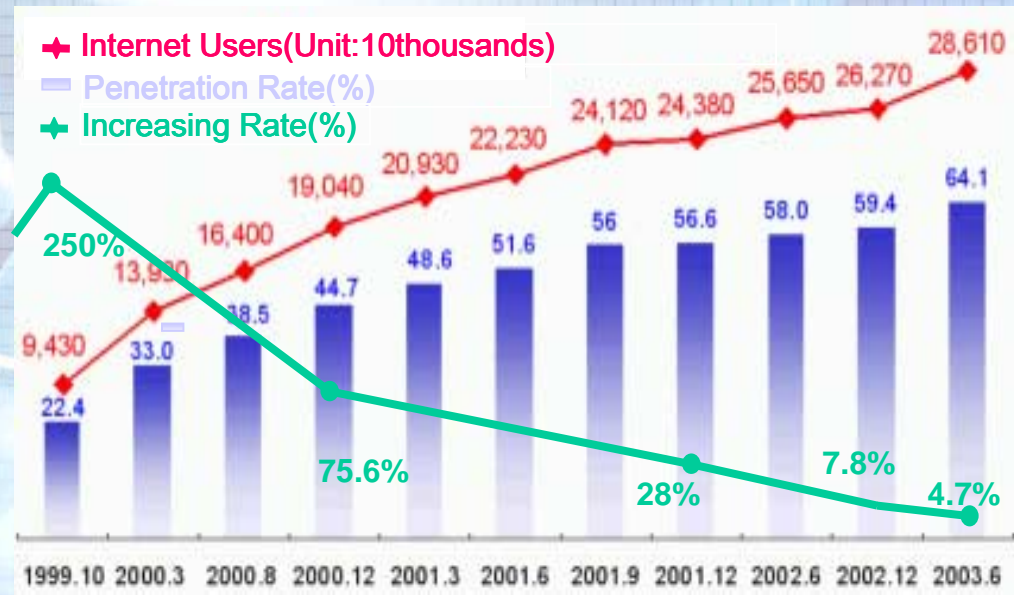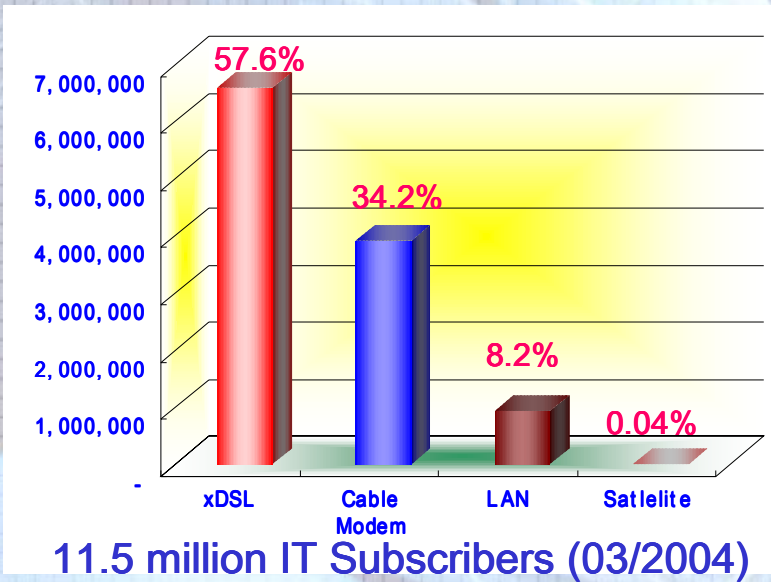
KRNIC Korea Network Information Center

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Status of IT industry

- **The importance of Korean IT industry**
  - 15.6% of GDP in 2003
  - 40% of net GDP increase for the last five years
- **Rapid increase of IT export**
  - CDMA, TFT-LCD, semiconductor and IT infrastructure
- **World leader of IT manufacture technology**
  - Government policies and private investment for the development of IT manufacture technology
- **World best IT infrastructure**
  - Best IT infrastructure for a test bed of broadband Internet and wireless Internet technology

■ **Super class (over 100 Mbps) to 3rd class**

Creation from 2004

Super Class   **1st Class**   **2nd Class**   **3rd Class**

Deletion from 2004

■ **Current Status of the Cyber Building Emblem(MIC, 2003.12)**

Building Types		1st Class	2nd Class	3rd Class	4th Class	Total
Residential	Formal	409	851	39	270	1,569
	Pre	578	337	3	0	918
Business	Formal	39	123	13	0	175
	Pre	29	40	3	0	72
Total		1,055	1,351	58	270	2,734

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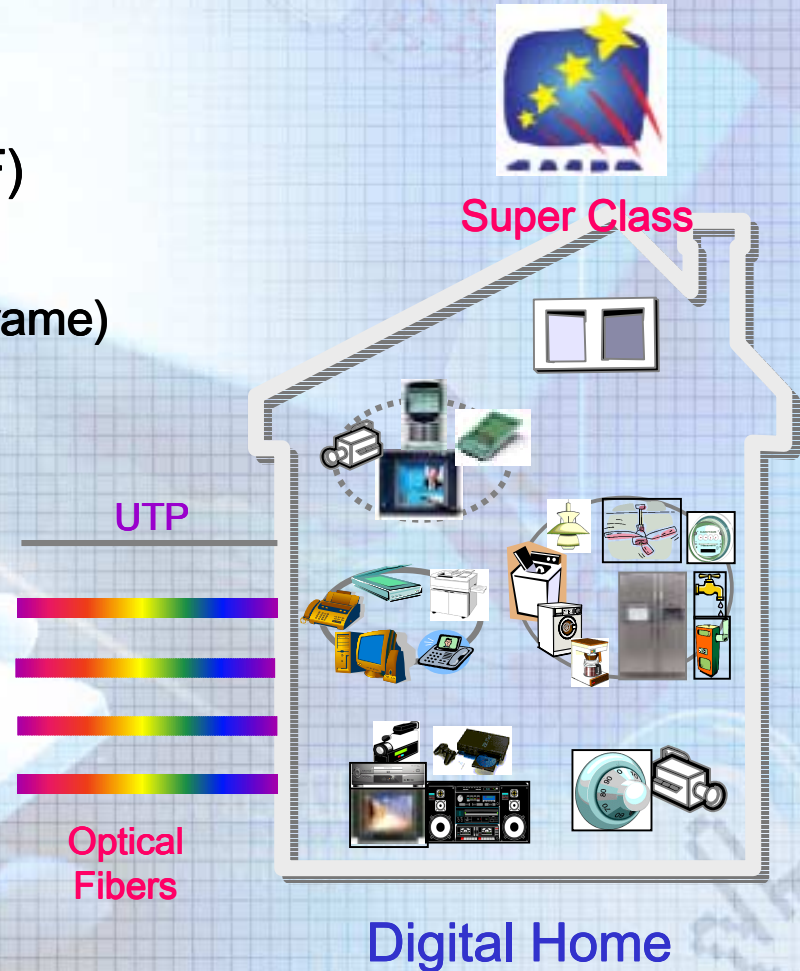Electronics and Telecommunications
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CBE - Super class

- **Key Items**
  - Inter Buildings : over 6 fibers
  - In Bldg : over 4 fibers(2 SMF, 2 MMF)
  - Receiving Digital TV signal
  - BDF/HDF(Building/Home Distribution Frame)

- **Status on march 2004.**
  - 1,902 subscribers
  - By Building Construction Co.

Super Class

UTP

Optical
Fibers

Digital Home

FTTH Field Trials in Korea

Point to Point

- Active Optical Network
- New Apartment in Seoul : 896 Subscriber
- Internet, VoD(5Mbps)
- June 2003 by NCA

Point to MultiPoint

- Ethernet Passive Optical network
- 100 Various Subscribers in Gwangju
- (APT/School/Office/Government/University)
- HDTV, VoD(20M, 5Mbps), EoD, Video Telephony, Video Conference, Internet
- Nov. 2003 by ETRI

FTTP(Fiber To The Pole)

- WDM-PON
- Residential Houses in Busan : small subscribers
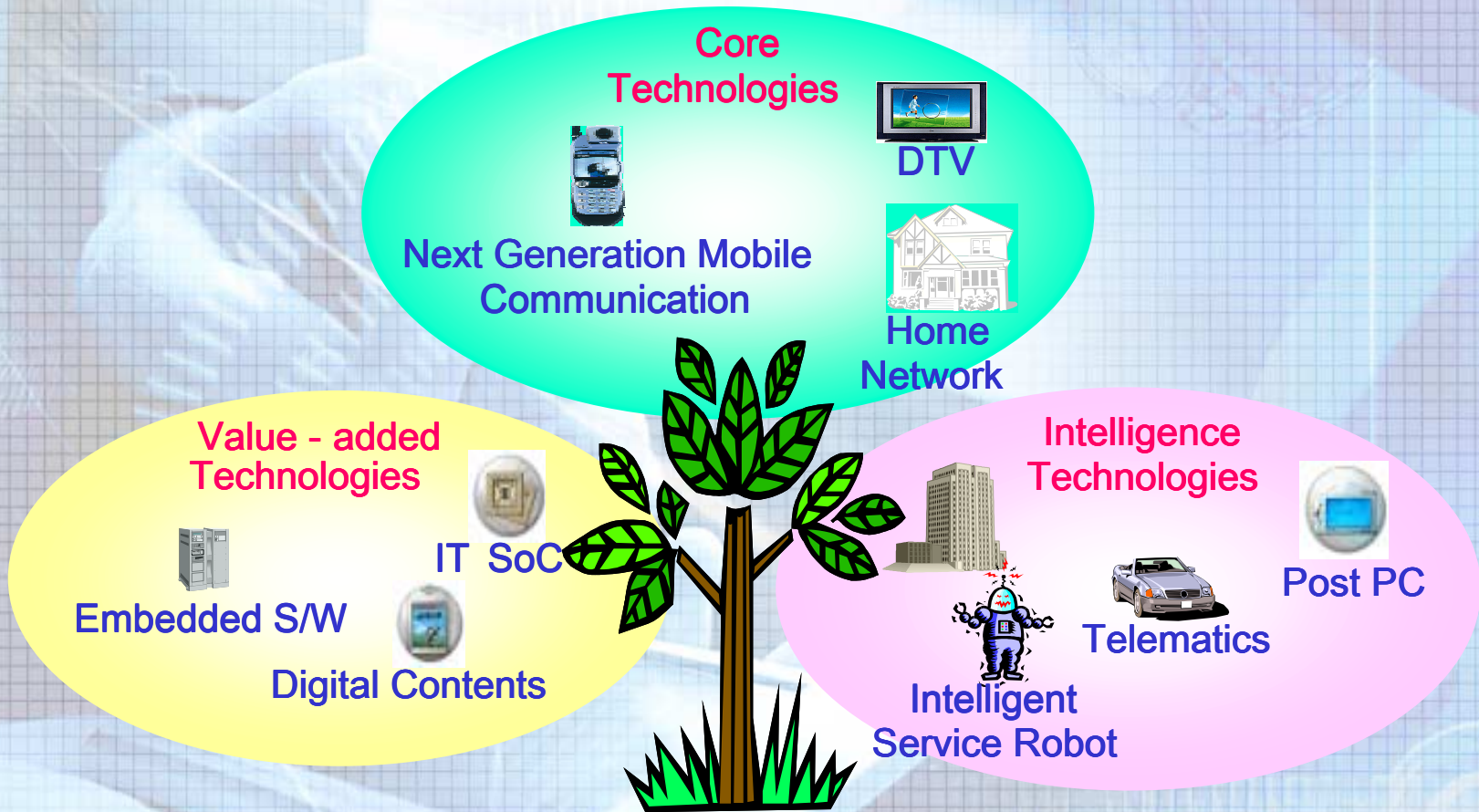- Dec. 2003 by KT

Strategies for Convergence Network

- Advanced IT infrastructure is needed to cope with the change of digital convergence paradigm
- Korea formulated "Strategies for Convergence IT Korea"
- BcN(Broadband & Convergence Network) project is in the plan to enhance the infrastructure of information and communication
- "Early Adaptor" in IT technologies

New Growth Engines

- Korea needs new growth engines to realize BcN and Ubiquitous environment

- Evaluated the industry in terms of marketability, technology and national capability for new growth engines

- Selected 9 sectors with competitiveness and potentiality of growth

9 Sectors in Growth Engines

Core Technologies

DTV

Next Generation Mobile Communication

Home Network

Value - added Technologies

IT SoC

Embedded S/W

Digital Contents

Intelligence Technologies

Post PC

Telematics

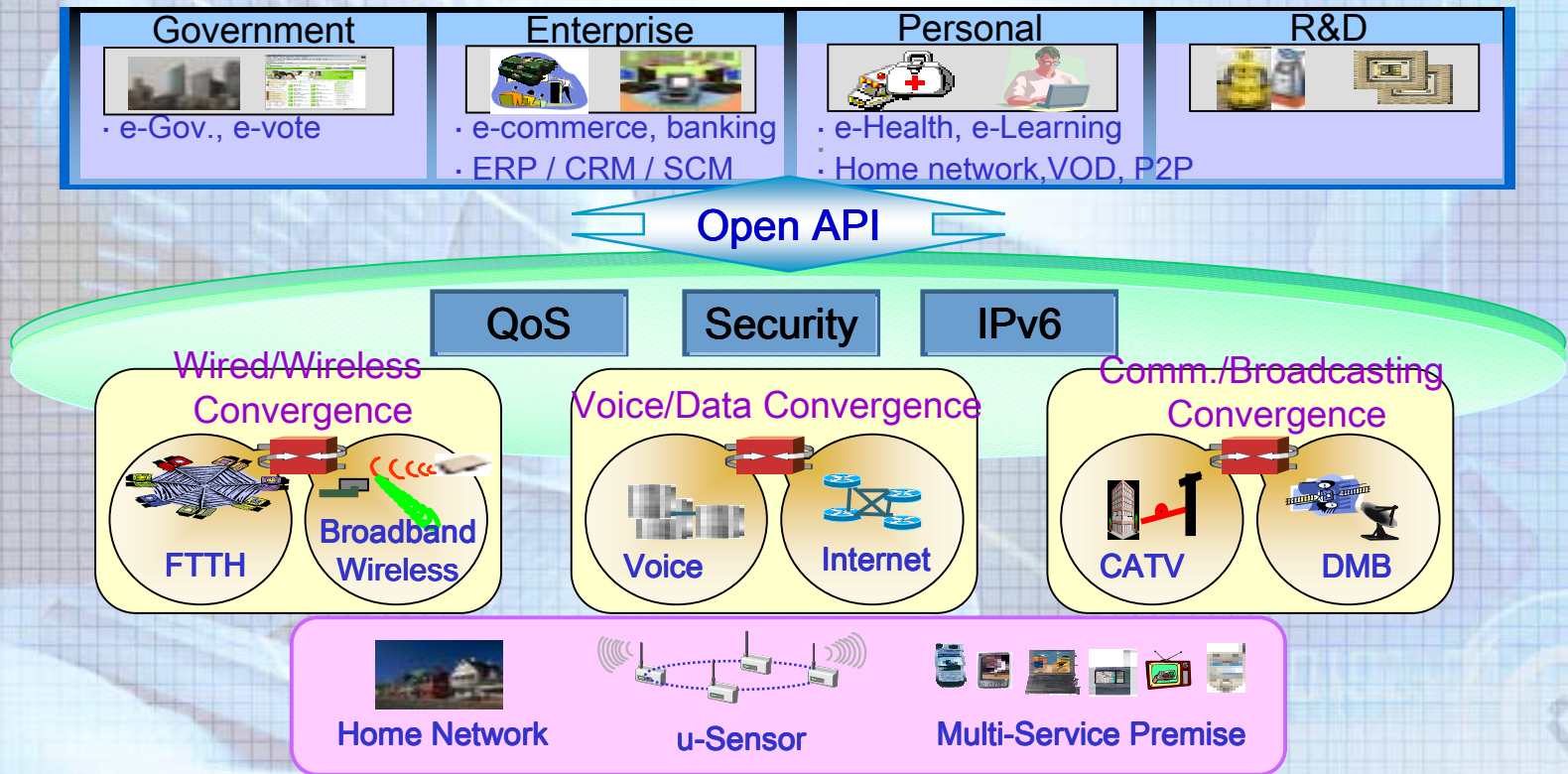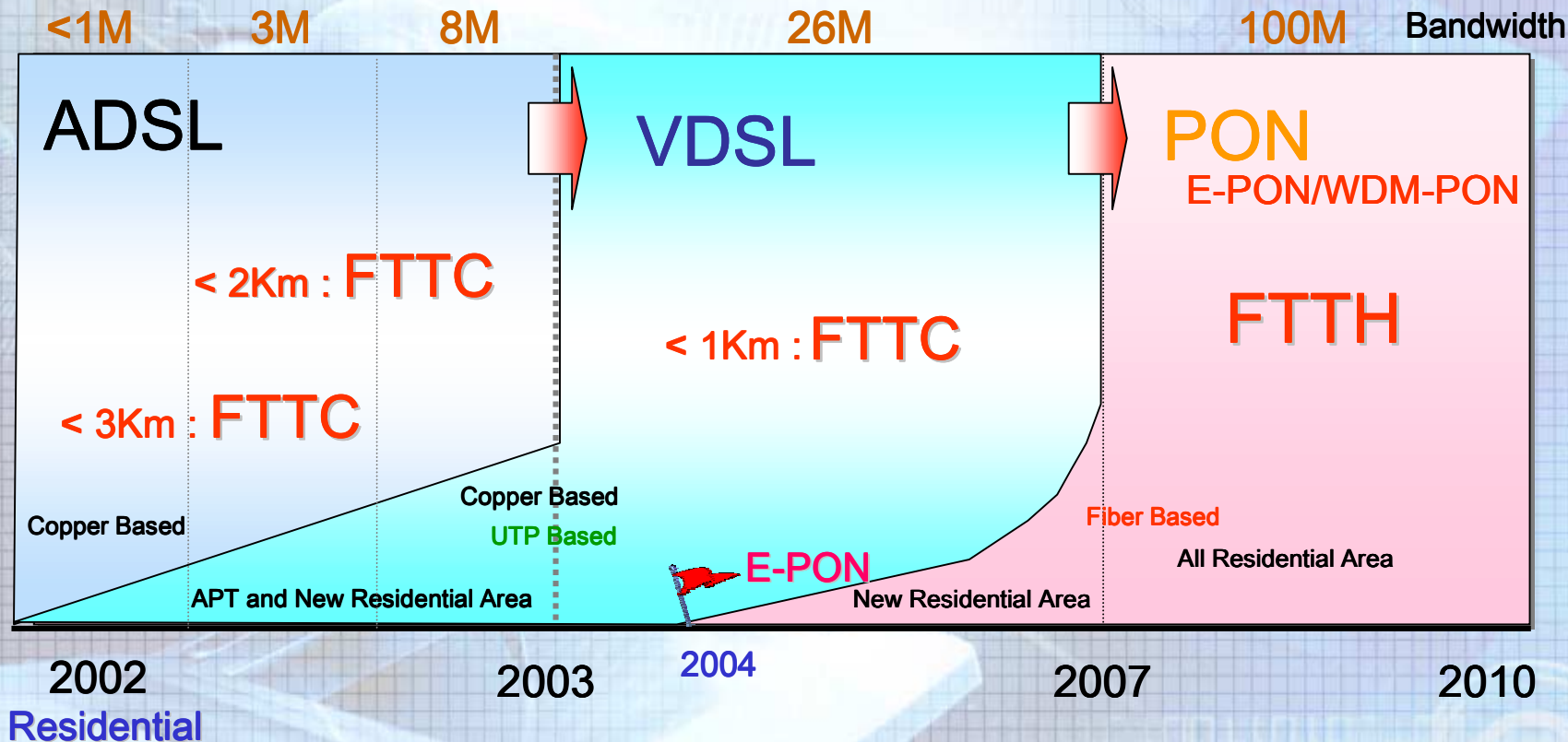Intelligent Service Robot

Selected 9 Sectors

BcN (Broadband Convergence Network)

- **A next-generation broadband convergence network**
- **Supporting for 9 selected sector services**

Government	Enterprise	Personal	R&D
· e-Gov., e-vote	· e-commerce, banking · ERP / CRM / SCM	· e-Health, e-Learning · Home network, VOD, P2P	

Open API

QoS **Security** **IPv6**

Wired/Wireless Convergence

FTTH **Broadband Wireless**

Voice/Data Convergence

Voice Internet

Comm./Broadcasting Convergence

CATV DMB

Home Network   **u-Sensor**   **Multi-Service Premise**

Core Infra for Ubiquitous Environment

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Roadmap of Access Network

| <1M | 3M | 8M | 26M | 100M | Bandwidth |

ADSL ➡ **VDSL** ➡ **PON**
E-PON/WDM-PON

< 2Km : **FTTC**

< 1Km : **FTTC**

FTTH

< 3Km : **FTTC**

Copper Based

Copper Based
UTP Based

Fiber Based

Copper Based

APT and New Residential Area

E-PON

New Residential Area

All Residential Area

| 2002 | 2003 | 2004 | 2007 | 2010 |

Residential
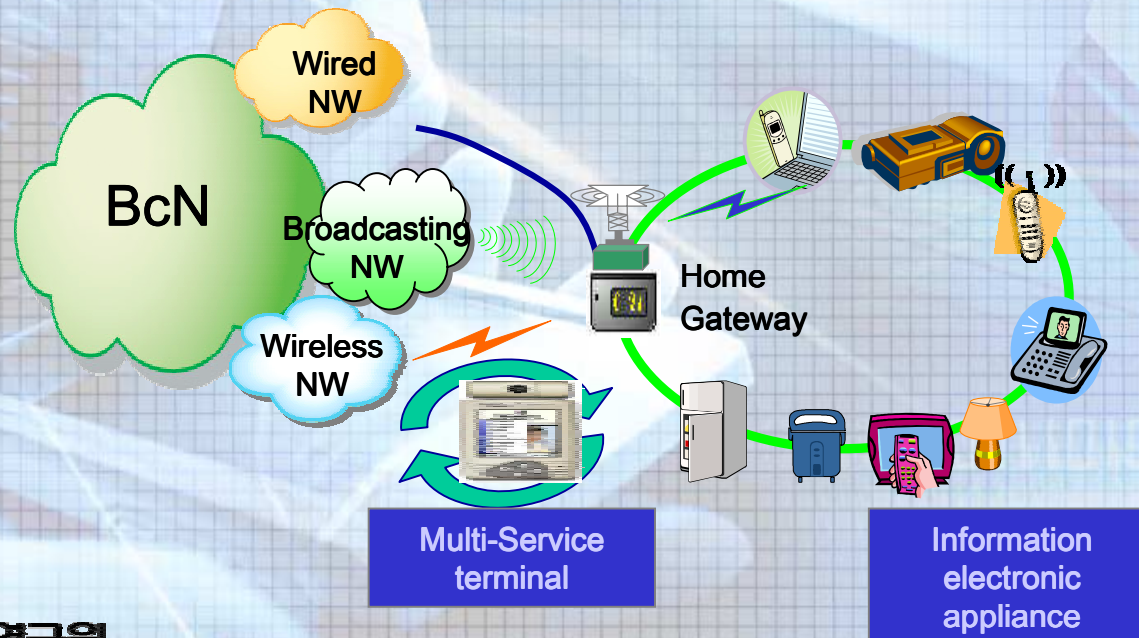
FFTH(Fiber From The Home)
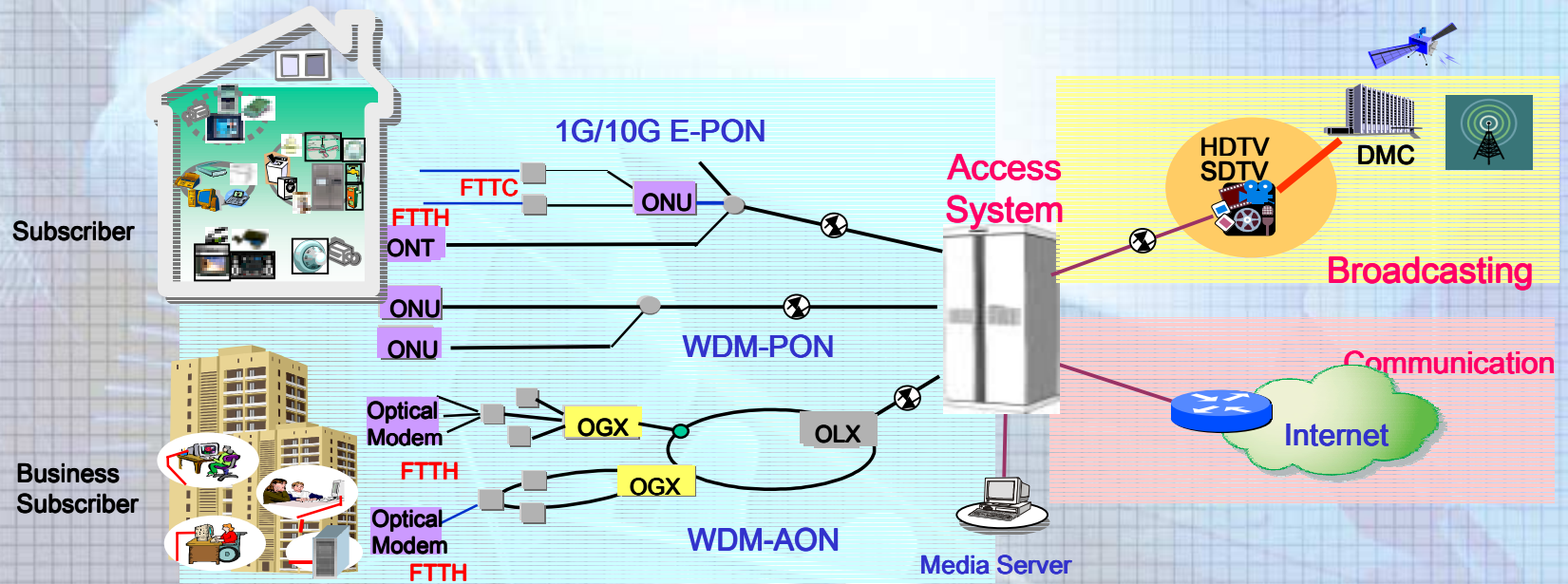
Triple Play Service on a Single Optical Fiber

Digital Home Network in BcN

Multiple Service Premises

- Wired & Wireless composite home network platform for provisioning digital home services

- Development and provision of multi-service terminals and home appliances and home gateways that are capable of seamlessly connecting to BcN access & home networks

BcN

Wired NW

Broadcasting NW

Wireless NW

Home Gateway

Multi-Service terminal

Information electronic appliance

Conclusion Remarks

- Speculated the advent of keen competition space as converging communication territory and broadcasting territory

- Korea selected 9 new growth engines for IT industry with competitiveness and potentiality of growth, and will invest in and develop intensively

- The BcN project aims to enhance the quality of the information infrastructure in response to the 9 new growth engines and Ubiquitous service

- The FTTH and the convergence service will be leading role to make Korea as a IT strong nation

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