Business and Network Migration to NGN

2007.3

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KT

Table of Contents

Changes in the ICT Value Chain

Producing	Packaging	Delivery	Window /Service Providing

Past

Now
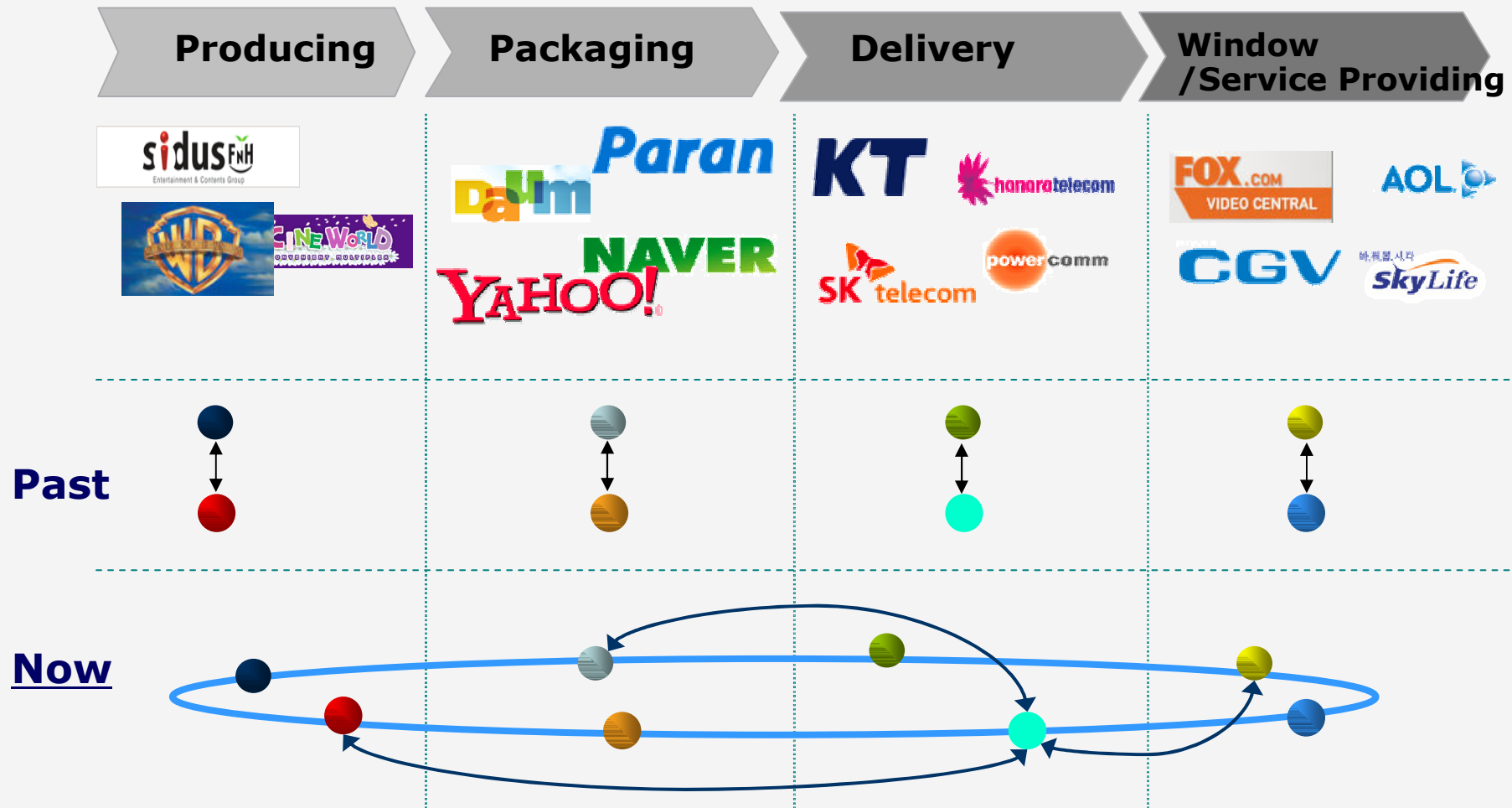
- Competition within the same value chain boundary
- → Competition beyond the traditional value chain boundary

Value Migration

Packaging or Window /Service Providing

High

> 5.0

- Google (16.2)
- Ebay (9.5)
- Yahoo (7.9)
- Microsoft (5.2)

5.0
4.0
3.0

Value in-flow

Market Value Sales

2.0
1.5
1.0
0.5
0.0

Low

Producing → Packaging → Delivery → Window /Service Providing

- TW (2.2)
- Disney (2.0)

Value dragging

Delivery (Traditional Comm.domain)

- Verizon (1.8)
- KT (1.4)
- KTF (1.4)

Value out-flow

High ← **Operating Profit Growth** → Low

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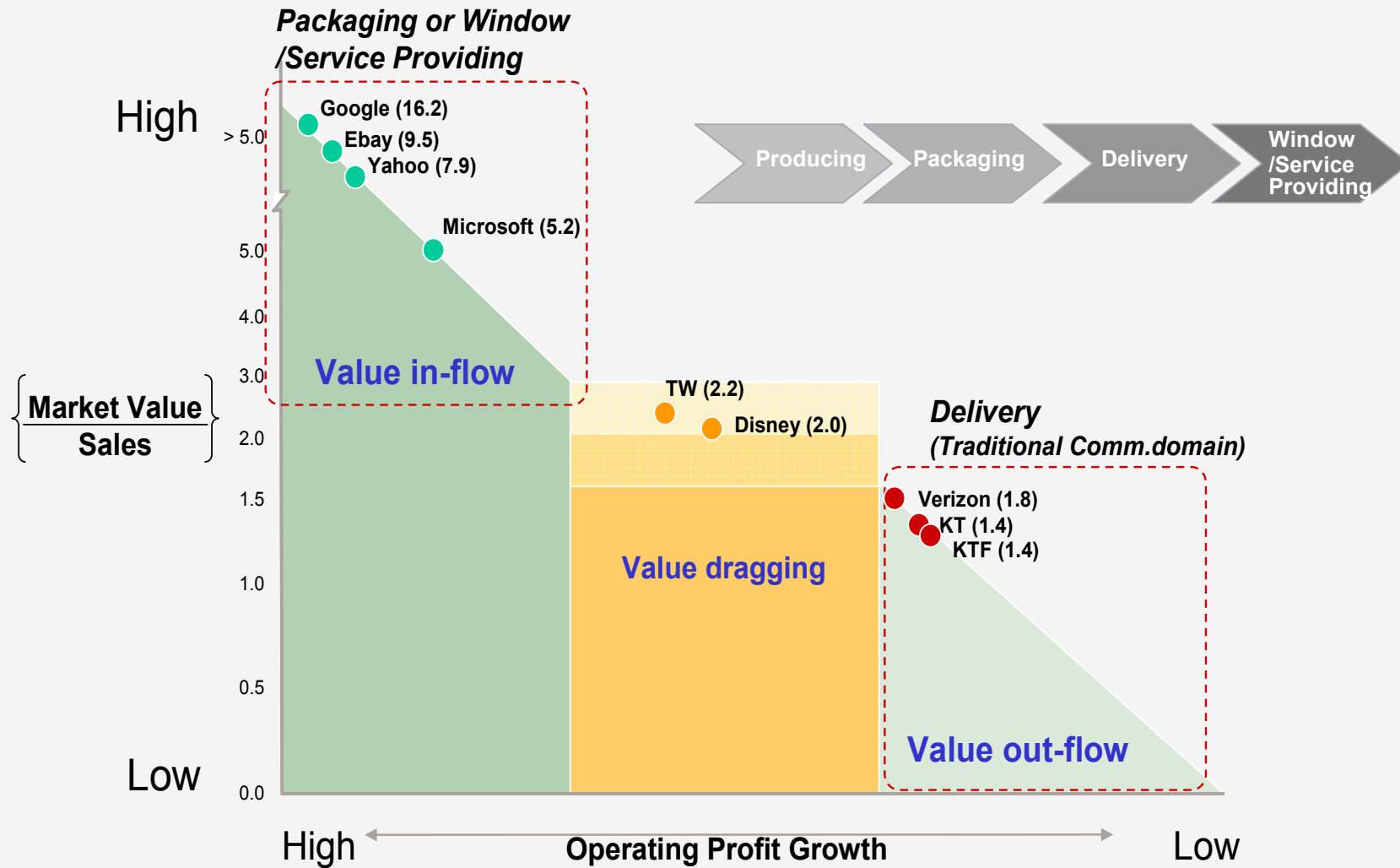
Delivery in the Value Chain

Service Contents → **Packaging Aggregation** → **Terminal**

Delivery

Quality, Capacity

Context/Intelligence

Mass Coverage (均質化**)**

Service Diversity Support

Reliability, Management

Plug-&-Go Terminal
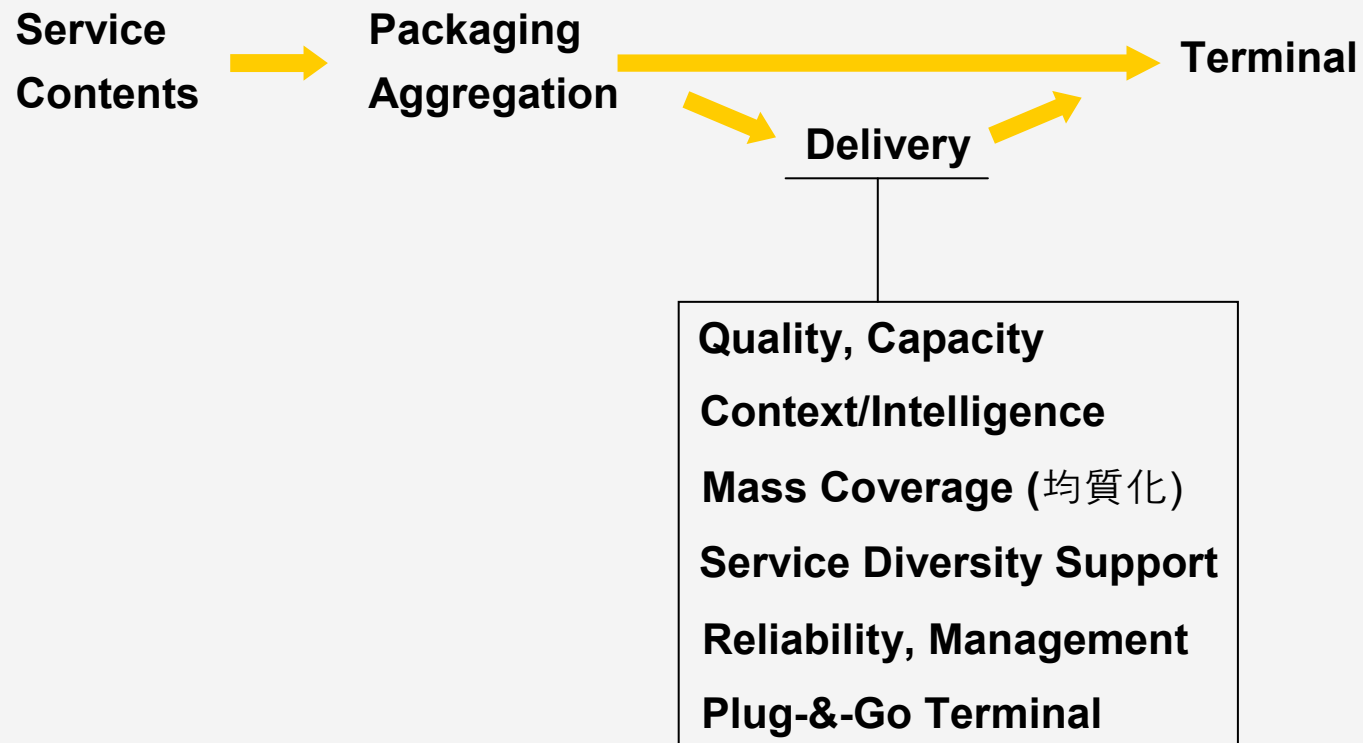
NGN: Making the Value Chain Balanced or more uNbaLancEd?

Too costly, per-service network architecture

Single/simple/cost-effective network infrastructure for existing & new services

Services

Mobile Networks

PSTN/ISDN

Data/IP Networks

CATV

Existing and newly emerging services

Network control (QoS, Security, IP Mobility)

Multi-Service IP Backbone

Wireless Access

Wireline Access
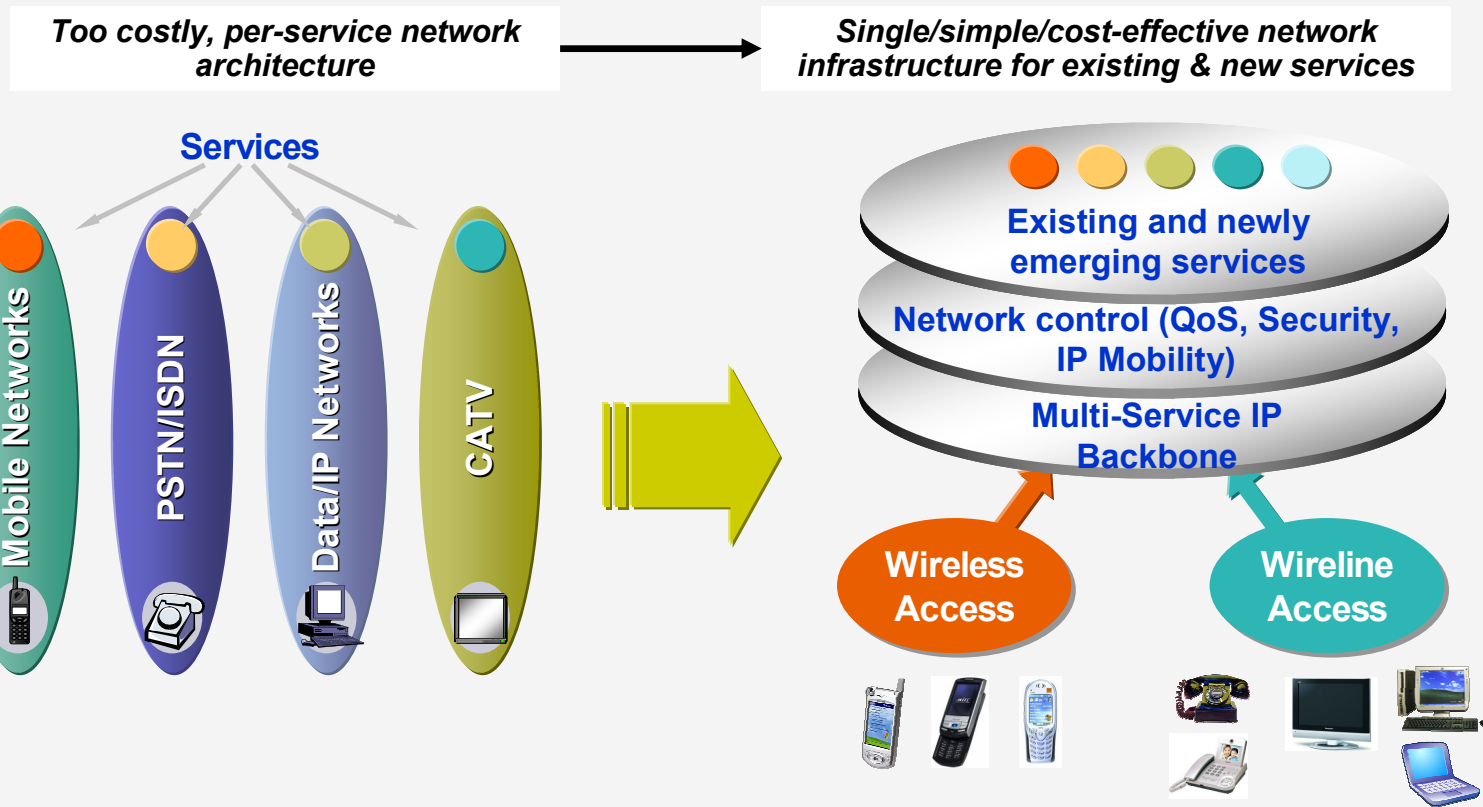
NGN: Delivering the Diversity/Abundance

Service Contents → **Packaging Aggregation** → **Delivery** → **Terminal**

Diverse, converged services

Diverse, converged terminals

Unified delivery

Contents
- • Broadcast over IP
- • Media on-demand
- • Interactive TV
- • Personal/Enterprise casting
- • Interactive learning

- • Multimedia conferencing
- • High quality voice service
- • Multimedia messaging

Computing *Communication* **Commerce/ Finance**

- • Network-based computing
- • Computing on-demand
- • ASP (Application service provider) service

- • On-line banking
- • On-line stock trading

Control
- • Telemetry
- • Remote surveillance
- • Home/office automation

The Network & Platform Revisited

Innovation competition is awaiting

| Present: Separate Service Competition	Bundle Competition	Converged Service Competition
App ↔ App	App → App	App
Broadcast ↔ Broadcast	Broadcast → Broadcast	Broadcast
Voice ↔ Voice	Voice → Voice	Voice/Video
Delivery ↔ Delivery	Delivery → Delivery	Delivery
Marketing Competition	**Marketing Competition**	**Innovation Competition**

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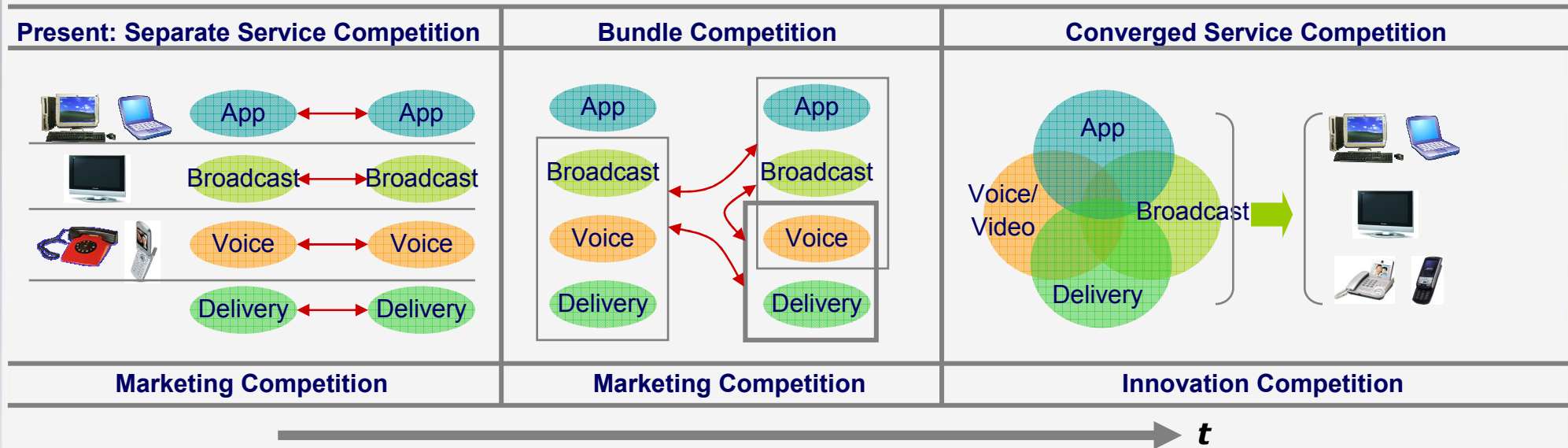
- Differentiation in the network capability
- Fast service creation/delivery platform
- Integrated platform for the upcoming converged services
- Holistic management & maintenance capability

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Focus Change

- Different business: from access to service
- Different focus
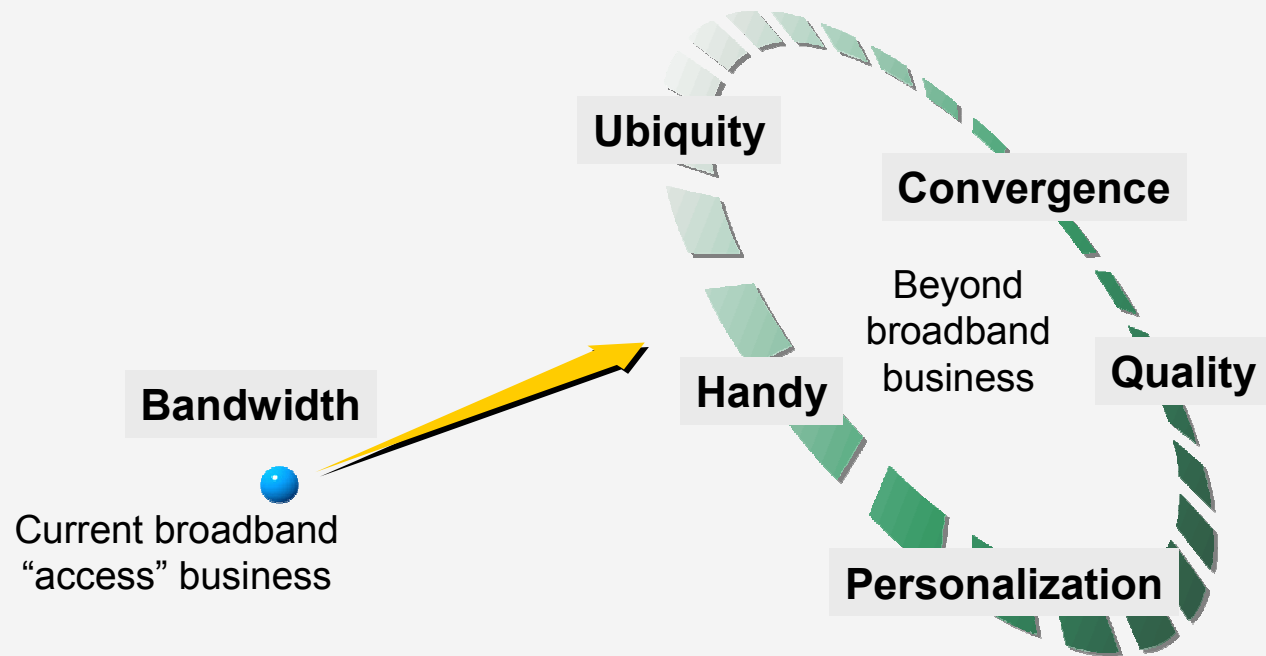
Focus Change (cont.)

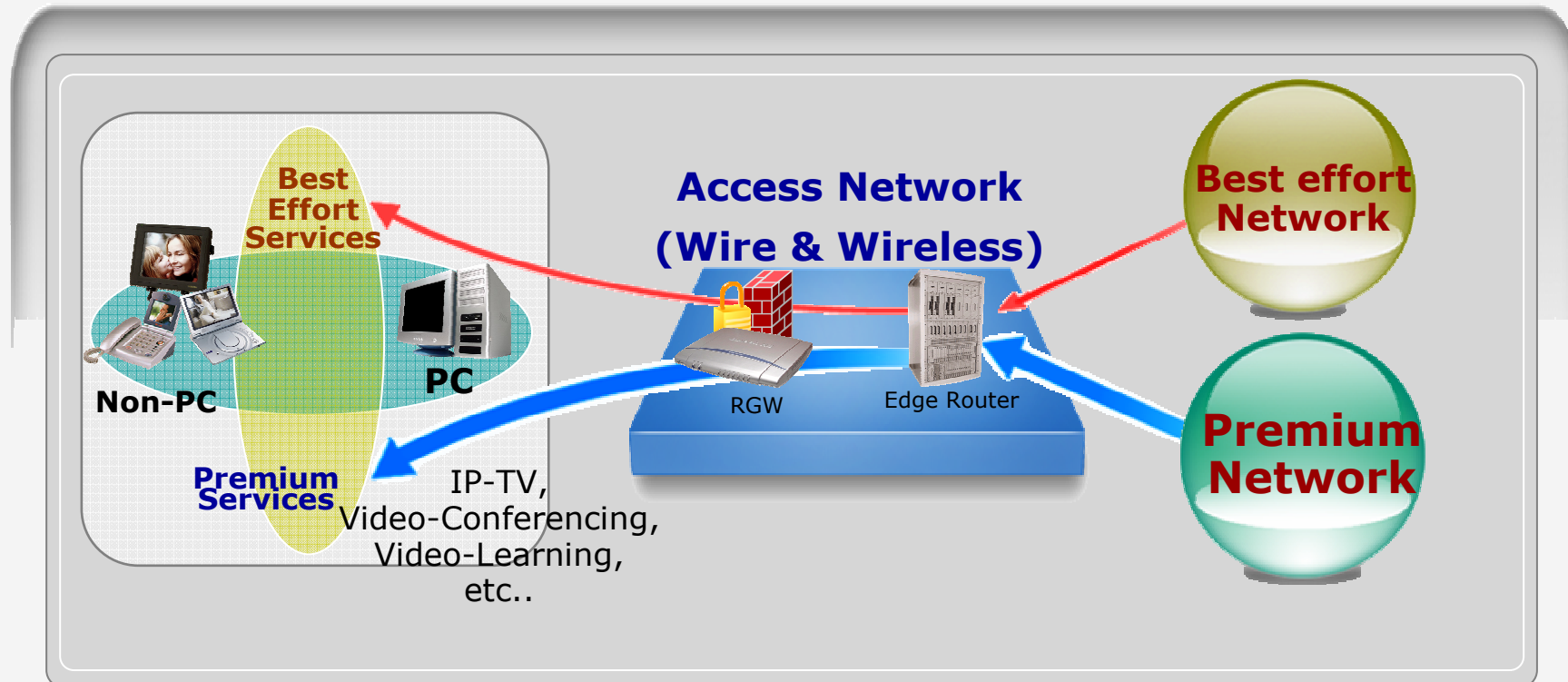|	
Bandwidth	FTTZ, broadband wireless Internet
Ubiquity	broadband wireless coverage, FMC networking, seamless mobility
Convergence	in terminal, in network, in service
Personalization	network/service intelligence, personal info protection
Quality	evolution, interoperability
Handy	easy/consistent UI, plug-&-go installation

Network Resource Controllability

Best Effort Services

Non-PC

PC

Premium Services

IP-TV, Video-Conferencing, Video-Learning, etc..

Access Network (Wire & Wireless)

RGW   Edge Router

Best effort Network
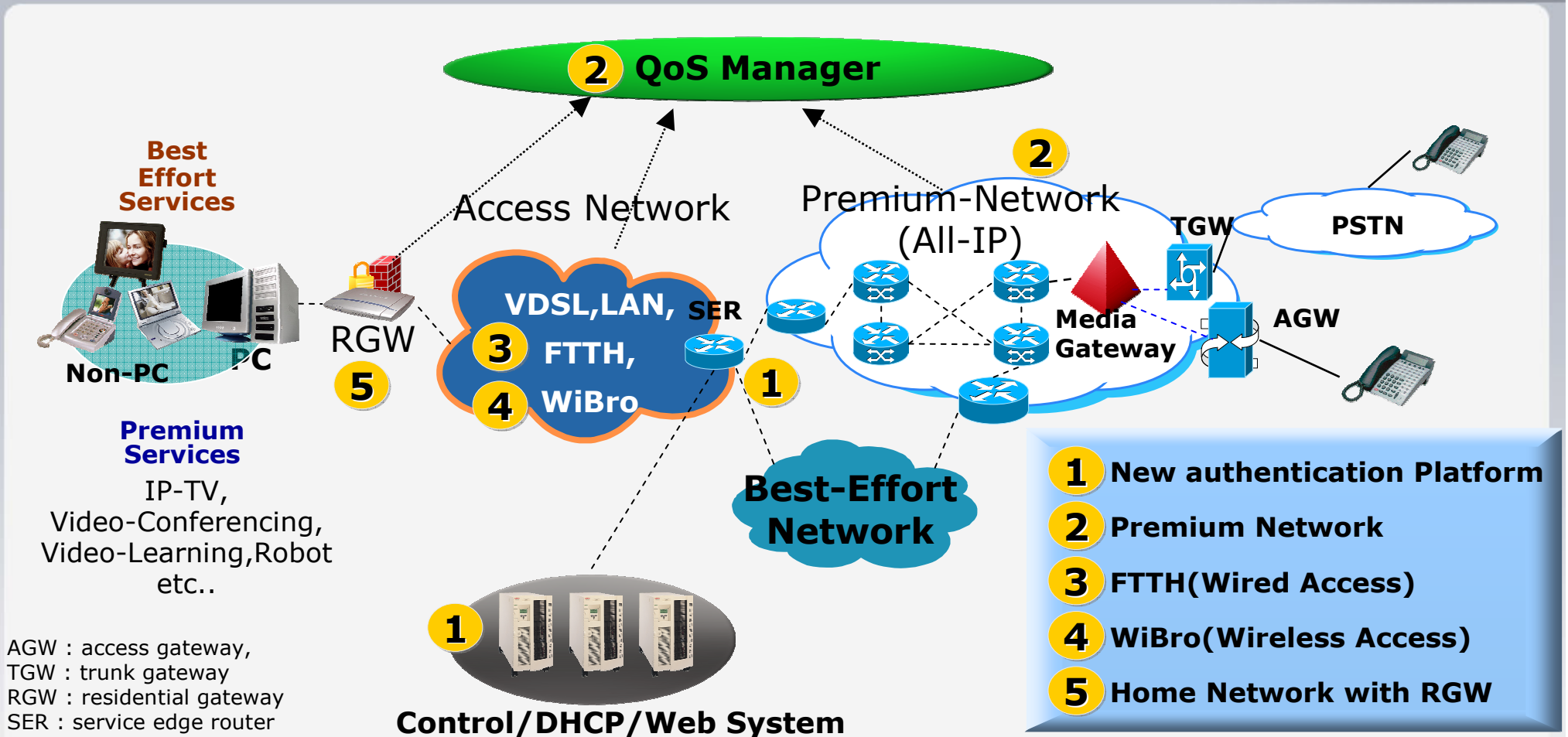
Premium Network

● **Premium network with the high level of QoS & security**

- High-value service through bandwidth control of wire & wireless networks

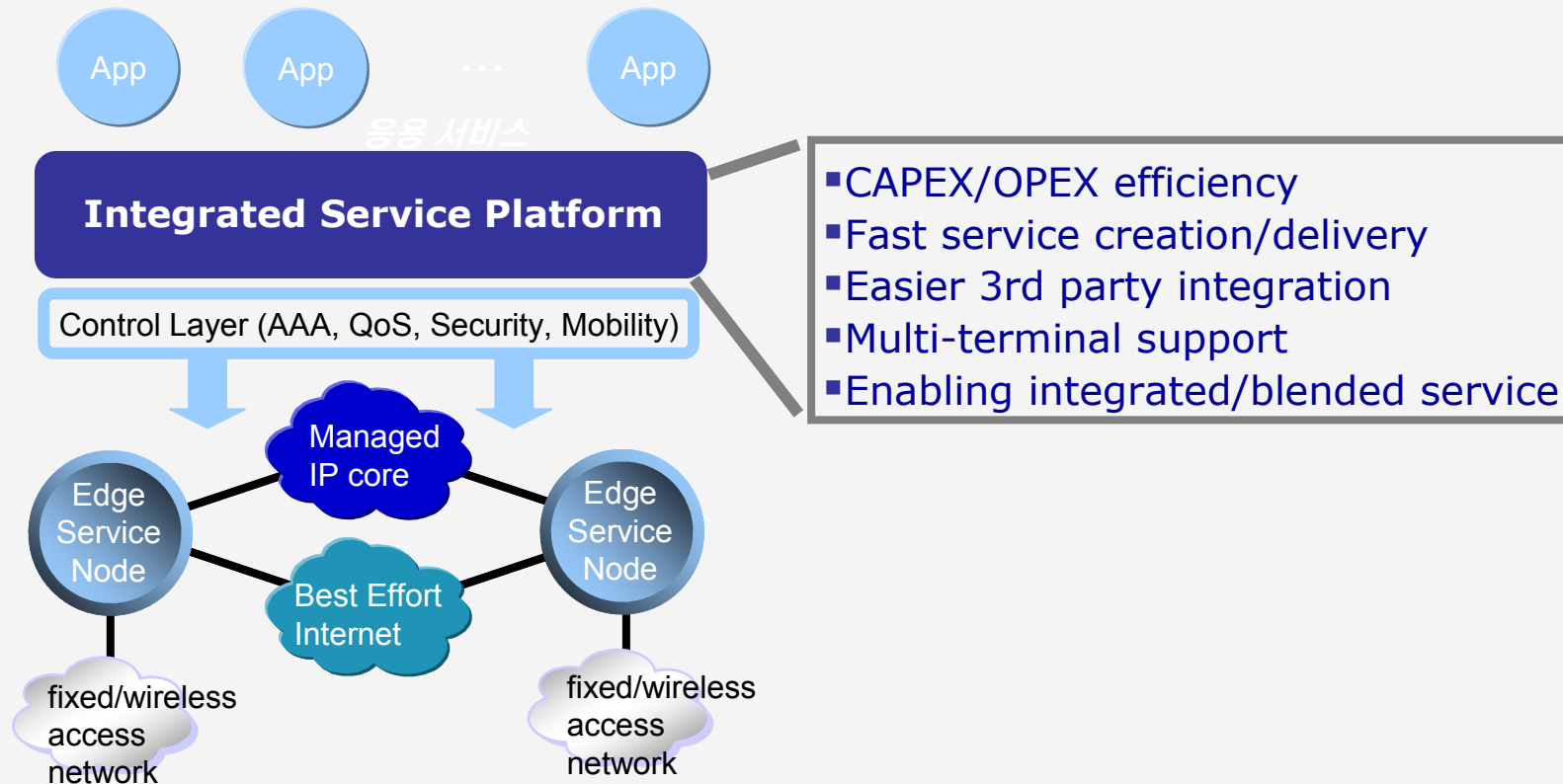- Offer various differentiated service based on Premium network

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Managed Broadband Network & Deployment

Best Effort Services

Non-PC **PC**

Premium Services
IP-TV,
Video-Conferencing,
Video-Learning,Robot
etc..

AGW : access gateway,
TGW : trunk gateway
RGW : residential gateway
SER : service edge router

RGW 5

Access Network

2 **QoS Manager**

VDSL,LAN, 3 **FTTH,** 4 **WiBro** SER

1

Premium-Network (All-IP) 2

TGW **PSTN**

Media Gateway

AGW

Best-Effort Network 1

Control/DHCP/Web System 1

1 **New authentication Platform**
2 **Premium Network**
3 **FTTH(Wired Access)**
4 **WiBro(Wireless Access)**
5 **Home Network with RGW**

● **Managed access & backbone network as the major leverage**

- Strengthen bandwidth control of wire & wireless networks

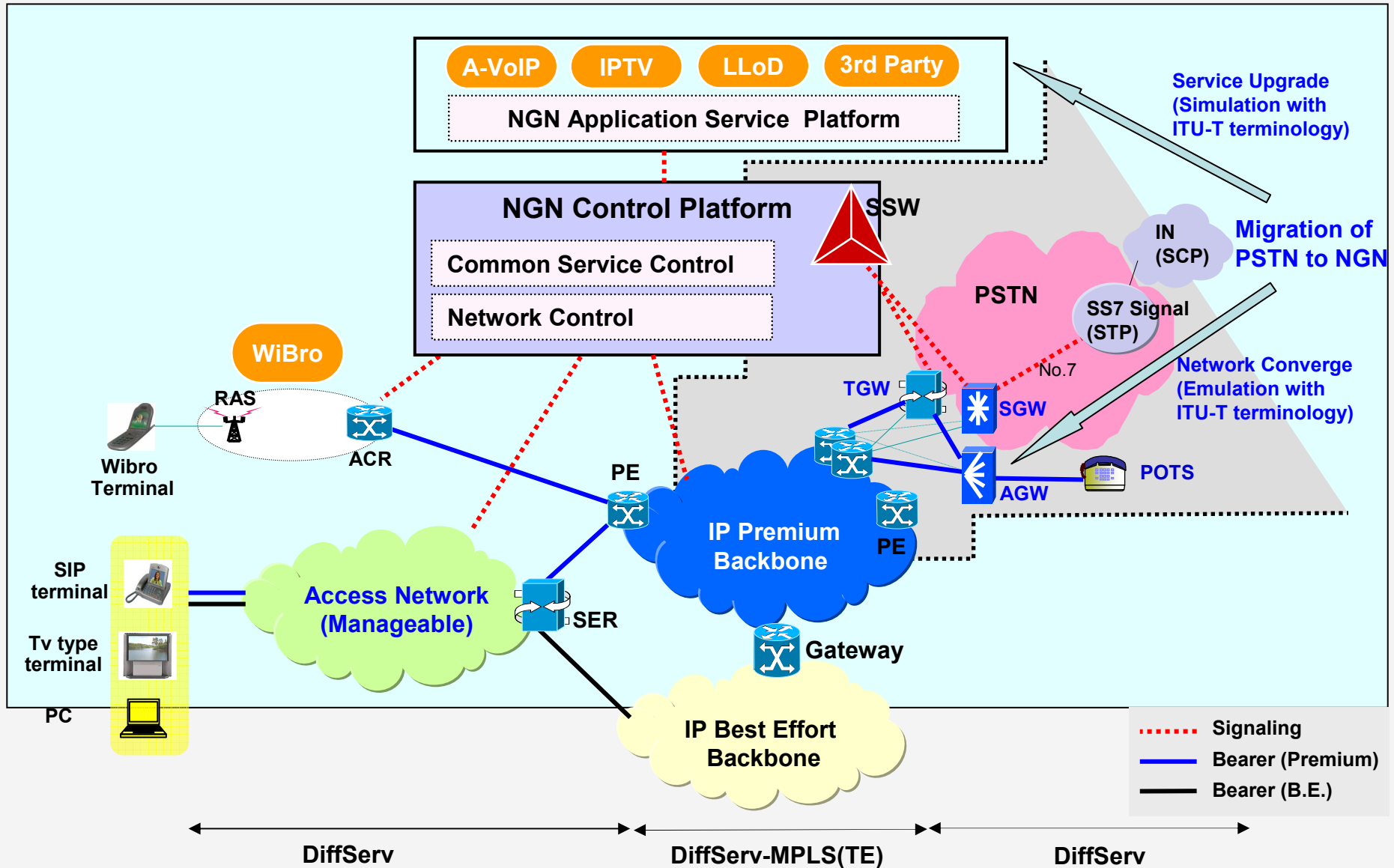- Offer various differentiated services based on the Premium network

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Platform as Another 1st Class Asset

App   App   ...   App

응용 서비스

Integrated Service Platform

Control Layer (AAA, QoS, Security, Mobility)

Managed IP core

Edge Service Node

Best Effort Internet

Edge Service Node

fixed/wireless access network

fixed/wireless access network

- CAPEX/OPEX efficiency
- Fast service creation/delivery
- Easier 3rd party integration
- Multi-terminal support
- Enabling integrated/blended service

History is repeating...

- Telecom Information Networking Architecture (TINA) in the ATM+Corba era
- Integrated Service Platform in the IP+Web Service era

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KT NGN

NGN Application Service Platform
- A-VoIP
- IPTV
- LLoD
- 3rd Party

NGN Control Platform
- Common Service Control
- Network Control

SSW

Service Upgrade
(Simulation with
ITU-T terminology)

Migration of
PSTN to NGN

Network Converge
(Emulation with
ITU-T terminology)

PSTN

IN (SCP)

SS7 Signal (STP)

No.7

TGW

SGW

AGW

POTS

WiBro

RAS

Wibro Terminal

ACR

PE

IP Premium Backbone

PE

SIP terminal

Tv type terminal

PC

Access Network (Manageable)

SER

Gateway

IP Best Effort Backbone

Signaling
Bearer (Premium)
Bearer (B.E.)

DiffServ   DiffServ-MPLS(TE)   DiffServ

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Design Concept

- **Efficient accommodation of multiple services over the converged net**

- **Appropriate for the layered structure of NGN**

  - removing the complexity application-driven holistic design
  - considerations on the new services and additional network resources

service traffic design

- traffic modeling
- end-to-end traffic forecasting
- service platform capacity

control network design

- control node/link capacity
- redundancy plan
- optimal allocation (capacity, reliability)

IP transport network design

- access & backbone capacity
- both managed and best effort traffic
- reliability
- opex-efficient

PSTN migration design

- e2e traffic forecasting
- node/link capacity
- allocation

Summary

- **Balanced value chain for NGN-based market realization**

- **Innovation competition in the converged service era**

- **Right infra for the right service**

- **Network & platform design**

Thank You !