NGN Business Models

Chae Sub Lee
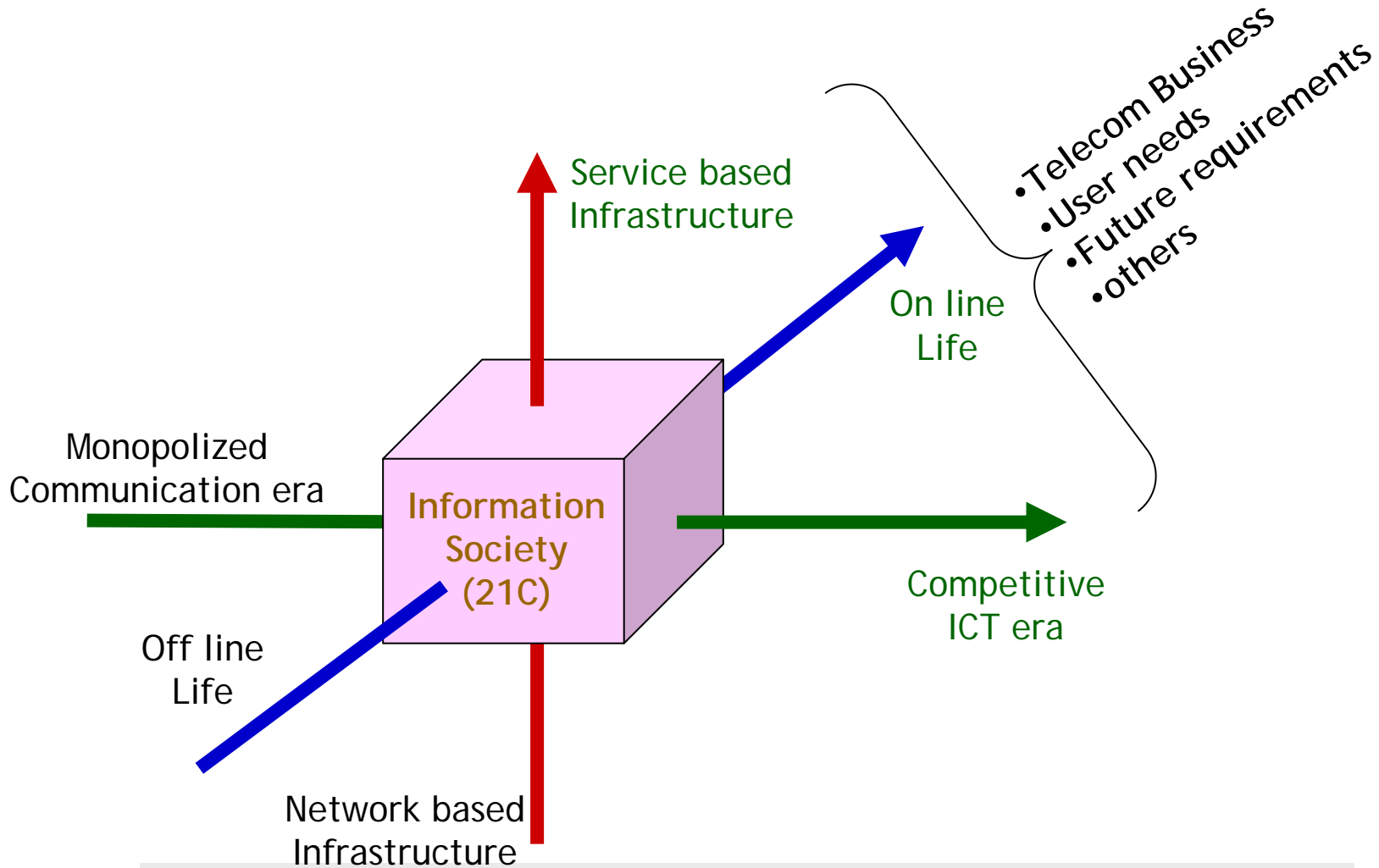
Vice-Chairman of ITU-T SG13

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1. Why need Next Generation?
2. Key trends in Telecommunications
3. Impacts of NGN
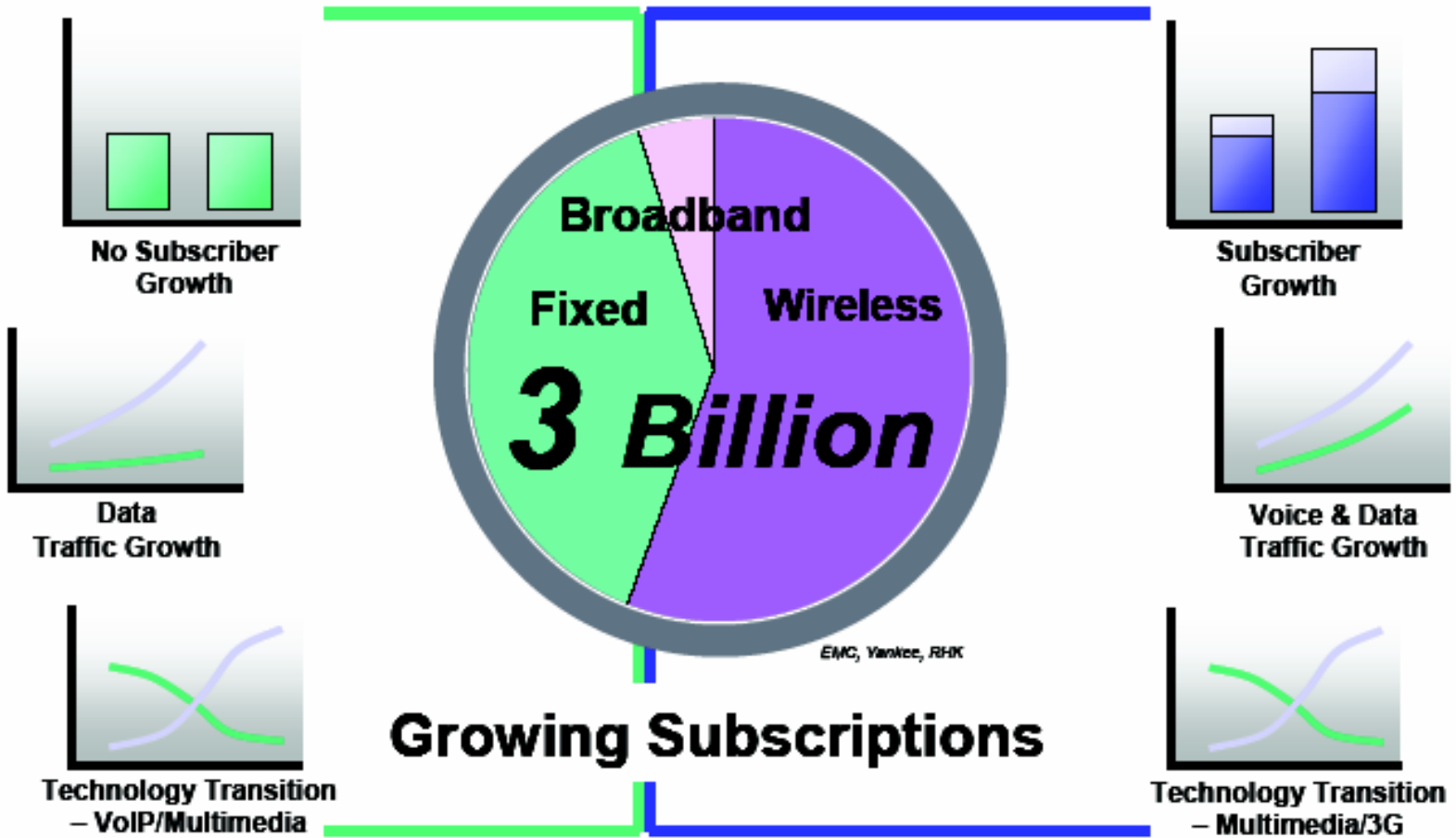4. NGN Configurations and Players
5. Utilization of NGN
6. Conclusion

Success, Problems or Dilemmas?

Service based
Infrastructure

On line
Life

- Telecom Business
- User needs
- Future requirements
- others

Monopolized
Communication era

Information Society (21C)

Competitive
ICT era

Off line
Life

Network based
Infrastructure

Telecom Market Today

No Subscriber Growth

Data Traffic Growth

Technology Transition – VoIP/Multimedia

Broadband

Fixed

Wireless

3 Billion

EMC, Yankee, RHK

Subscriber Growth

Voice & Data Traffic Growth

Technology Transition – Multimedia/3G

Growing Subscriptions

What is keeping SP CEOs awake at night?

o Revenue is saturated or declining for most core products

o Competition is increasing in all markets

o Google, Skype et al are creating a new kind of competitive landscape → Venice Project
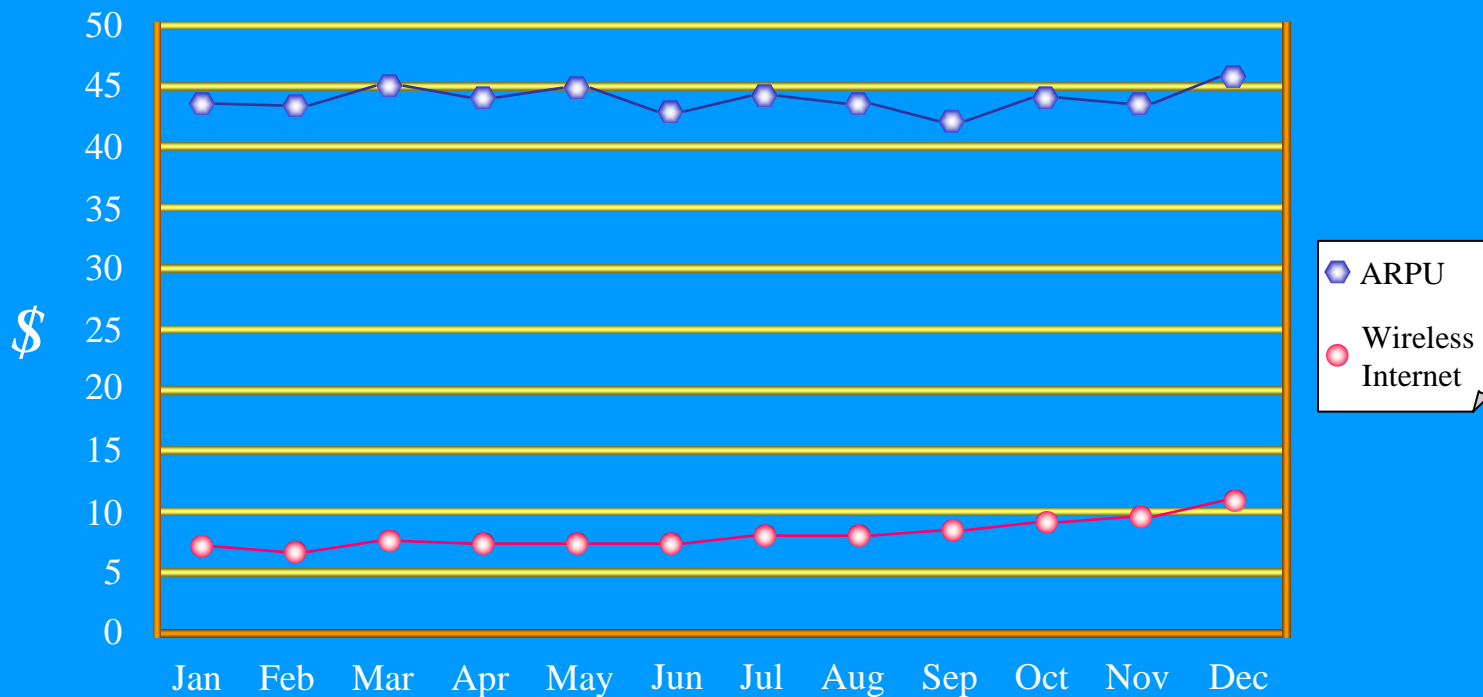
o Costs are too high

o We need a solution NOW

*Source : "NGN: an answer to all end users' problems?", Chris Lewis, NGN Industry Event, London, UK 11.2005

But even Mobile Business…

ARPU of SK Telecom in Korea
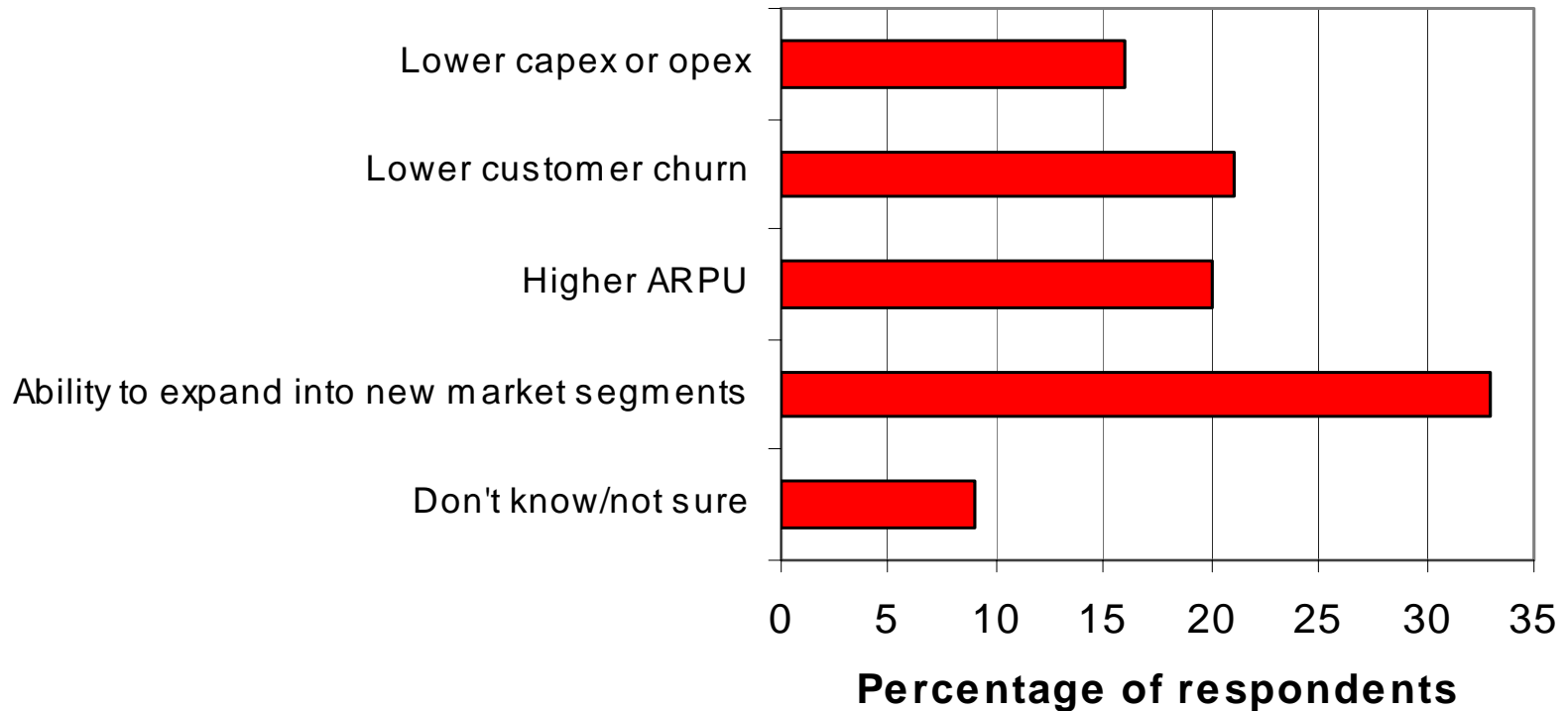

Source: SK telecom

ARPU Analysis

o Analysis means

- Subscribers saturated in Korea
- ARPU increases little and slightly
  - Voice revenue keeps stagnant
  - Wireless data revenue has jumped three fold over the past three years
  - But ARPU doesn't increase that much because of price reduction

No clear reason, but want…..

What is the main benefit of FMC for telecom service providers?

Percentage of respondents, bar chart:
- Lower capex or opex: ~16
- Lower customer churn: ~21
- Higher ARPU: ~20
- Ability to expand into new market segments: ~33
- Don't know/not sure: ~9

Percentage of respondents

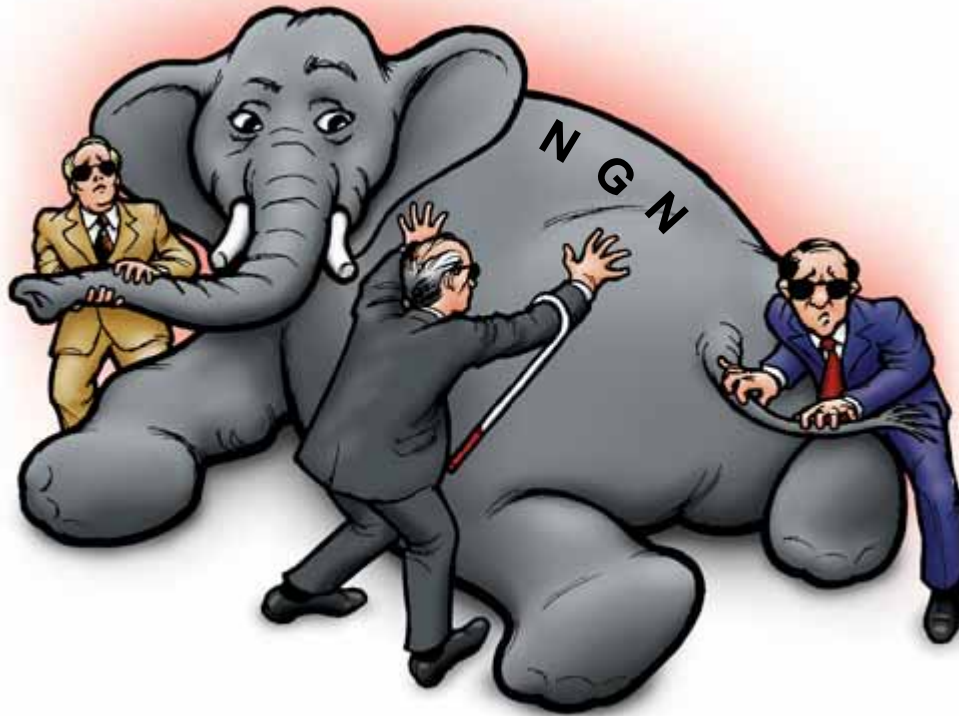*Source : "NGN, IMS and FMC", Graham Finie, NGN Industry Event, London, UK 11.2005

Everybody needs next, so… NGN

Integrated
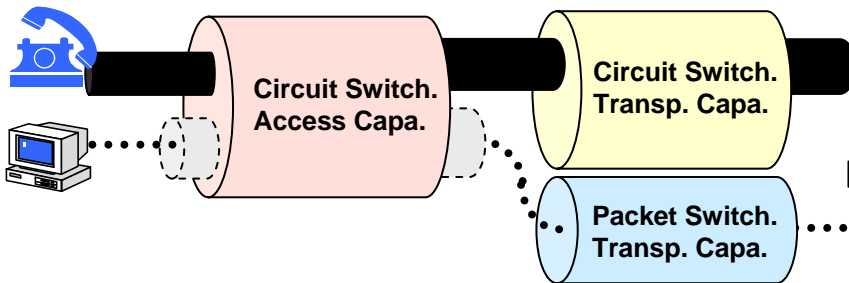Engineering

Intelligent
Office

Moves, adds
and changes

Mobile Workers

Teleworking

*Source : "NGN: an answer to all end users' problems?",
Chris Lewis, NGN Industry Event, London, UK 11.2005

Packet based Environments
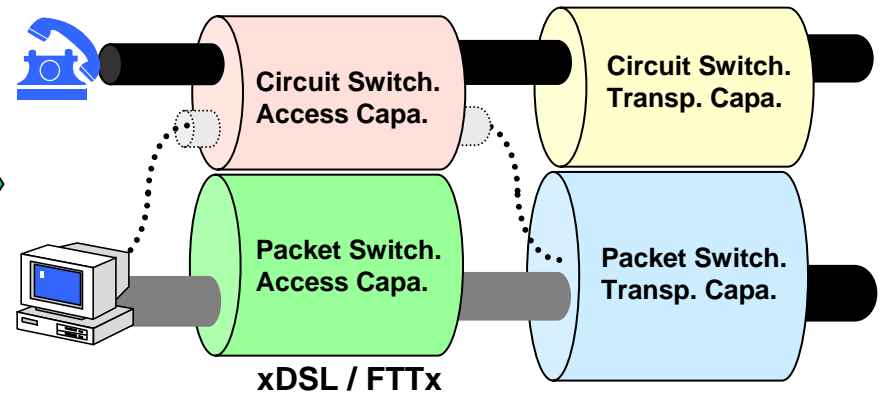
Past : Seper. of Voice & Data Transp.
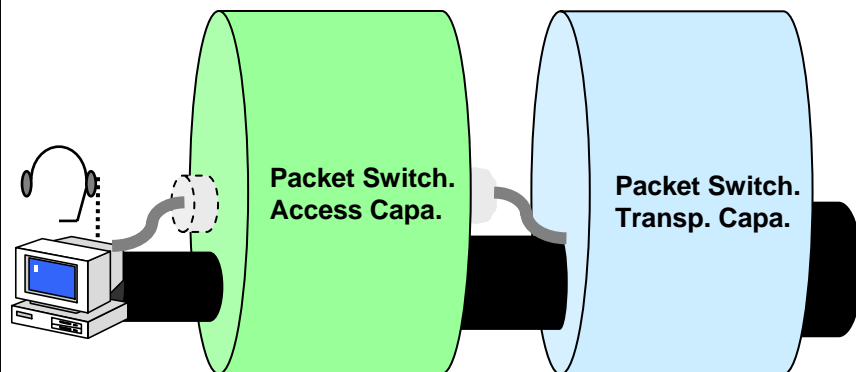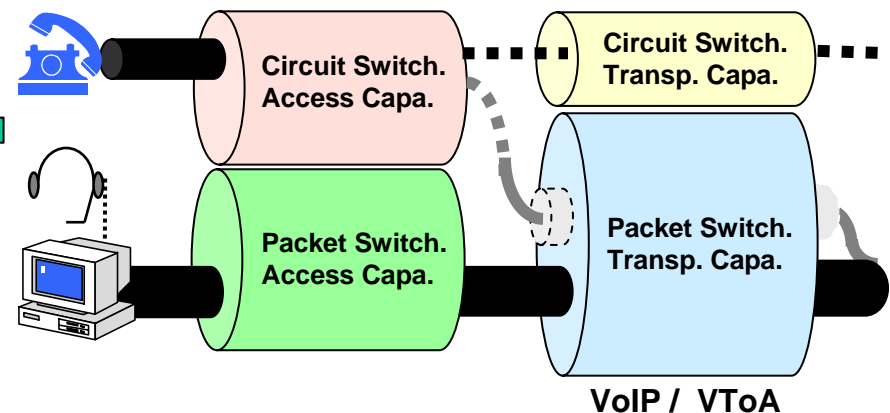
Circuit Switch. Access Capa.

Circuit Switch. Transp. Capa.

Packet Switch. Transp. Capa.

Present : Sep. of V & D Access

Circuit Switch. Access Capa.

Circuit Switch. Transp. Capa.

Packet Switch. Access Capa.

Packet Switch. Transp. Capa.

xDSL / FTTx

Future : Integration of V & D Access and Transp.

Packet Switch. Access Capa.

Packet Switch. Transp. Capa.

Near Future : Integration of V & D Transport

Circuit Switch. Access Capa.

Circuit Switch. Transp. Capa.

Packet Switch. Access Capa.

Packet Switch. Transp. Capa.

VoIP / VToA

Converged User Terminals

Phone

FAX

PC

TV

PC FAX

PC TV

4G Mobile-phone/PDA

Multimedia PC
(Desk Top / Lap Top)

Data inc.
Everything

- Real Time DATA
- Non-Real Time DATA
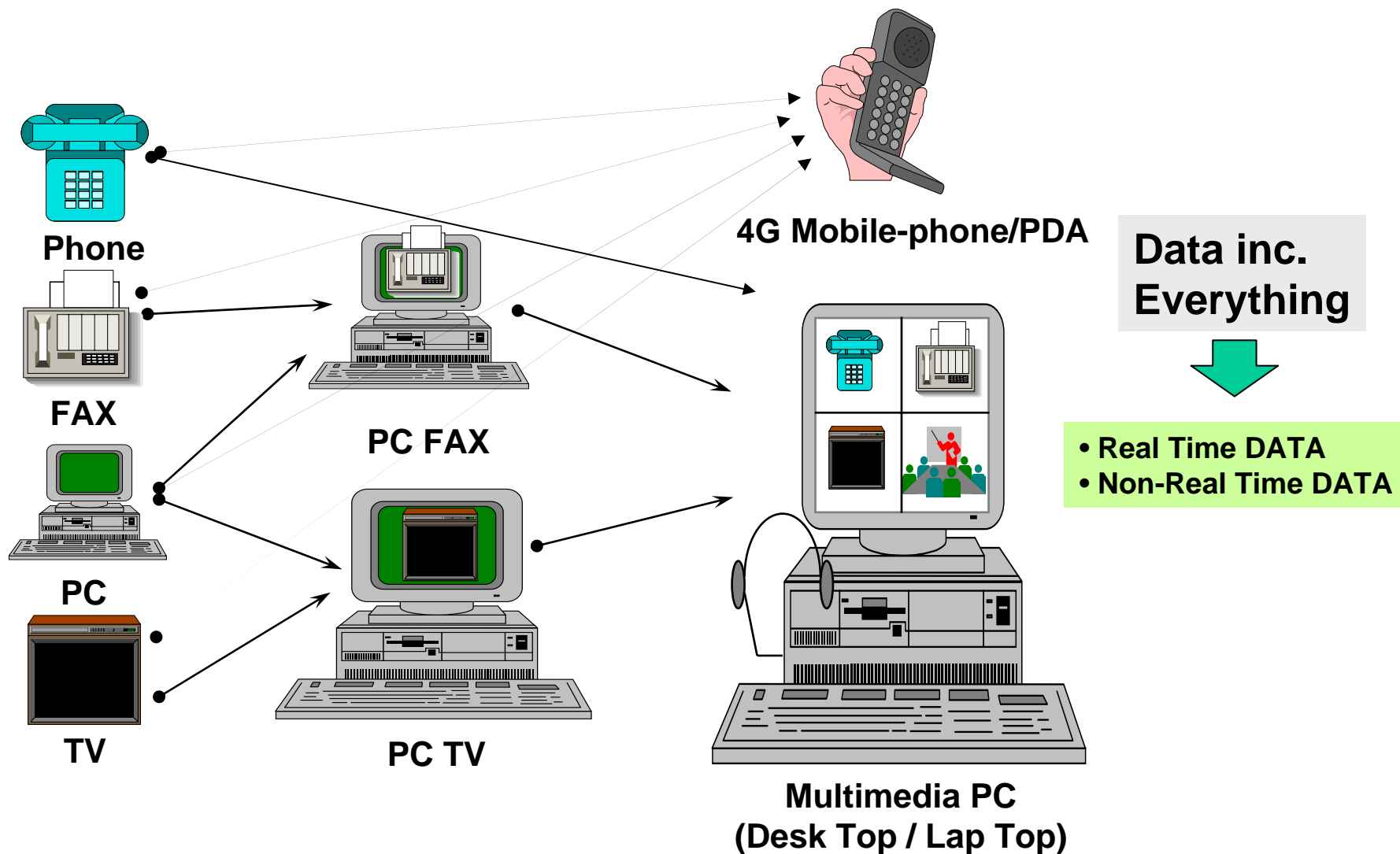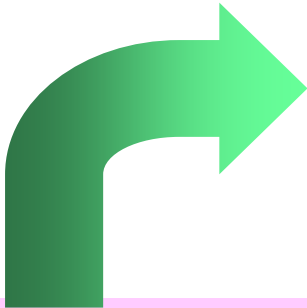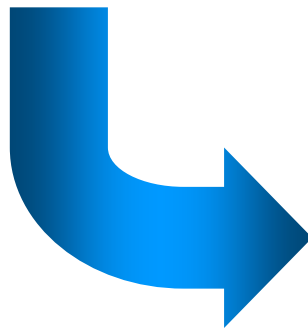
Competition in Enterprises
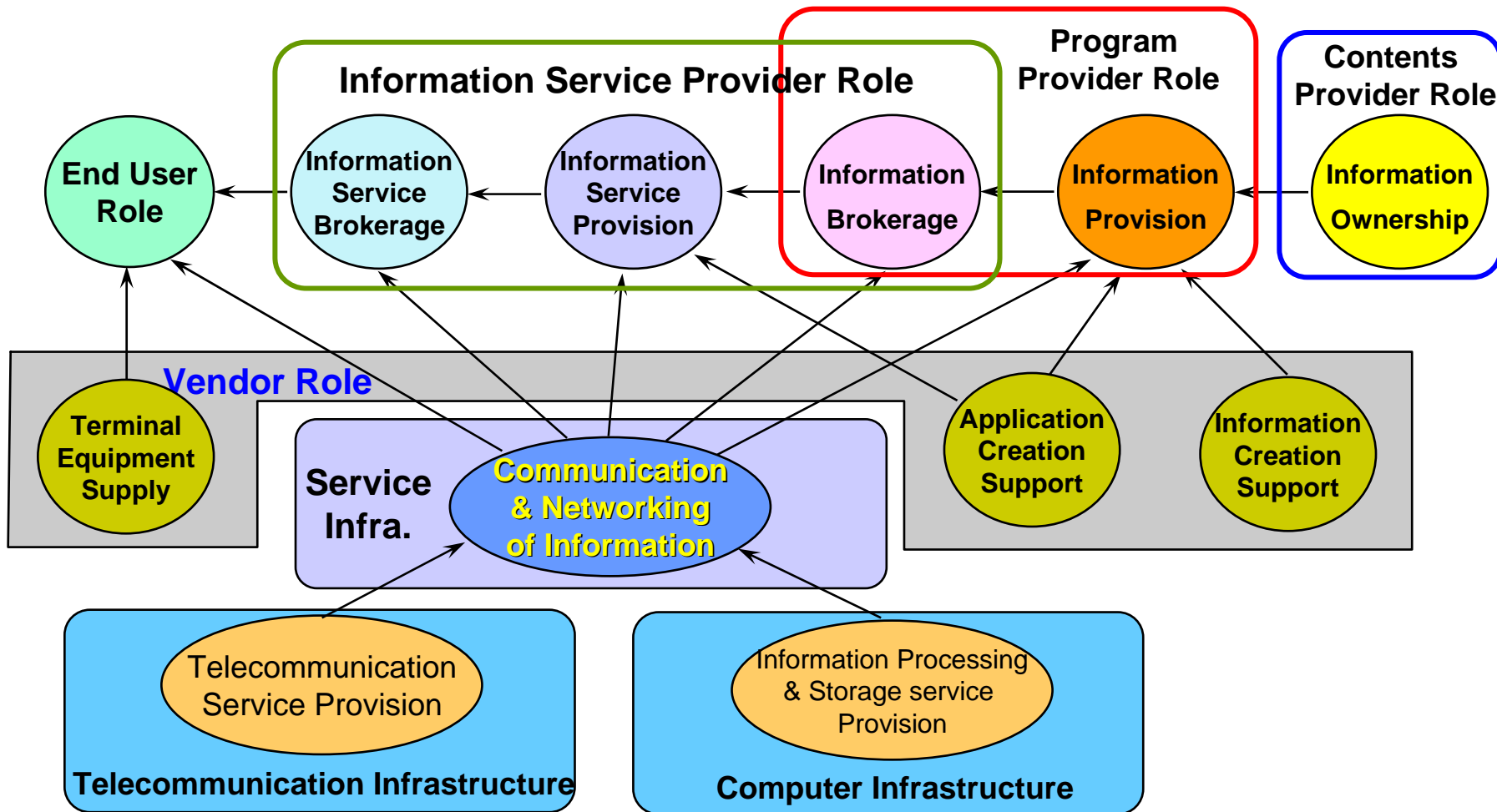
NGN in 4 words...

- by Fixed
- by Mobile
- by Wireless

NGN = Broadband Managed IP Network

- for Services
- for Businesses
- for Players
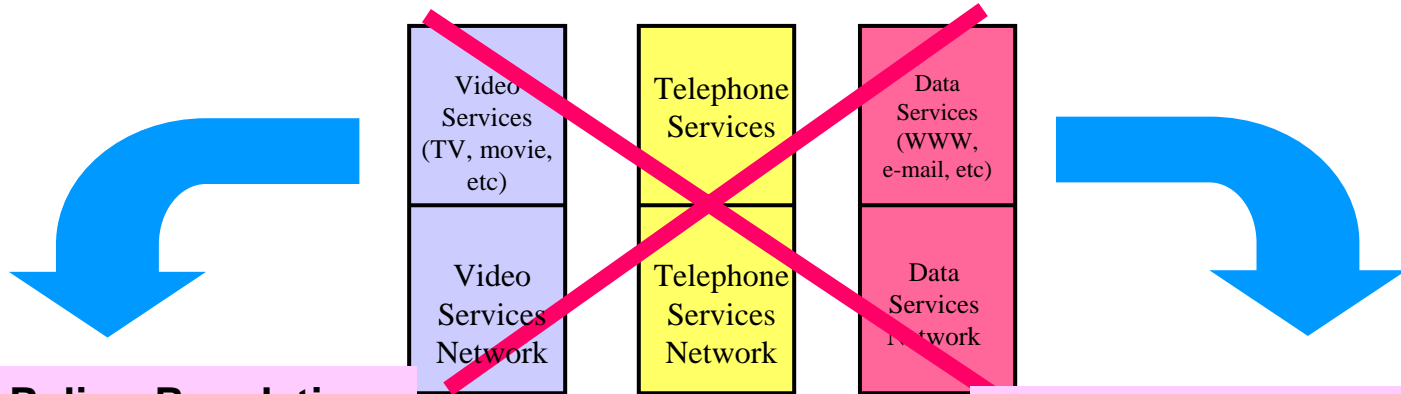- for Users

Key Principles of NGN

- Open architecture: open to support service creation, service updating, and incorporation of service logic provision by third parties and also support "Distributed control" as well as enhanced security and protection.

- Independent provisioning: service provision process should be separated from network operation by using distributed, open control mechanism to promote competition.

- Multiplicity: The NGN functional architecture shall offer the configuration flexibility needed to support multiple access technologies.

Competition and Collaboration

Pre-NGN

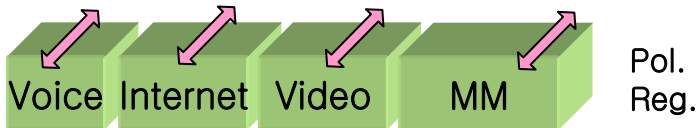| Video Services (TV, movie, etc) | Telephone Services | Data Services (WWW, e-mail, etc) |
| Video Services Network | Telephone Services Network | Data Services Network |

New Policy•Regulation Environment (Horizontal)

New Business Environment (Compositional)

Service-based Pol./Reg.

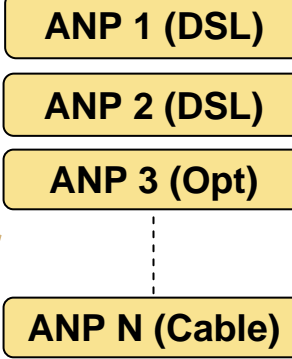Voice | Internet | Video | MM — Pol. Reg.

IP (Future Packet ?) Platform — Pol. X Reg. x

xDSL/Optic based Fixed−Mobile

Resource-based Pol./Reg.

Access Network Provider Domain

Service/Application Provider Domain

SP1 2 3 --- SPm

ANP 1 (DSL)

ANP 2 (DSL)

ANP 3 (Opt)

ANP N (Cable)

User

CNP 1 | CNP 2 | CNP 3
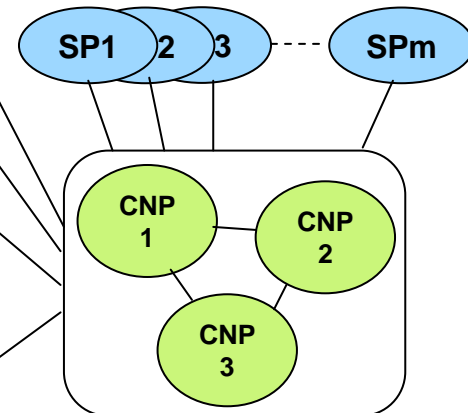
Core Network Provider Domain

Driving Forces from NGN

● Support of New Value Added Services

- **Saturation of both Fixed and Mobile telephone services**
- **Need of Integrated (Fixed+Wireless) and Convergence (Telecom+Broad.)**

● Support of New Service Paradigm

- **Increase of Service requirements (Flex. of Access, Diversity of Service etc.)**
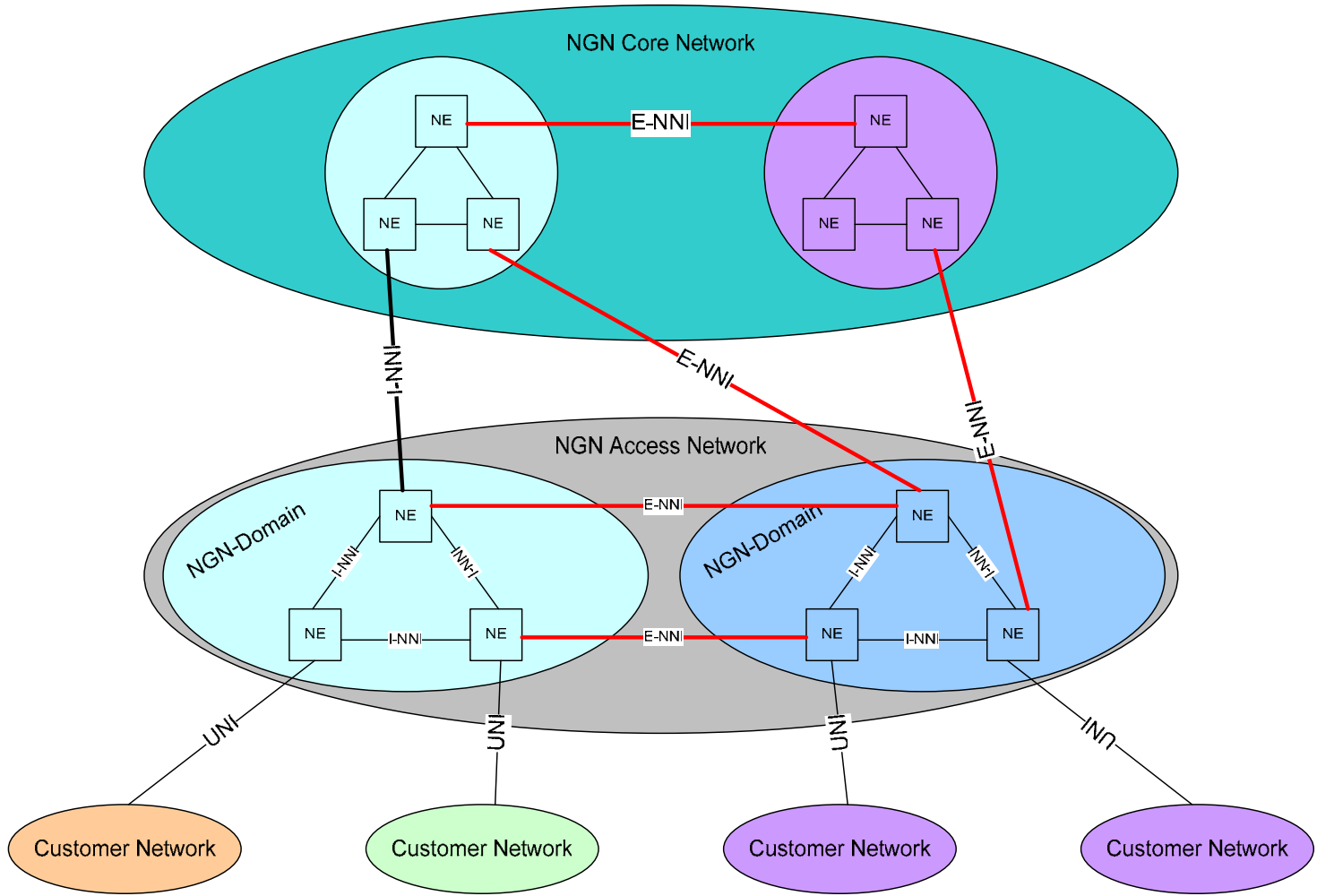- **Increase of High Quality services (Beyond QoS over the Internet)**

● Continue growing energy for IT Business

- **Preparation of New Revenue Stream based on IT Business**
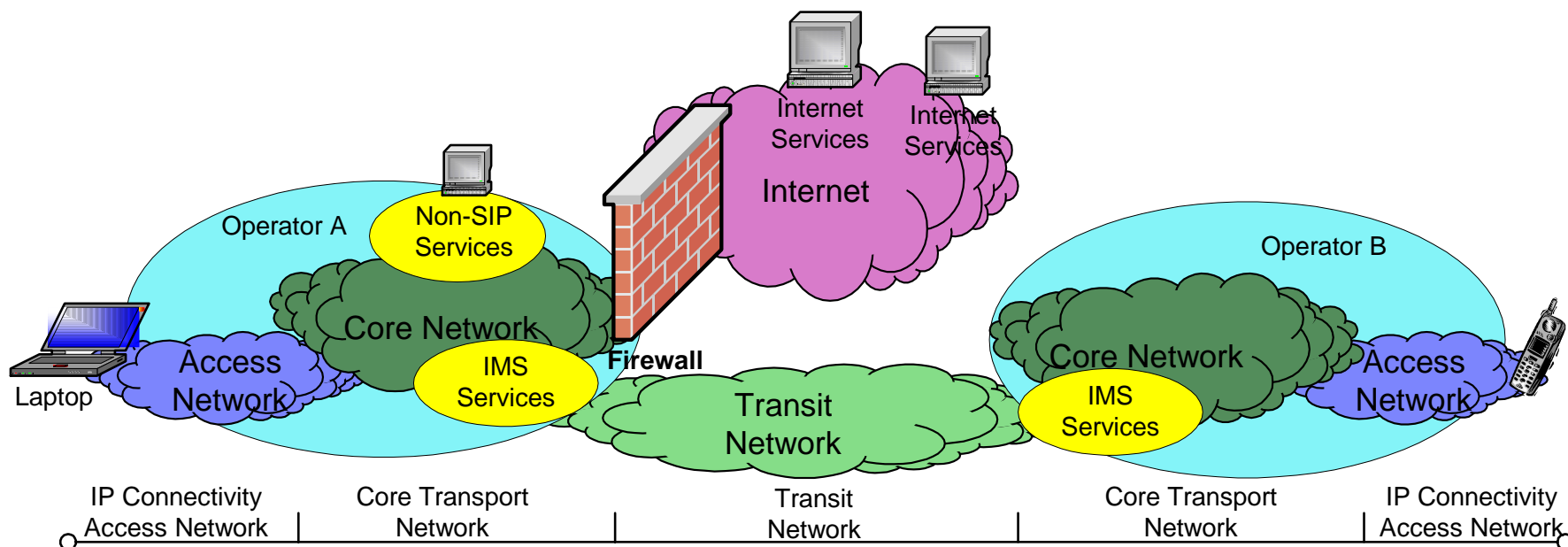- **Development of new high-tech and market**

Overview on NGN configuration

Horizontal view of NGN configuration

Operator A

Non-SIP Services

Internet Services

Internet Services

Internet

Core Network

Firewall

IMS Services

Laptop

Access Network

Transit Network

Operator B

Core Network

IMS Services

Access Network

IP Connectivity Access Network	Core Transport Network	Transit Network	Core Transport Network	IP Connectivity Access Network

Basic NGN Roles and Players

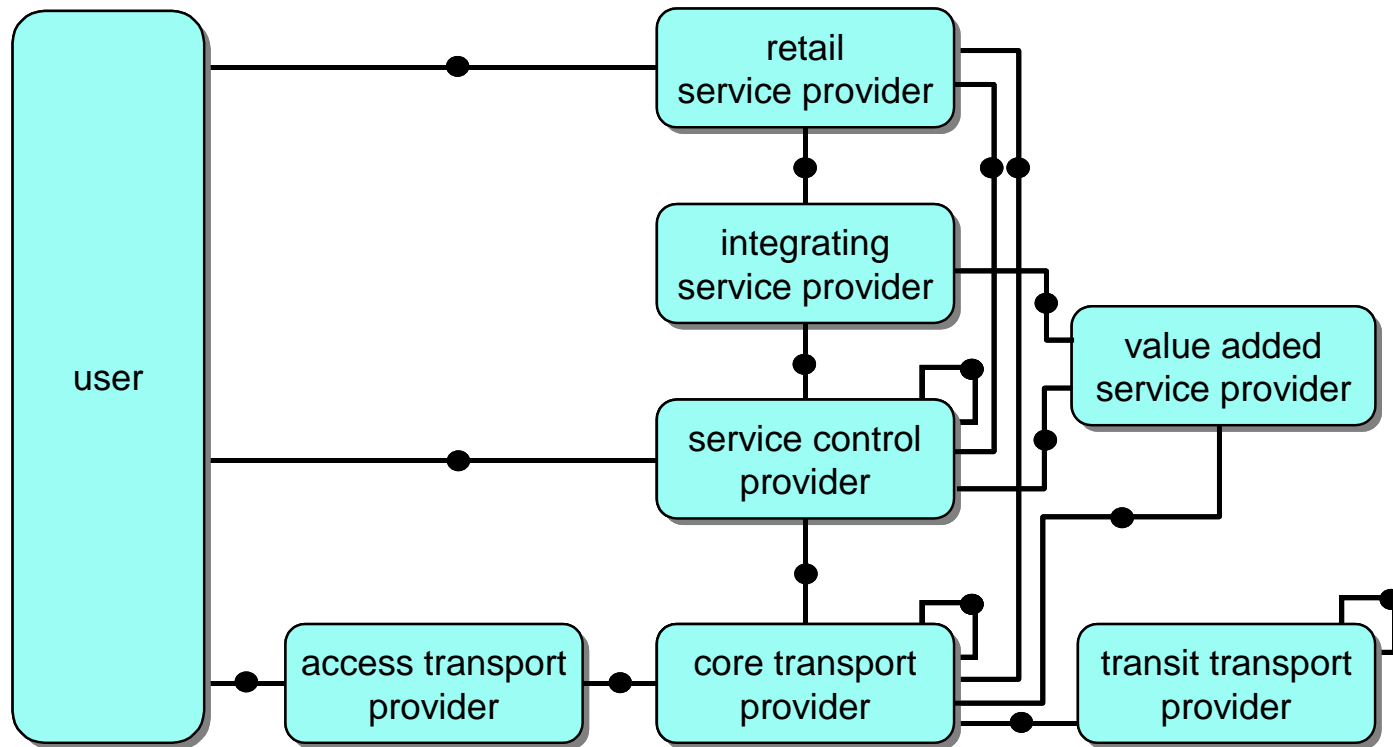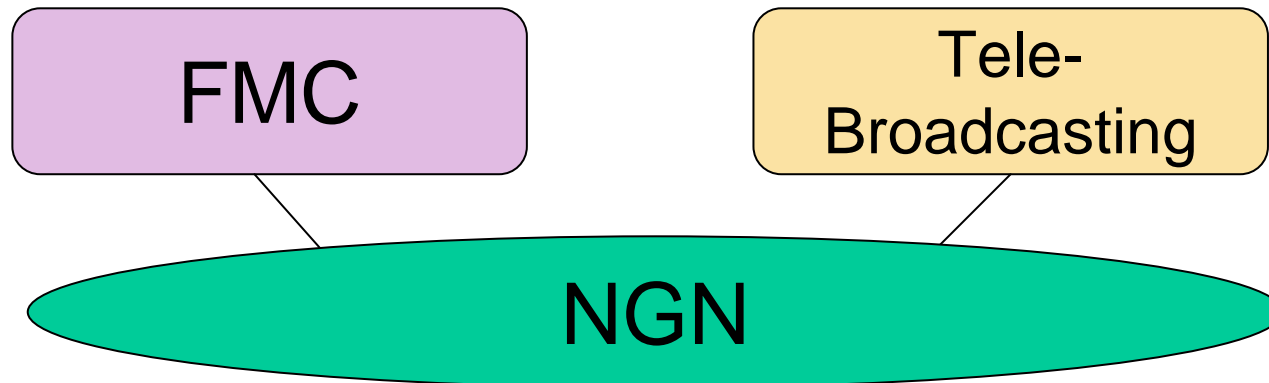|	
——●——	technical relation and reference point
– – – –	commercial relation
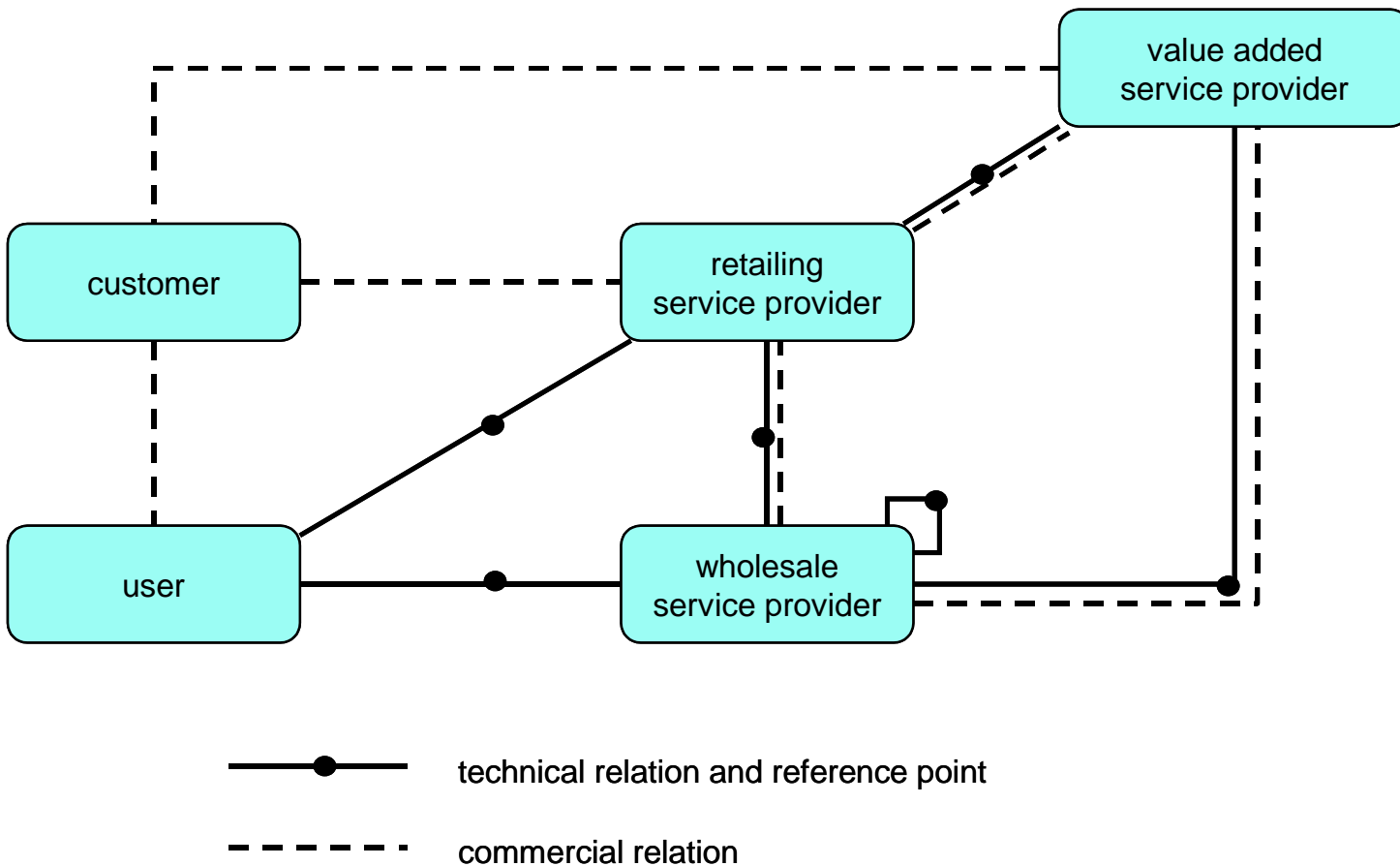
NGN roles: First level of specialization
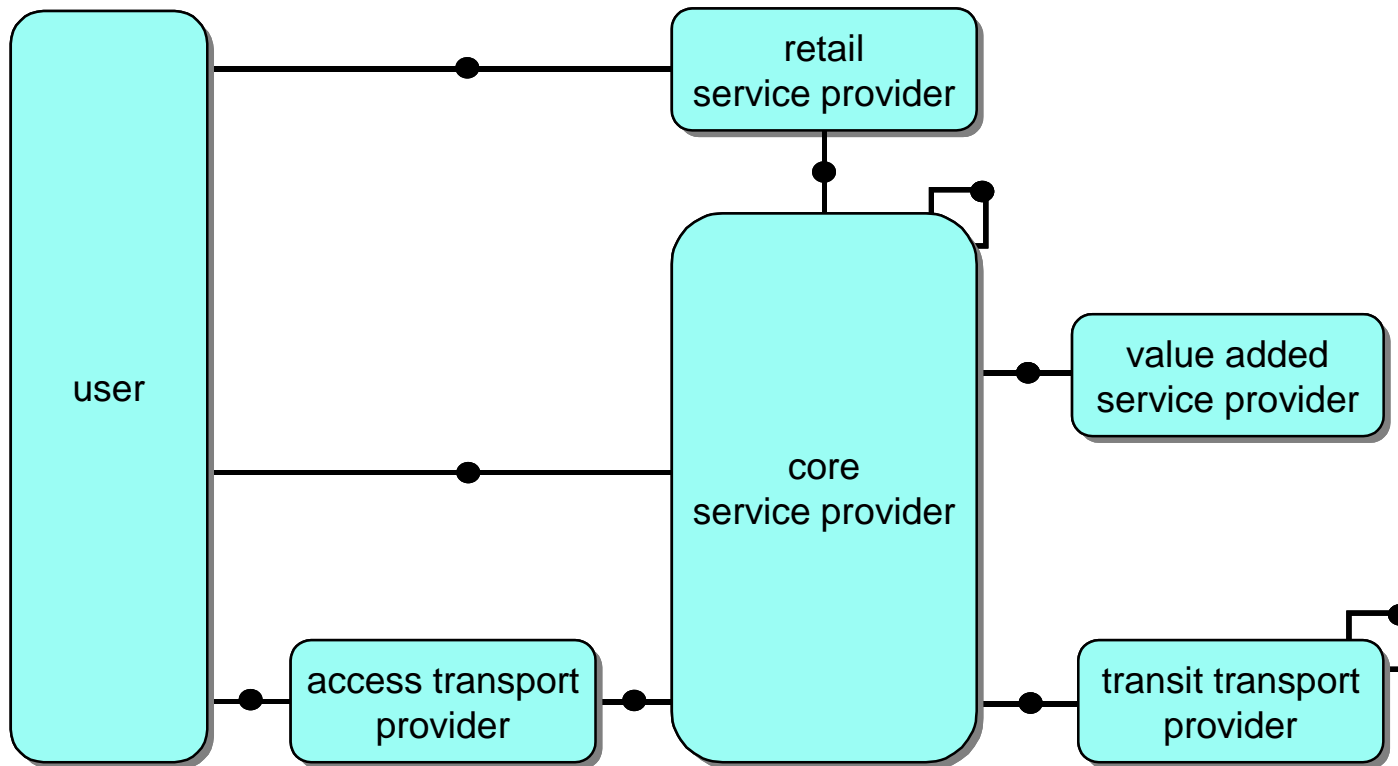
NGN roles: Second level of specialization

NGN; a Convergence Platform

- Combination IP with Broadband accelerating intrinsic convergence
  - Service convergence: Web based service provisioning
  - Network convergence: IP over any broadband transport networks
- Advanced Mobile and Wireless technology initiate business convergence such as Fixed-Mobile convergence
- Broadband Fixed, Wireless and Mobile technology boost another business convergence, called "Multiple Play: Tele-Broadcasting"
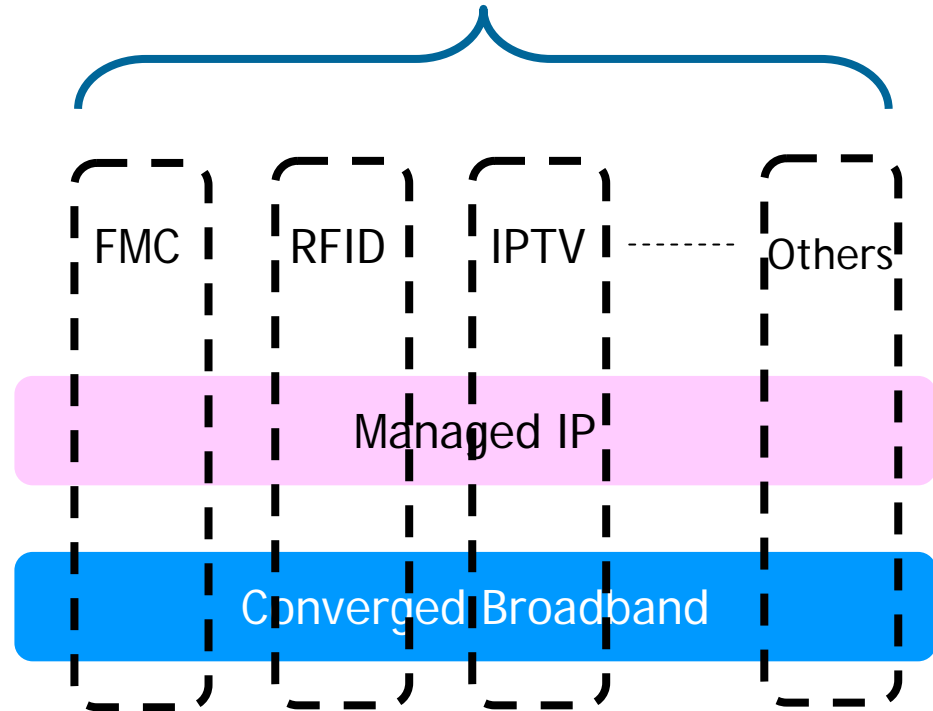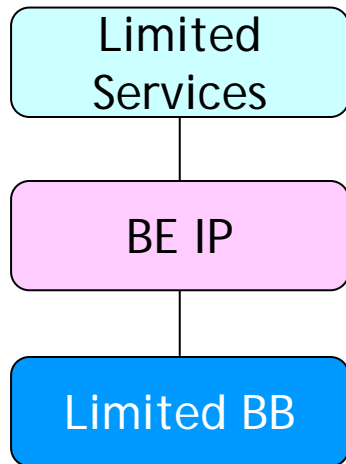
FMC

Tele-Broadcasting

NGN

NGN; Enablers for Convergence

Business/Application oriented projects

FMC   RFID   IPTV ------- Others

Limited Services

BE IP

Limited BB
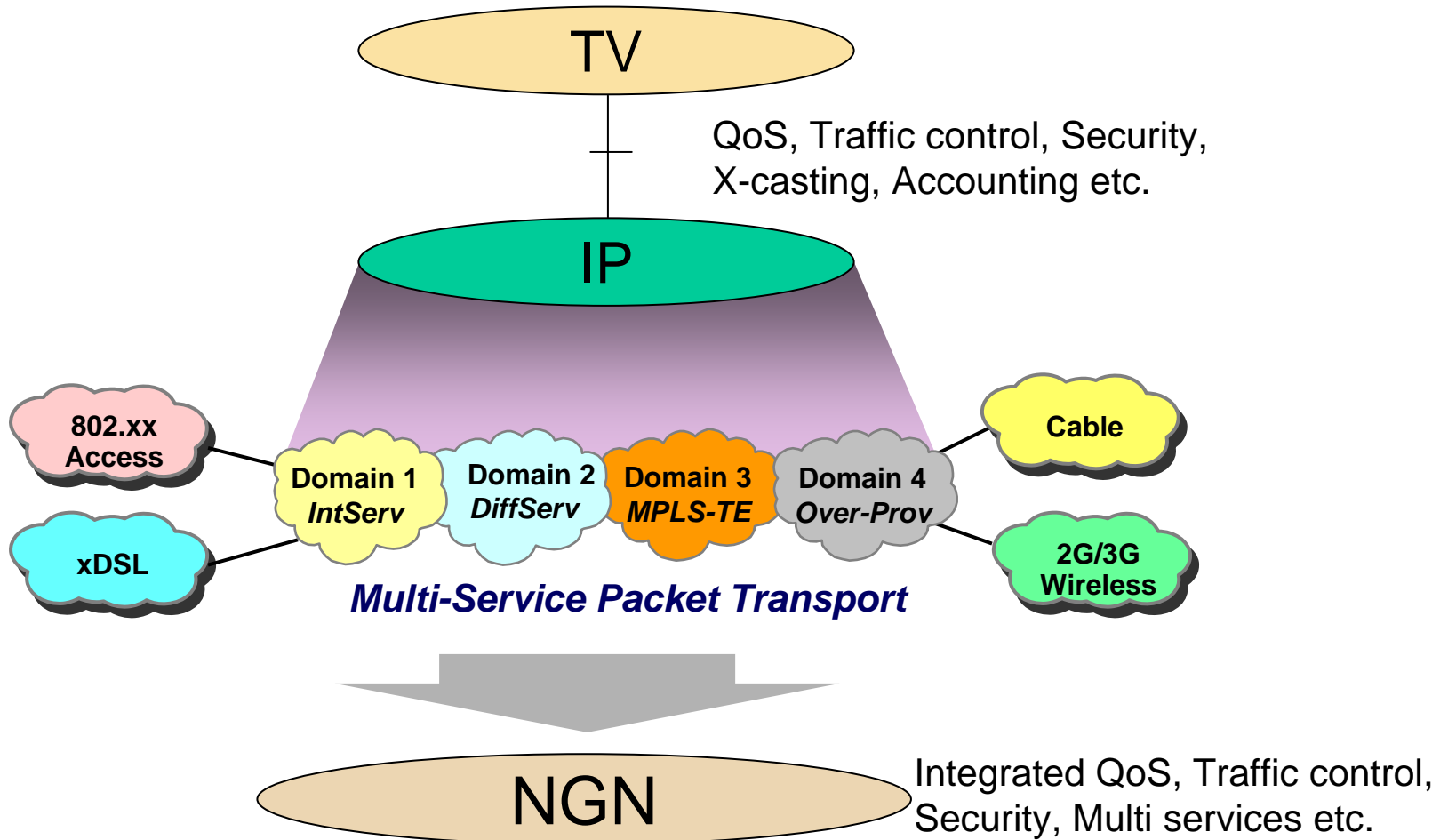
NGN

Managed IP

Converged Broadband

- Simple linkage btw layers
- Simple business relationships
- Simple players

- Simple linkage btw layers with dynamics
- Diverse and Flexible business relationships
- Diverse business models and players

NGN as an Infrastructure for IPTV

TV

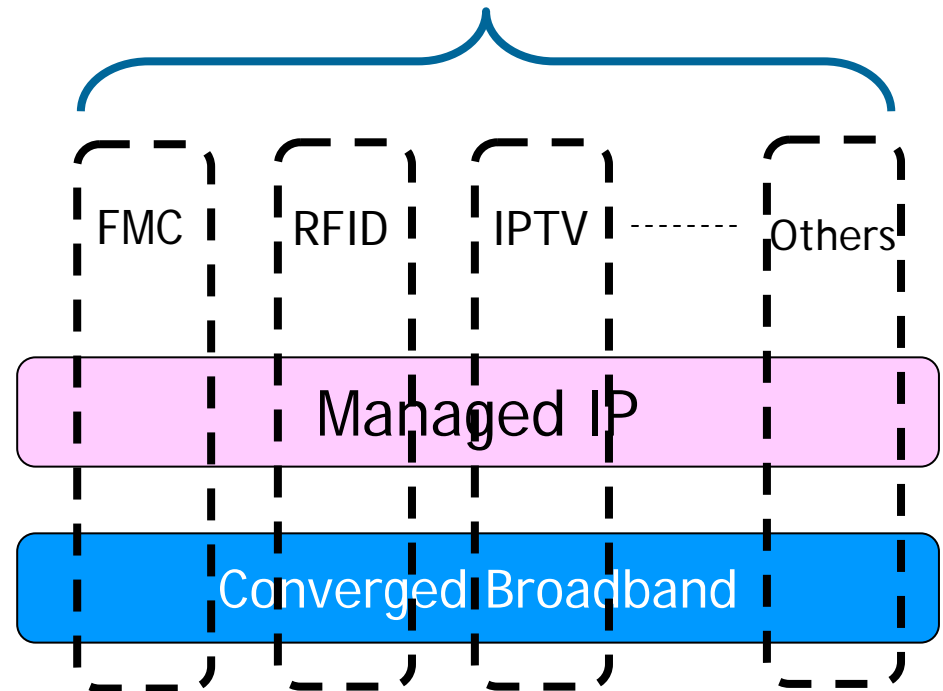QoS, Traffic control, Security, X-casting, Accounting etc.

IP

802.xx Access

xDSL

Domain 1 *IntServ*

Domain 2 *DiffServ*

Domain 3 *MPLS-TE*

Domain 4 *Over-Prov*

Cable

2G/3G Wireless

Multi-Service Packet Transport

NGN

Integrated QoS, Traffic control, Security, Multi services etc.

Next Direction of Global Standardization

Construction for Business/Application
(Project oriented approach)

FMC   RFID   IPTV ------- Others

Managed IP

Implementable Standards
- For Converged Infrastructure
- For Migration

Converged Broadband

Use model of NGN

VoIP | Messaging | N-IDs | IPTV | Others

QoS, Security, Media Handling etc

NGN

Fixed-BB-AN*
Wireless-BB-AN
Mobile-BB-AN
R-BCS-BB-AN**

Broadband Core-T
Broadband Core-T
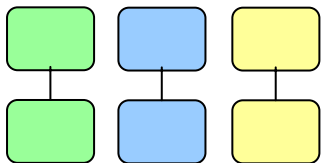
Int-Con.
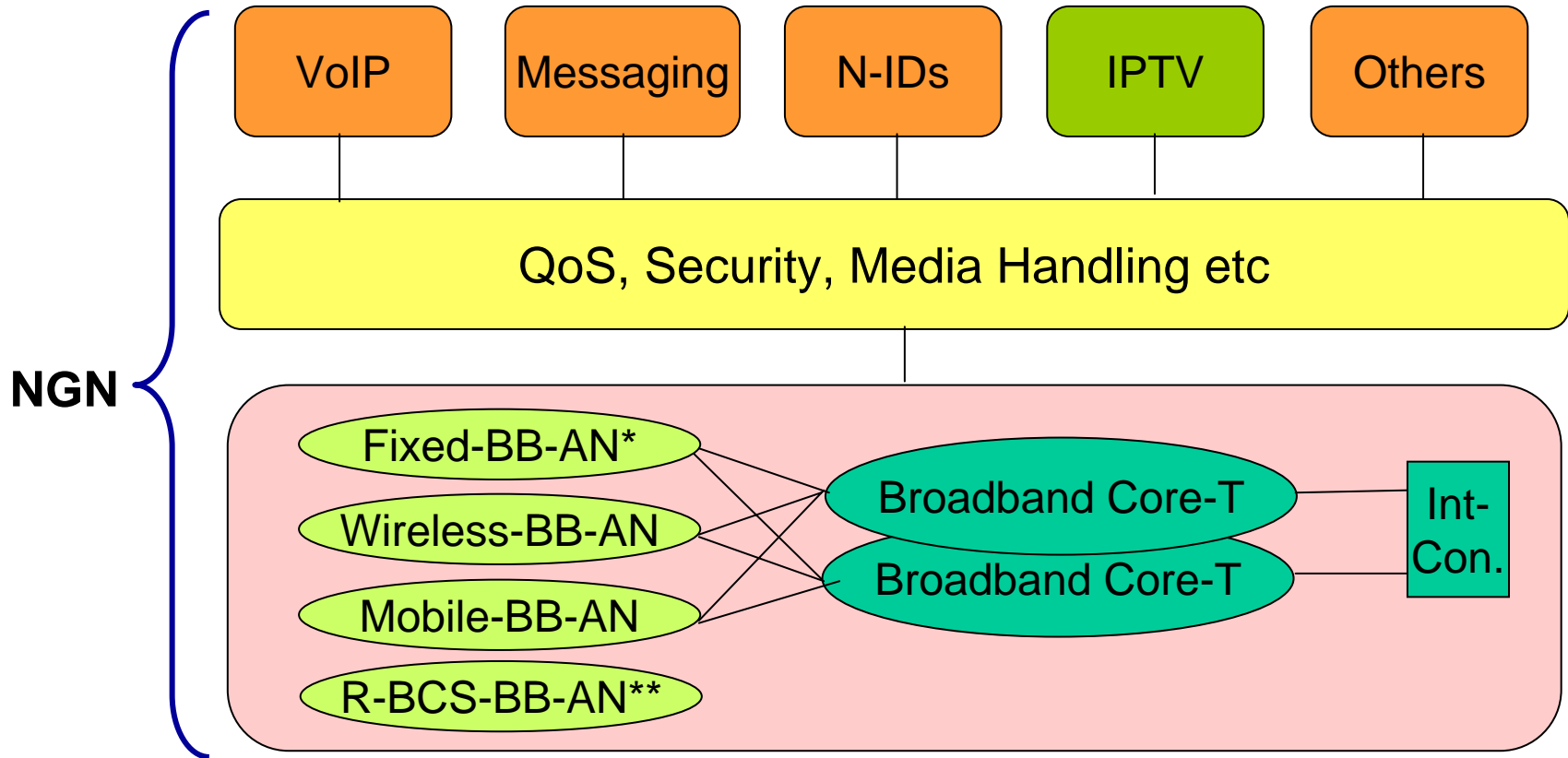
* Include cable based Broadband Access Network technology
** means radio based broadcasting transport capabilities include satellite means

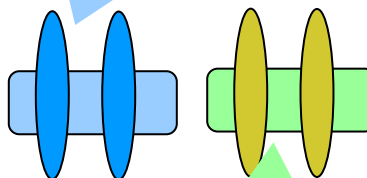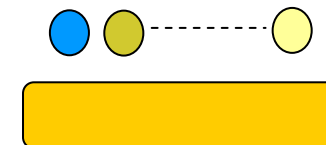# Infrastructure vs. Services/Applications

- Each infras. for each Serv./Appl.
- Interworking was a big issue
- No interoperability
→ ISDN as a dream

- Fixed/Mobile Infra for each F/M Serv./Appl.
- Interconnection was a big issue
→ Forgot ISDN

- IP infra for Internet Serv/ Applications
- QoS, Security are big issue

- Integrated infras. for most of Serv./Appl.
- FMC, Tele-Broad.
- Premium/Managed BB IP based Network
- Reg/Policy become issue
→ ISDN become real

Time

NGN : Nothing new, but upgrading, adding Value
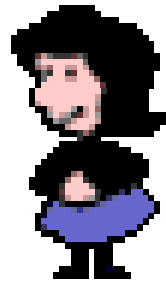
Up-grading Current Infrastructure

Adding Value

Current Generation-Beach

Next Generation-Water Park

Thank you for your attention !!!