



# Next Generation Network

**2007/06/19**

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**NEC Corporation**

**U can change.**

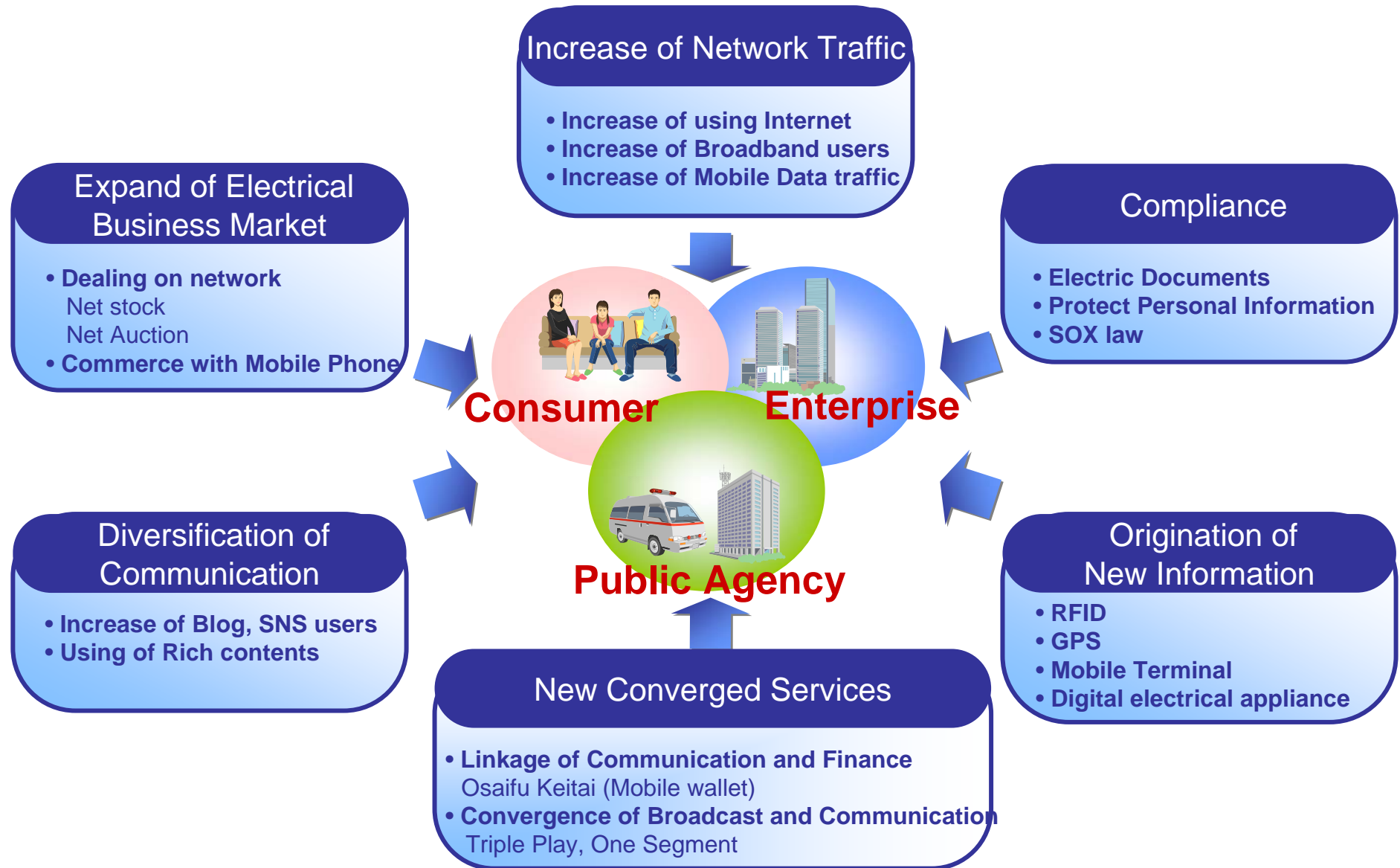


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- 1. Overview of NGN**
2. Standardization
3. NGN Solution
4. NGN Services



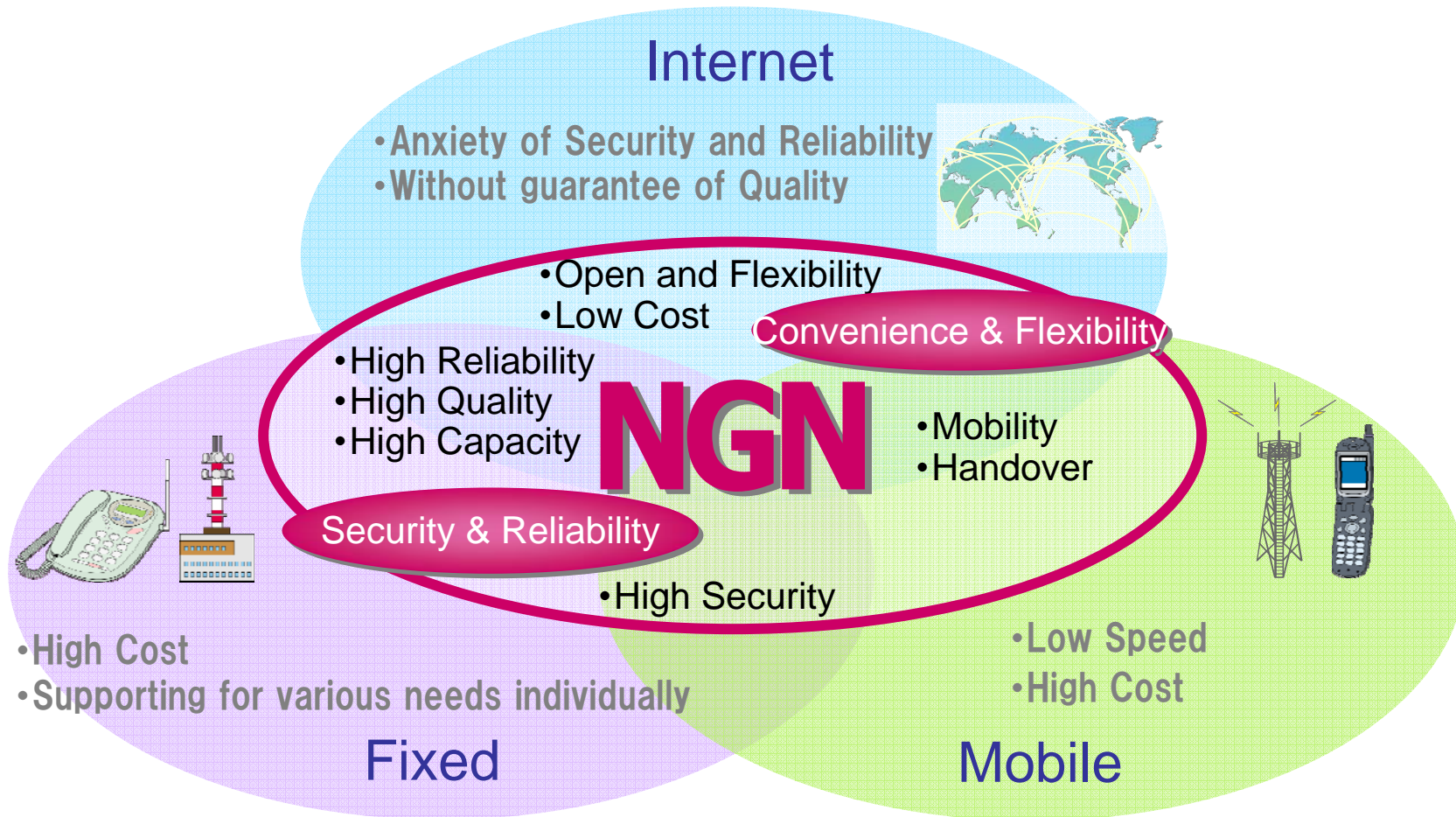
# Background for NGN





# Expectation for NGN

IP based multi-service platform capable of any traffic type and services over a single fabric





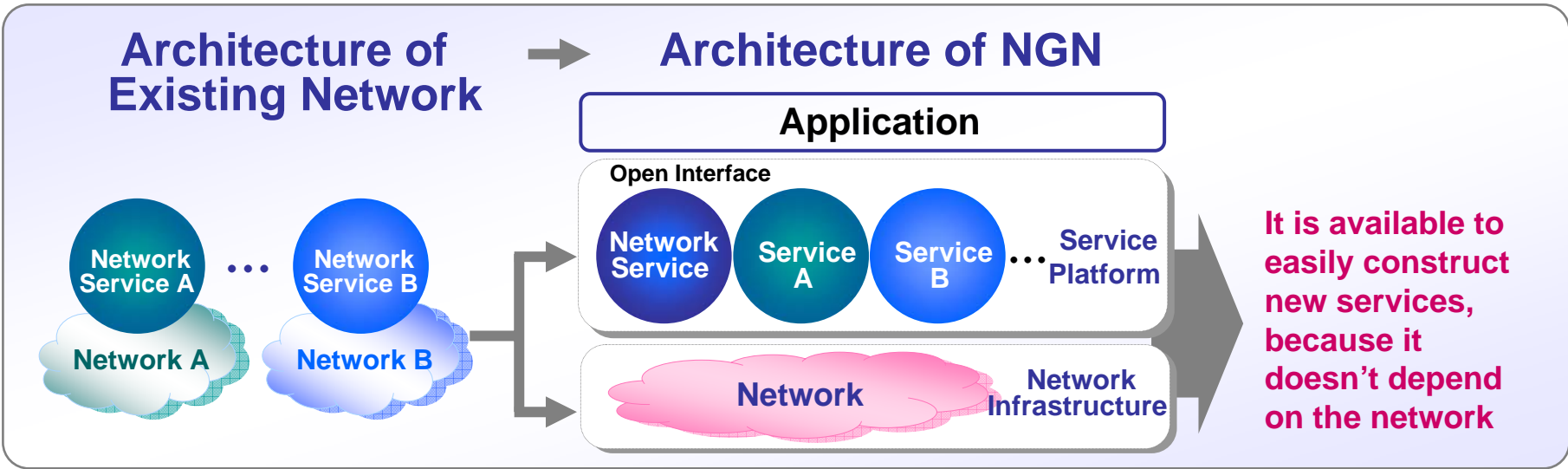
# Characteristic of NGN

- Characteristic of NGN**
- 1 Broadband
  - 2 Control for QoS
  - 3 Packet based network
  - 4 Providing services with separating Service and Transport
  - 5 Without limitation of Access Network
  - 6 Providing general Mobility services

Providing "Network Infrastructure" With High Speed and High Capacity

Providing "Service Platform(\*)" and "Application" used it

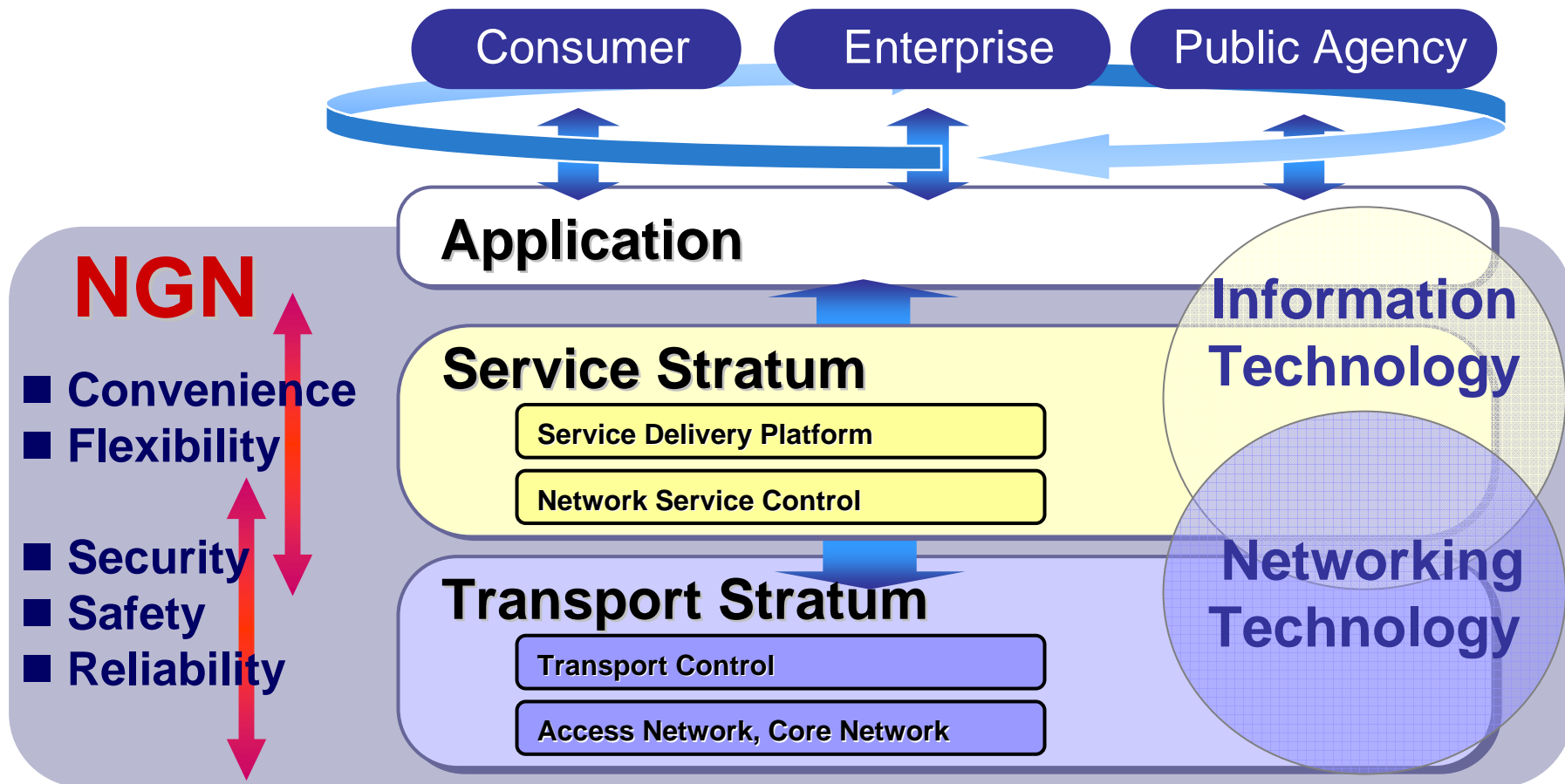
(\*) Service Platform: Platform to provide Common Services (accounting, authentication, etc) that support Applications





# NGN Architecture

Providing services with separating Service and Transport





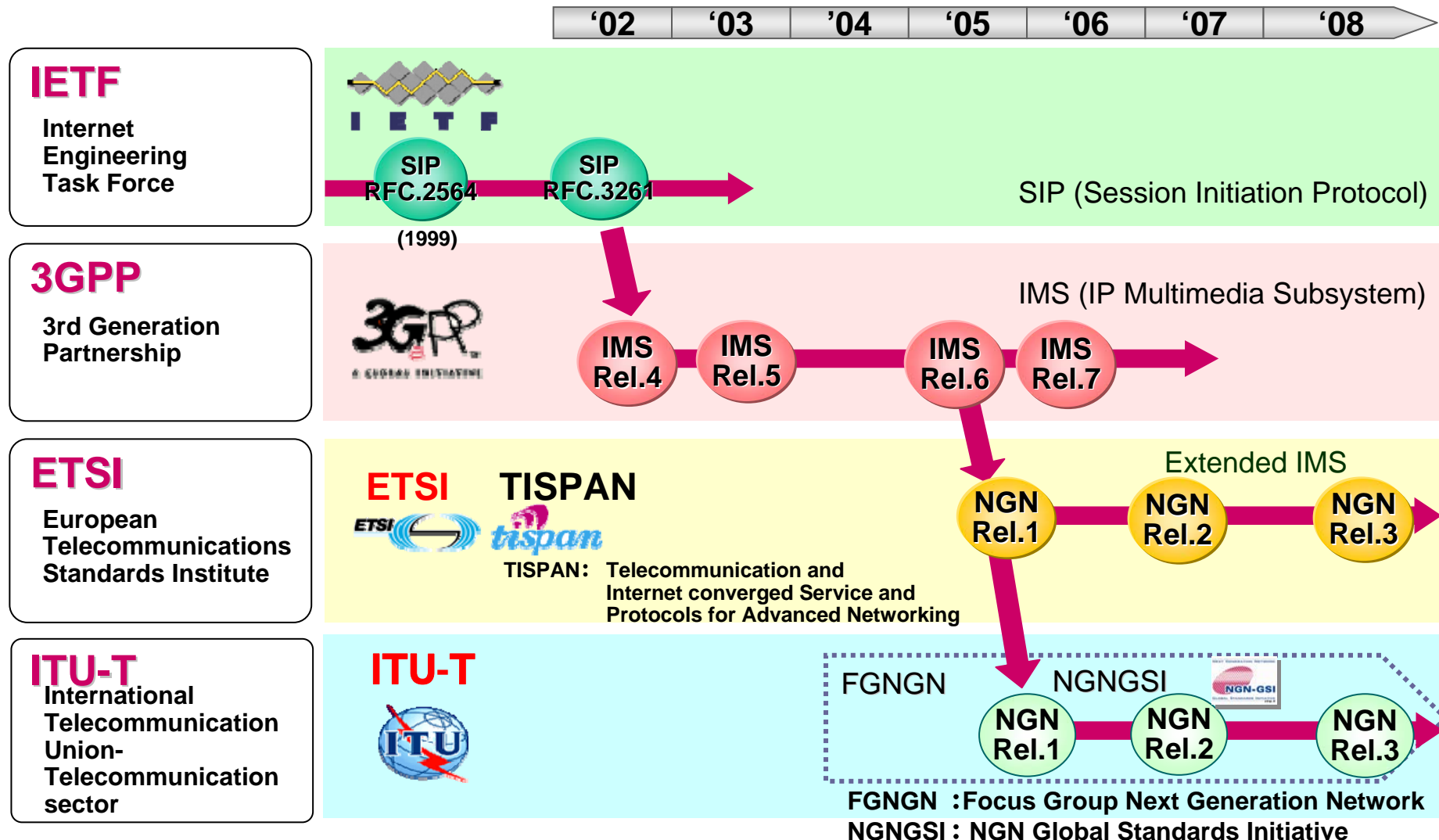
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# NGN Standardization

Several organizations are working actively for NGN standardization



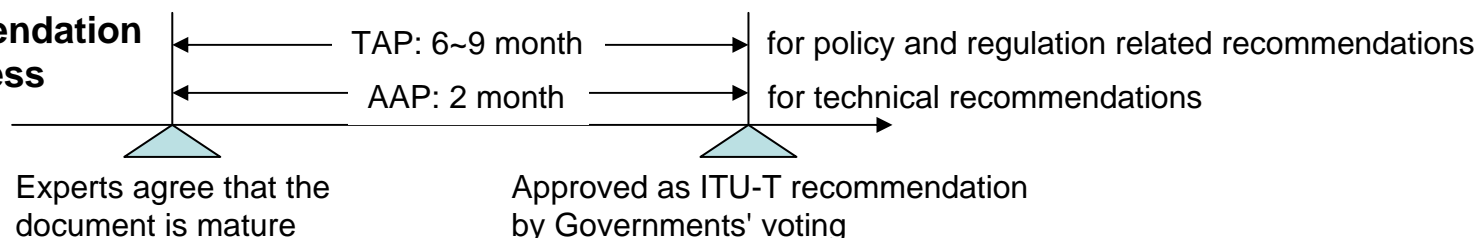




# ITU-T R1 document list

ITU-T Rec. No.	Title	Lead SG	Expected Approval	Approval Process
Supplement 1 to Y.2000-series	NGN release 1 scope	13	--	Approved
Y.2201	NGN release 1 requirements	13	Apr. 2007	TAP
Y.2012	Functional requirements and architecture of the NGN	13	Oct. 2006	AAP
Supplement 1 to Y.2012	Session/border control (S/BC) functions	13	--	Approved
Y.2021	IMS for Next Generation Networks	13	Oct. 2006	AAP
Y.2031	PSTN/ISDN emulation architecture	13	Oct. 2006	AAP
Y.2091	Terms and definitions for Next Generation Networks	13	Oct. 2006	AAP
Y.2111	Resource and admission control functions in Next Generation Networks	13	Oct. 2006	AAP
Y.2171	Admission control priority levels in Next Generation Networks	13	Oct. 2006	AAP
Y.2261	PSTN/ISDN evolution to NGN	13	Oct. 2006	AAP
Y.2271	Call server based PSTN/ISDN emulation	13	Oct. 2006	AAP
Y.2701	Security requirements for NGN release 1	13	Apr. 2007	TAP
Q.1706	Mobility management requirements for NGN	19	Oct. 2006	AAP

## ITU-T recommendation approval process





# ITU-T R2 new services/capabilities

- Service stratum related capabilities
  - RFID; Describes RFID applications. Requirements for NGN will be added in the future
  - Open Service Environment Capabilities: Describes integrated ANI (application network interface) including 3GPP OSA. Requirements for NGN will be added in the future
- Transport stratum related capabilities
  - FMC; documents on requirements, IMS-based architecture, Service scenario for NGN with PSTN-based access networks are under discussion
  - Multicast with MPLS-based QoS support: Requirements, architecture overview, information flow are under discussion
- Application related services
  - IPTV discussion is moved to Focus Group on IPTV (~2006/07)
- Most new services are proposed by Korea and China in ITU-T



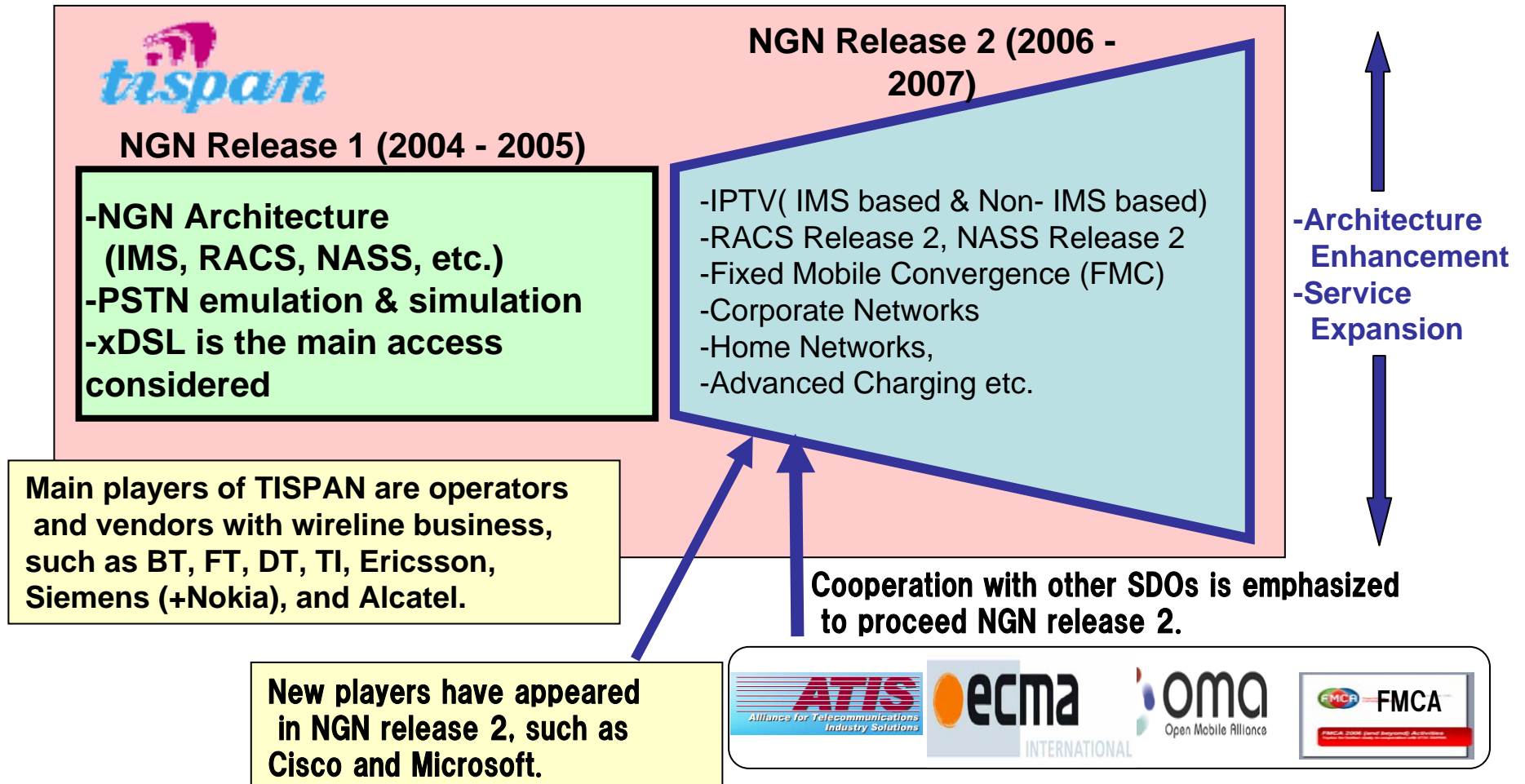
# TISPAN NGN Release 1 and Release 2

NGN Release1 published in December 2005 (60 documents).

NGN Architecture, PSTN/ISDN emulation & PSTN/ISDN simulation are main outputs.

NGN Release 2 started in February 2006.

Service expansion (IPTV, etc.) and architecture enhancement are main targets.



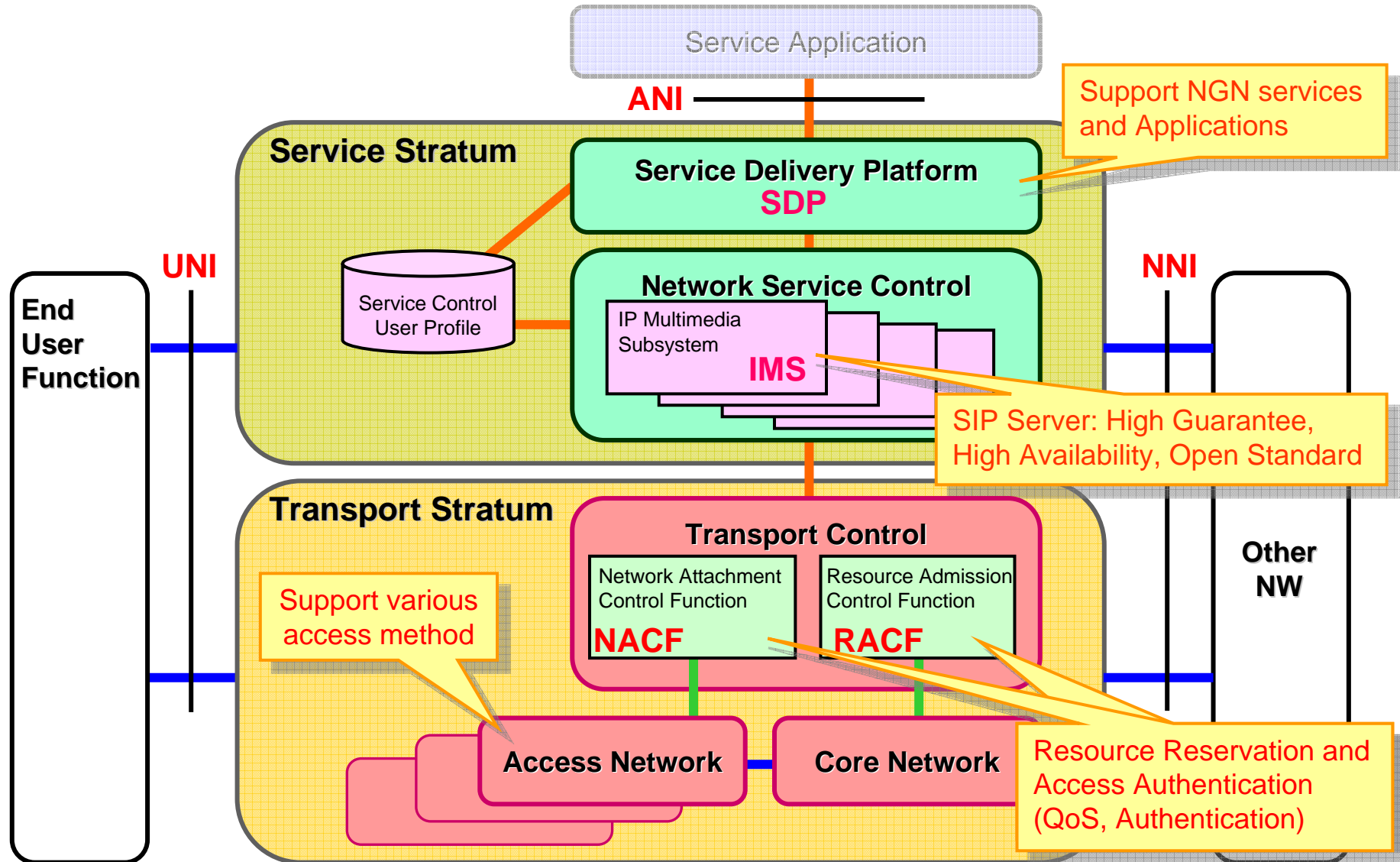


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# Key Technology of NGN Architecture





# NEC's Advanced Technology for NGN

Service Application

Service Stratum

SDP  
(Service Delivery Platform)

IMS  
(Network Service Control)

Transport Stratum

Transport Control Platform

Optical IP Transport

Mobile

WiFi  
WiMAX

xDSL

FTTH

## SDP: NC7000 Series

- ▶ Providing effective development of service and operation
- ▶ Call Control, Messaging, Presence, Media Resources
- ▶ Supporting aTCA, UNIX (Not depend on Hardware)

## IMS: NC9000 Series

- ▶ SIP Server with High Capacity and Reliability
- ▶ Realized reliability of 99.9999%
- ▶ Supporting aTCA, UNIX (Not depend on Hardware)



## RACF/NACF: NC5000 Series

- ▶ High Quality, Security & Reliability for Transport Control
- ▶ Guarantee of bandwidth and priority with NC9000
- ▶ Supporting aTCA, UNIX (Not depend on Hardware)

## Wireless Access System

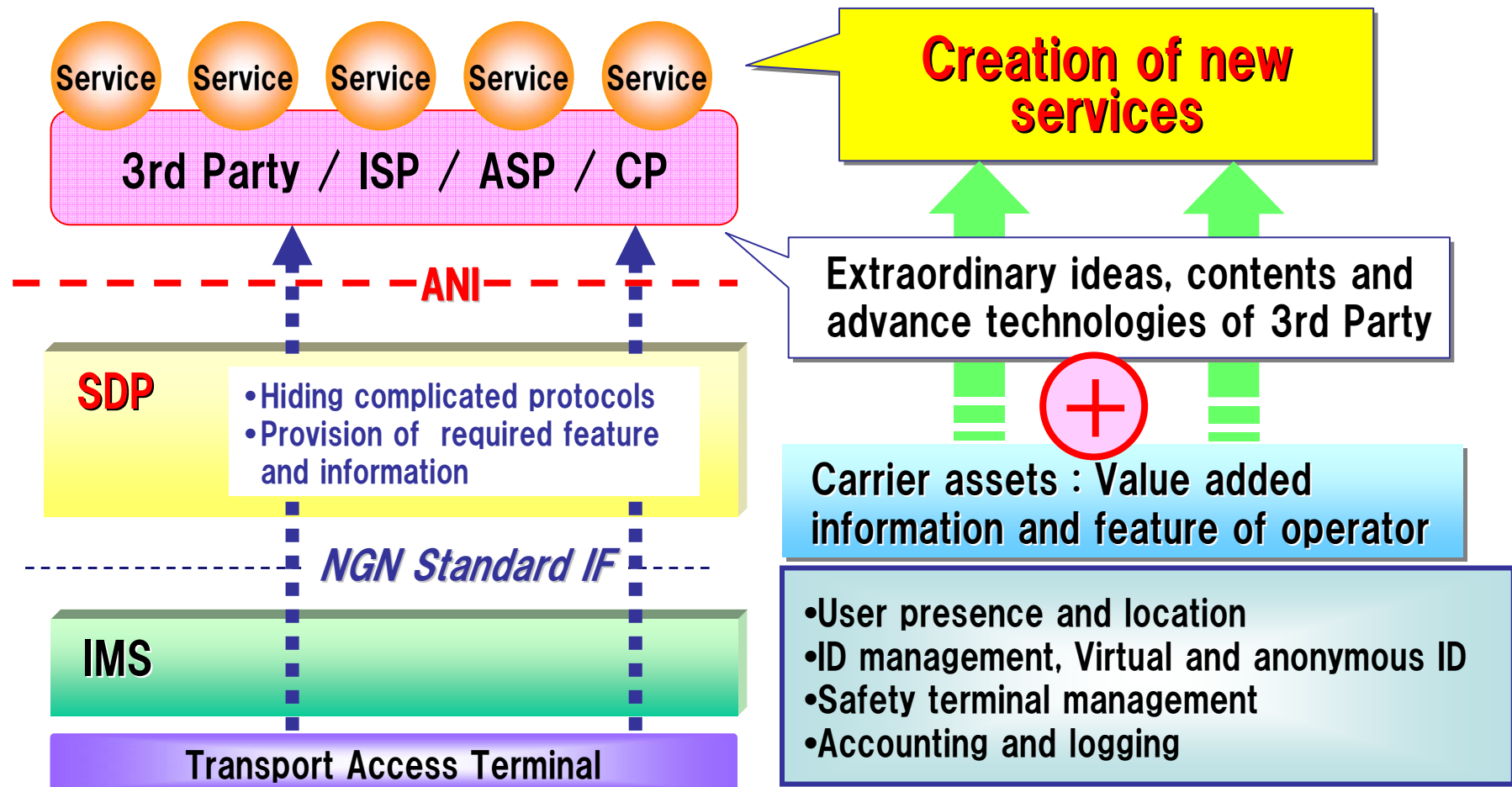
- ▶ PASOLINK for GSM, 3G, HSDPA
- ▶ W-CDMA System, LTE, WiMAX





# ANI for service applications

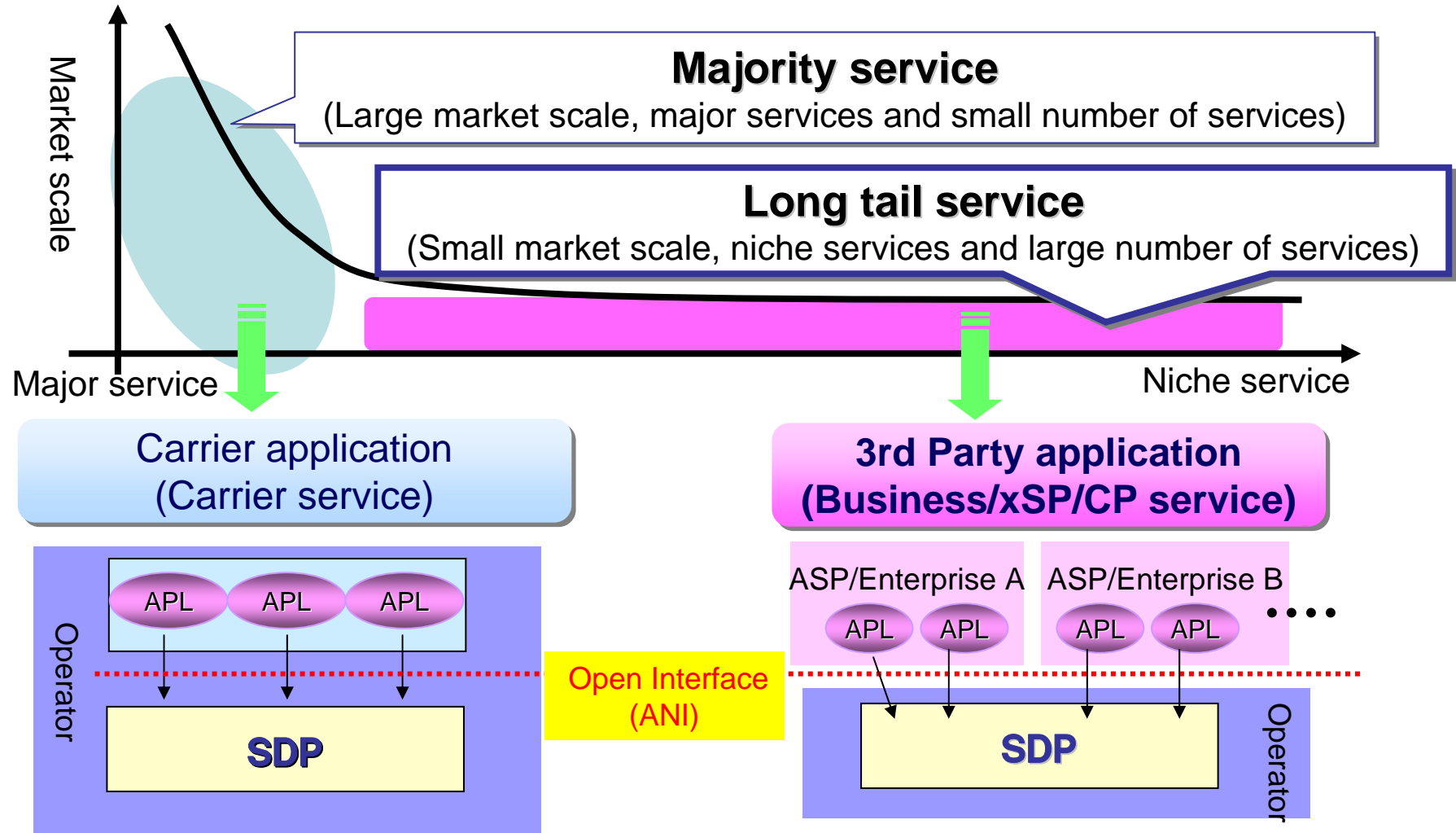
- Quick introduction of new services using simplified API
- Creation of new ICT services by collaboration with IT application and Carrier assets





# Collaboration between NGN and users

Utilization of ANI depending on service characteristics

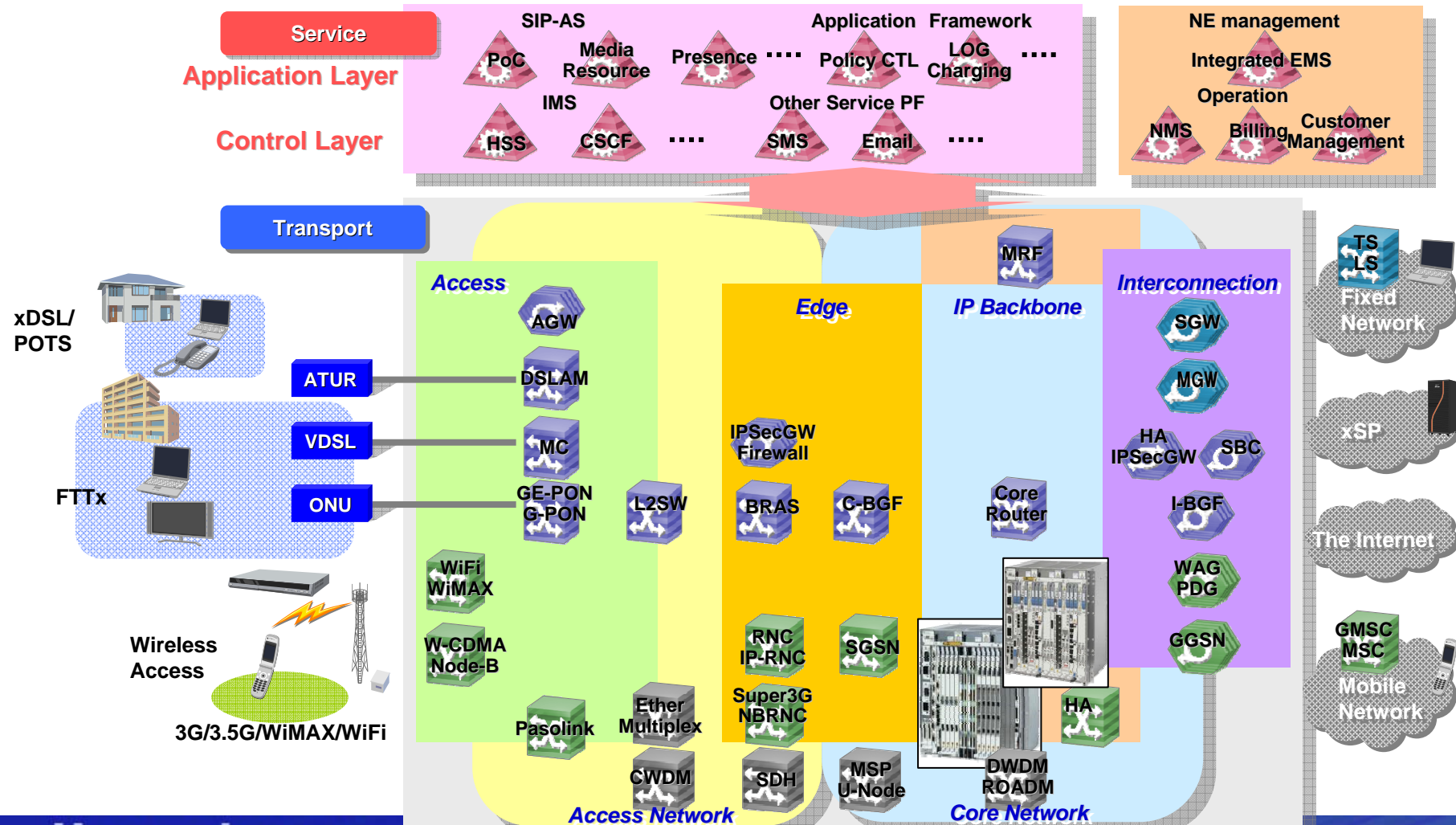






# NEC's solutions for NGN

NEC provides solutions which cover from service to transport, the end to end, full-line and full-layer of NGN



U can change.



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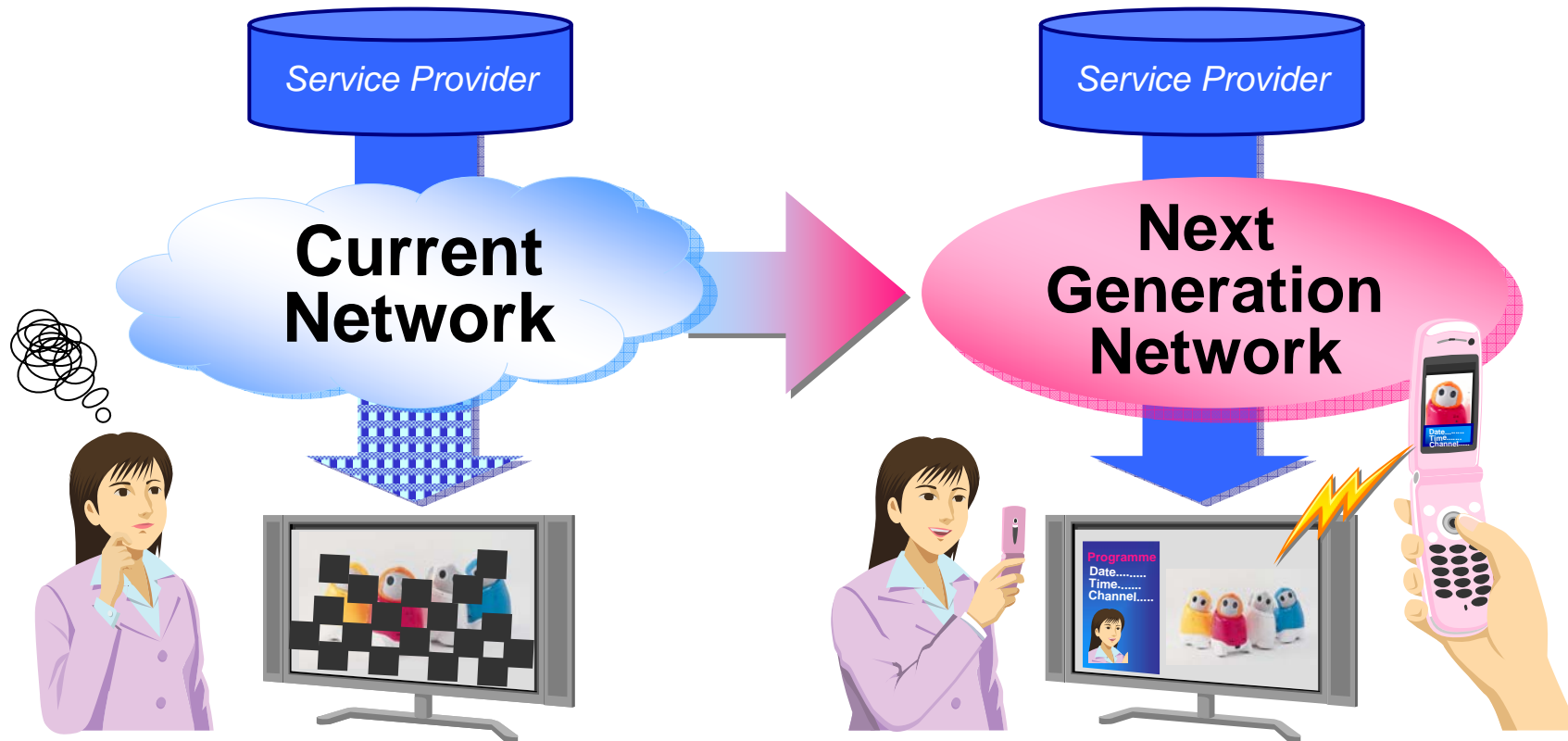
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# New Service enabled by NGN

## Example 1: IPTV

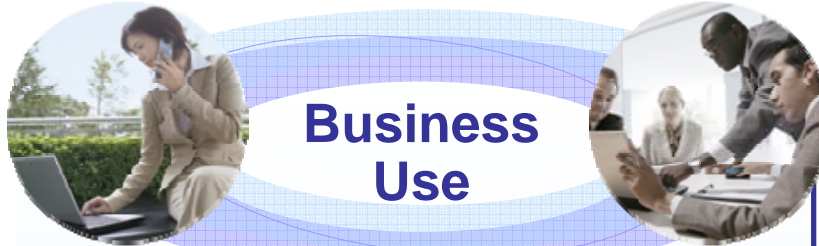
- High-quality video streaming with guaranteed Quality of Service
- Personalized, value-added services





# New Service enabled by NGN

## Example 2 : Multimedia Group Communication



**Business Use**

Example

**Airport Operation**



**Personal Use**

Example

**Tennis Group Communication**

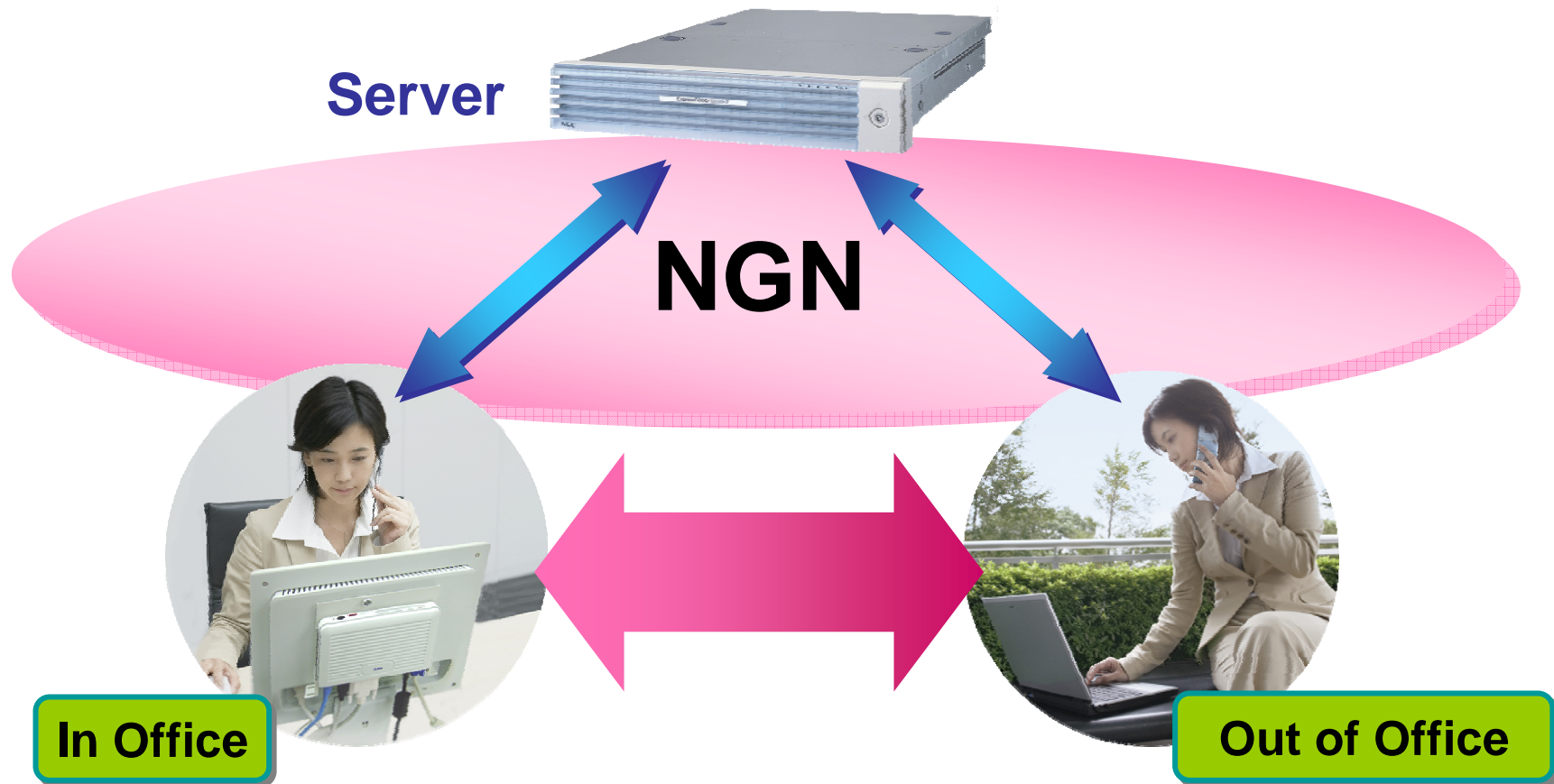




# New Service enabled by NGN

## Example 3: Thin Client Computer System

- Ultimately secure, Reduction of TCO, Mobile office





# Variety of services enabled by NGN

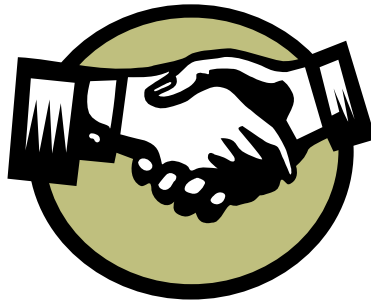
## NGN accelerates collaboration





# NEC's NGN Offering

*A Next Generation Network must harmonize  
**with the existing network** and evolves to  
create new services-*



**NEC can deliver the NGN migration plan most suited to your existing network.**

**NEC Offers Total Solutions from Consultation/  
Network Creation/System Creation/Services to Operation,  
Maintenance, and Management**



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### For Society

Innovative technology has the power to change the society we live in. Here we present NEC's activities that realize a safer and more prosperous society.



#### e-Government Solution

NEC e-government solution for San Luis, Argentina that bridges the digital divide. [ 03:46 ]

1M 300K



#### Car2Car Communication

NEC technology contributes to road safety by turning cars into signal-emitting radio hubs. [ 02:50 ]

1M 300K



#### Bioplastic

NEC's breakthrough in creating a heat-resistant, bioplastic with reinforced strength. [ 03:16 ]

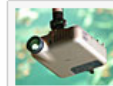
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#### IPTV Solution

NEC's DSLAM enables IPTV subscribers to receive interactive and transaction-based services. [ 02:46 ]

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#### Multimedia Display Solution

NEC's imaging solution provides visitors of aquarium with both information and excitement. [ 02:37 ]

1M 300K



#### Mobile Internet Solution

NEC partners with Bouygues Telecom to enable launch of enhanced mobile services in France. [ 02:30 ]

1M 300K



#### Supercomputers

NEC's powerful supercomputers at the UK MET Office contribute to predicting climate change. [ 03:04 ]

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