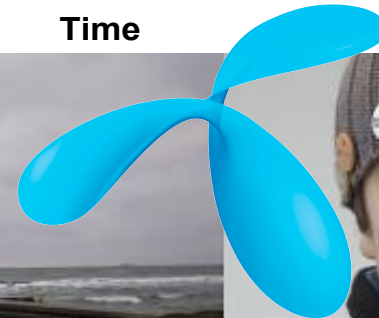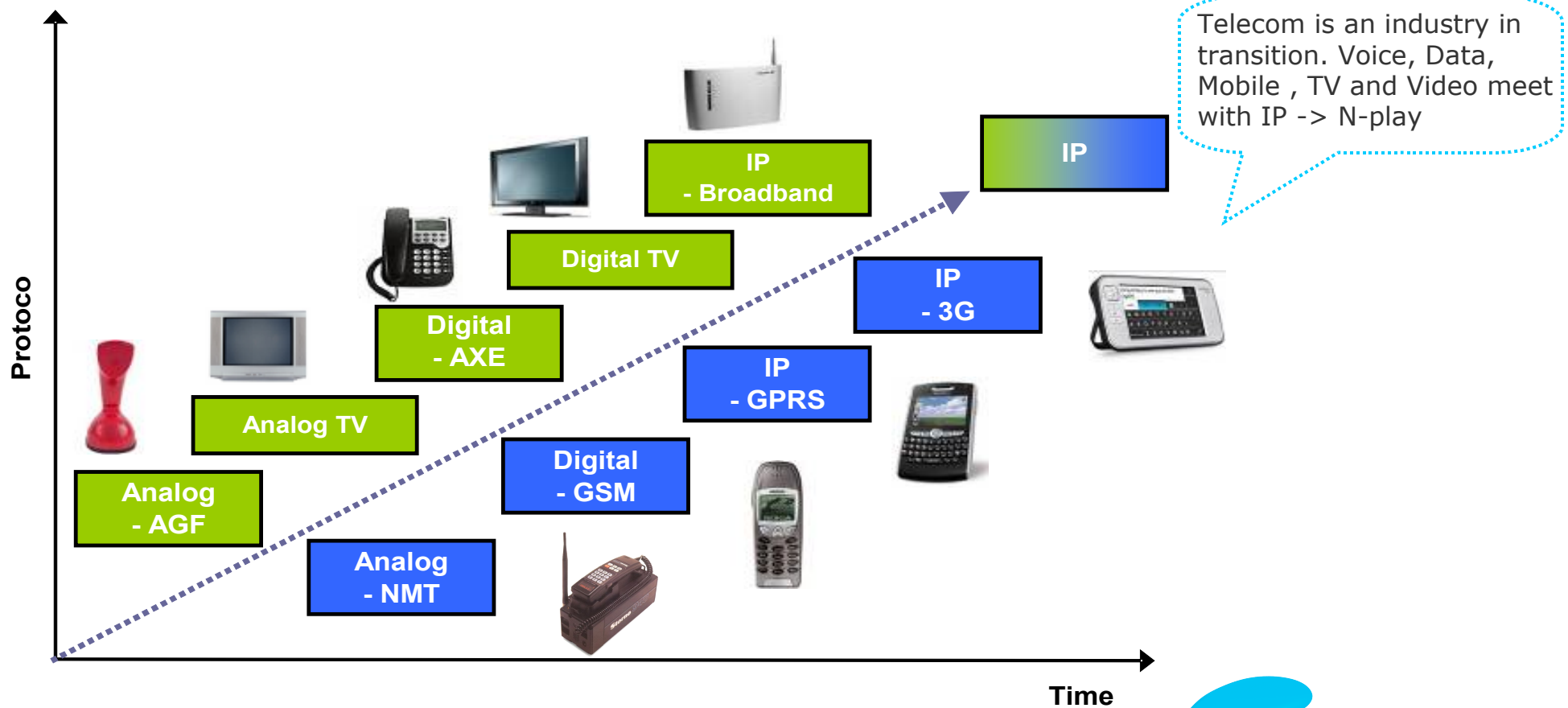# Competitiveness and Success in the all IP World

Sten Nordell

Chief Convergence Officer

- Convergence of new technologies creates new opportunities

Protoco

Telecom is an industry in transition. Voice, Data, Mobile , TV and Video meet with IP -> N-play

IP - Broadband

IP

Digital TV

Digital - AXE

IP - 3G

Analog TV

IP - GPRS

Analog - AGF

Digital - GSM

Analog - NMT

Time

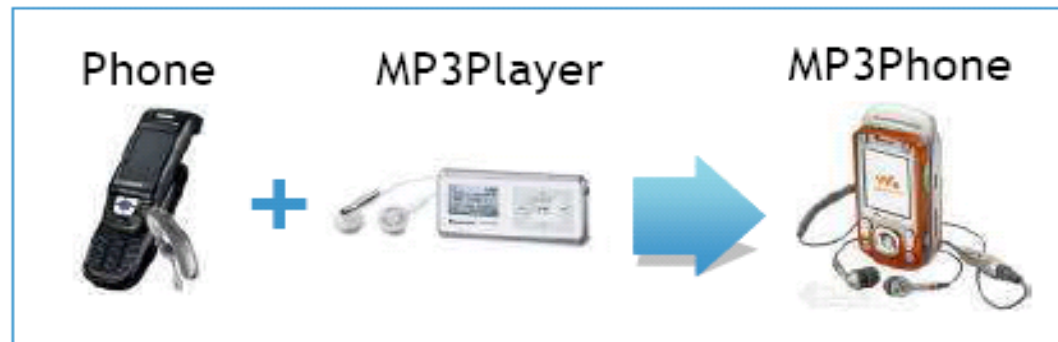# What is convergence for end-users?

Convergence means
new lifestyle services
that enrich life,
helping to
communicate better

telenor

What is convergence for end-users?

Phone + MP3Player → MP3Phone

Phone + iPod + PDA → iPhone

Game + Communication → XBox360, Wii

new lifestyle services

better communication

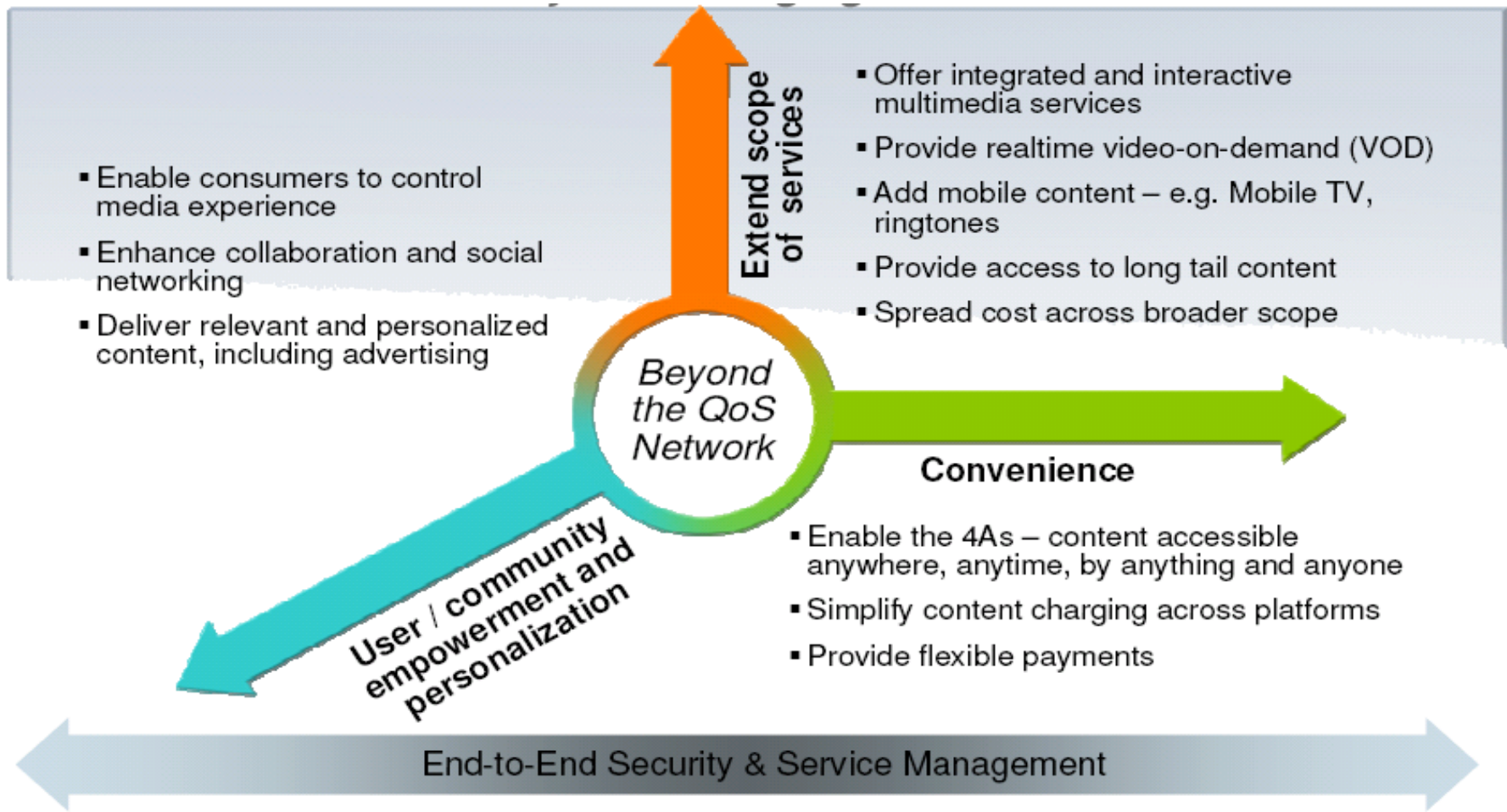telenor

What is convergence for service providers?

Convergence is about enabling transformation

We expect a smooth path to next-generation, service-aware networks, combined with advanced multimedia platforms, to deliver user-centric and revenue-generating communication services while reducing costs.

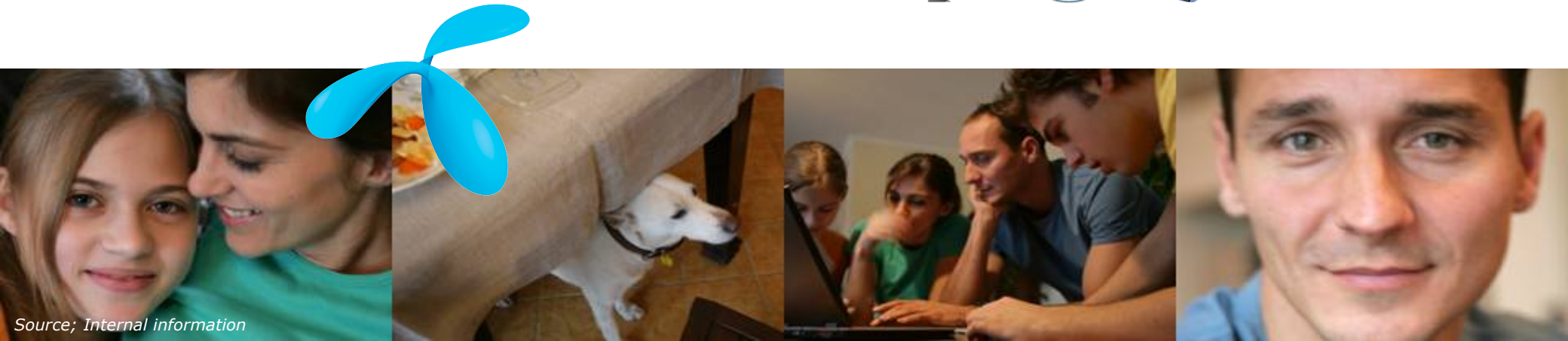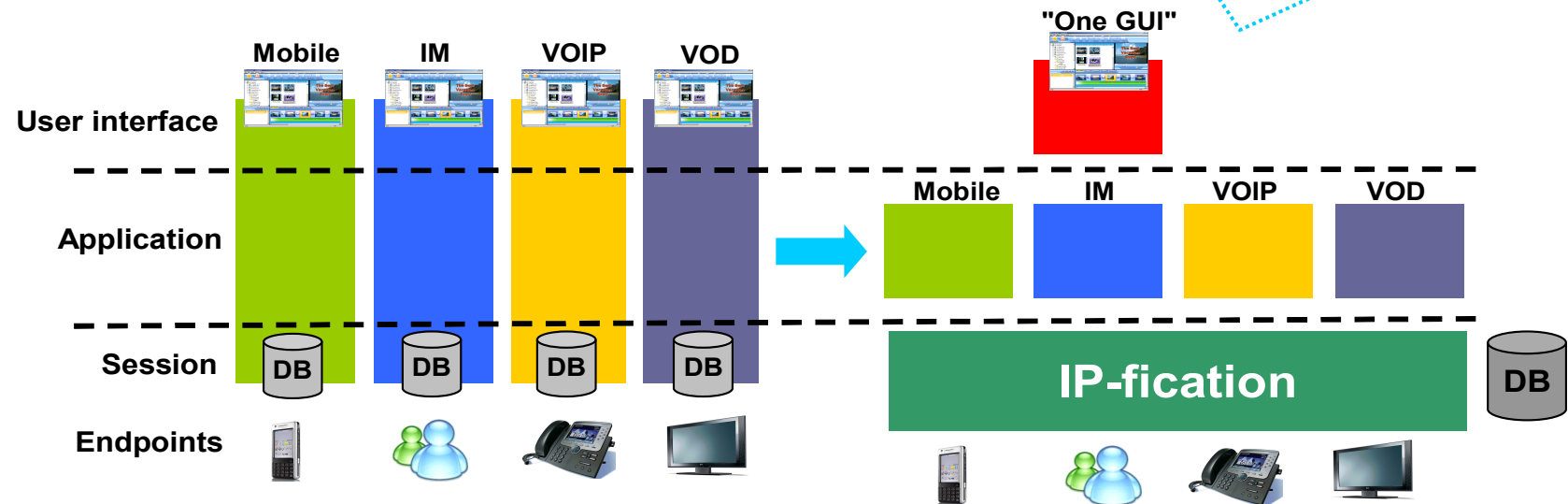telenor

Driving New Value for Customers
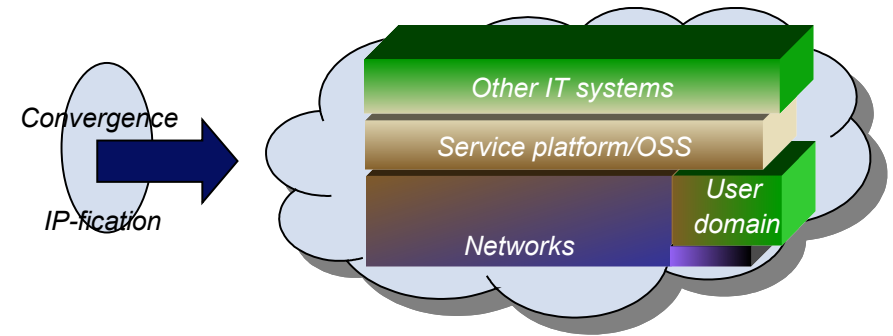## *Providers Must Look Beyond Managing Investment in Networks*

Extend scope of services

- Offer integrated and interactive multimedia services
- Provide realtime video-on-demand (VOD)
- Add mobile content – e.g. Mobile TV, ringtones
- Provide access to long tail content
- Spread cost across broader scope

- Enable consumers to control media experience
- Enhance collaboration and social networking
- Deliver relevant and personalized content, including advertising

Beyond the QoS Network

Convenience

User / community empowerment and personalization

- Enable the 4As – content accessible anywhere, anytime, by anything and anyone
- Simplify content charging across platforms
- Provide flexible payments

End-to-End Security & Service Management

telenor

- Convergence should allows for efficiency in every aspect of communication

The IP-fication will create building blocks of applications and services making them more flexible, thus enabling reuse to a larger extent

"One GUI"

	Mobile	IM	VOIP	VOD

User interface

Application

Session   DB   DB   DB   DB

Endpoints

Mobile   IM   VOIP   VOD

IP-fication   DB

Source; Internal information
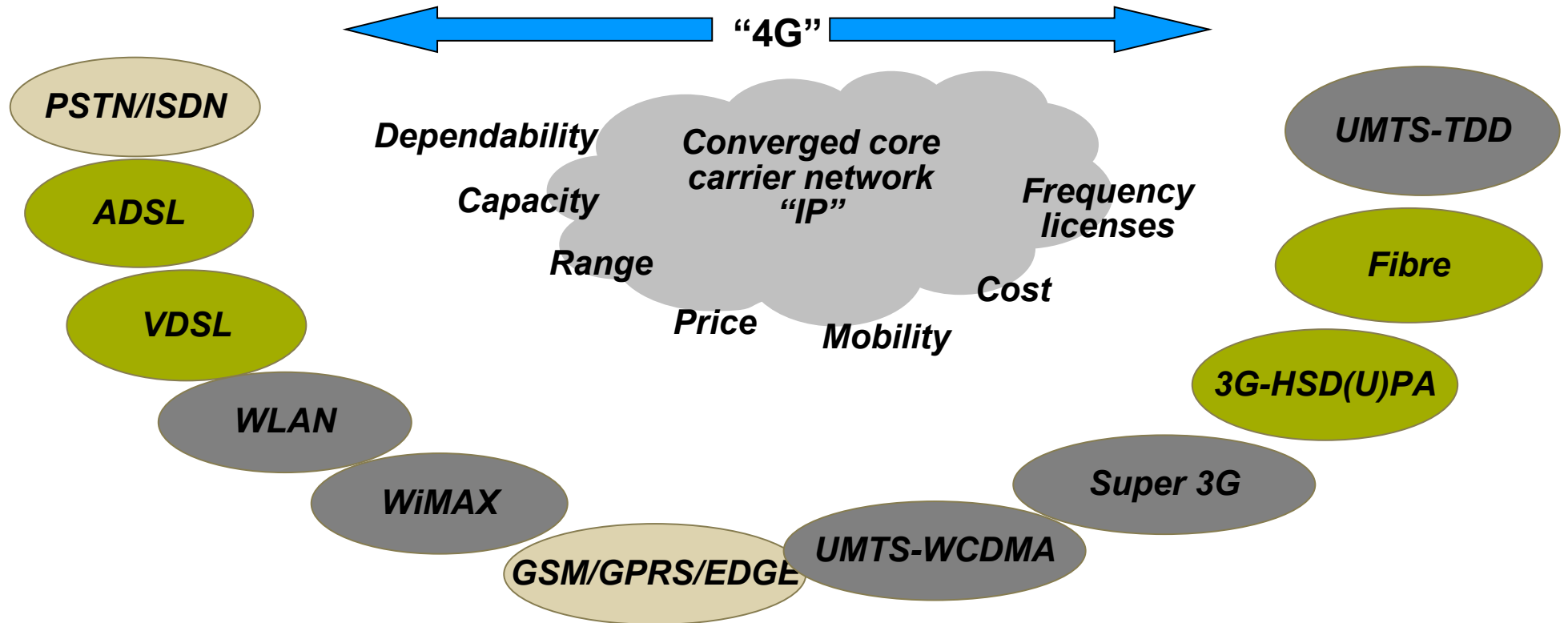
Networks

An overall objective is

> *to achieve one common IP/MPLS network architecture servicing "Any service, any terminal, anywhere, anytime, to anyone" through a common core/edge and service node concept based on distributed principals focusing on today's and future data, voice, video and mobile growing services.*

Separating network control, bearer and access results in

> *future network architectures for mobile as well as others will be implemented according to a layered concept. This results in a core network supporting any access form and N-play service offerings, driven by the all-IP standardisation effort.*

Networks
Playing on the strengths of different access networks

"4G"

PSTN/ISDN

ADSL

VDSL

WLAN

WiMAX

GSM/GPRS/EDGE

UMTS-WCDMA

Super 3G

3G-HSD(U)PA

Fibre

UMTS-TDD

Dependability

Capacity

Range

Price

Converged core carrier network "IP"

Mobility
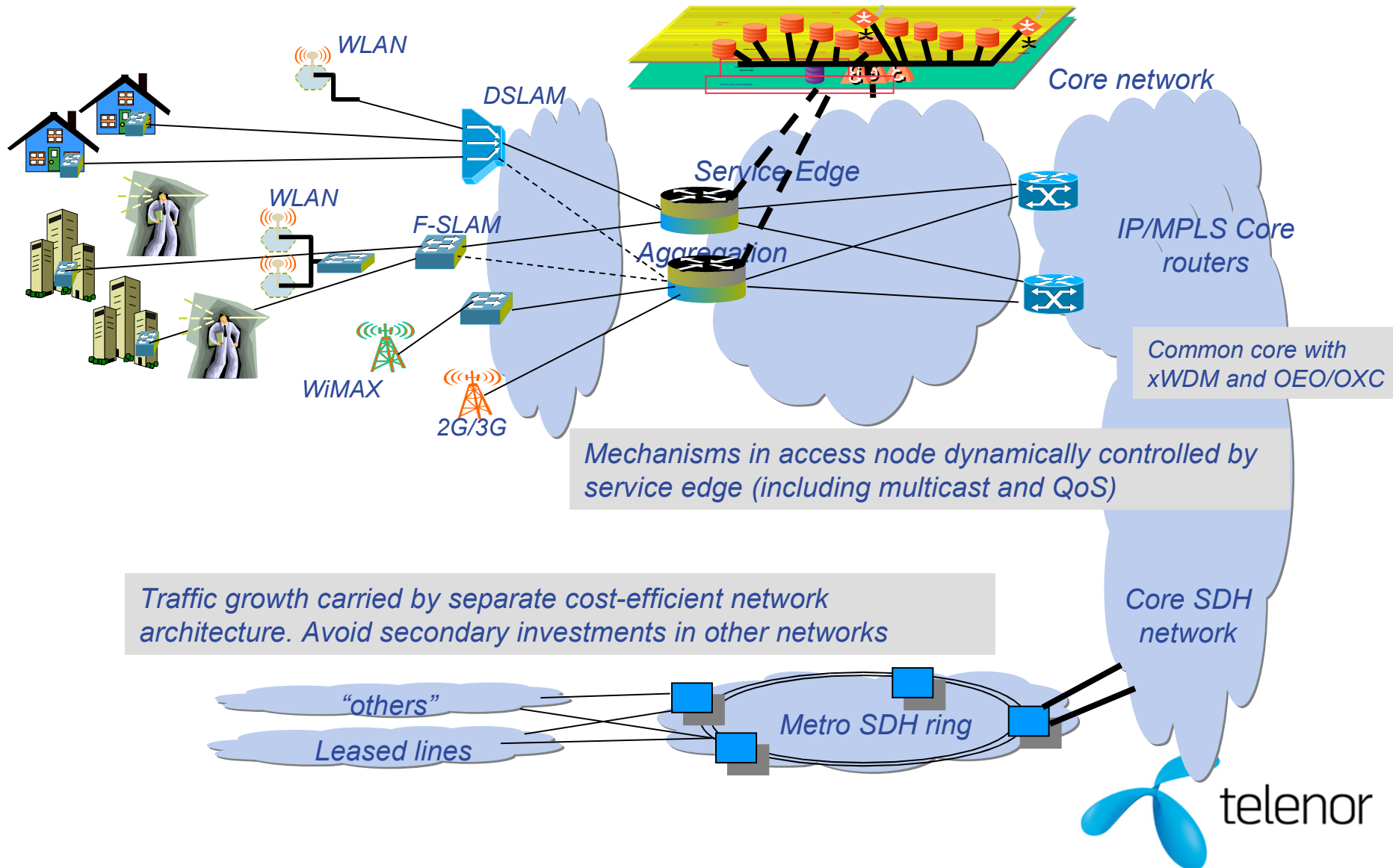
Frequency licenses

Cost

Network architecture capable of incorporating most suitable access networks.
Access networks comply with functional/modular requirement
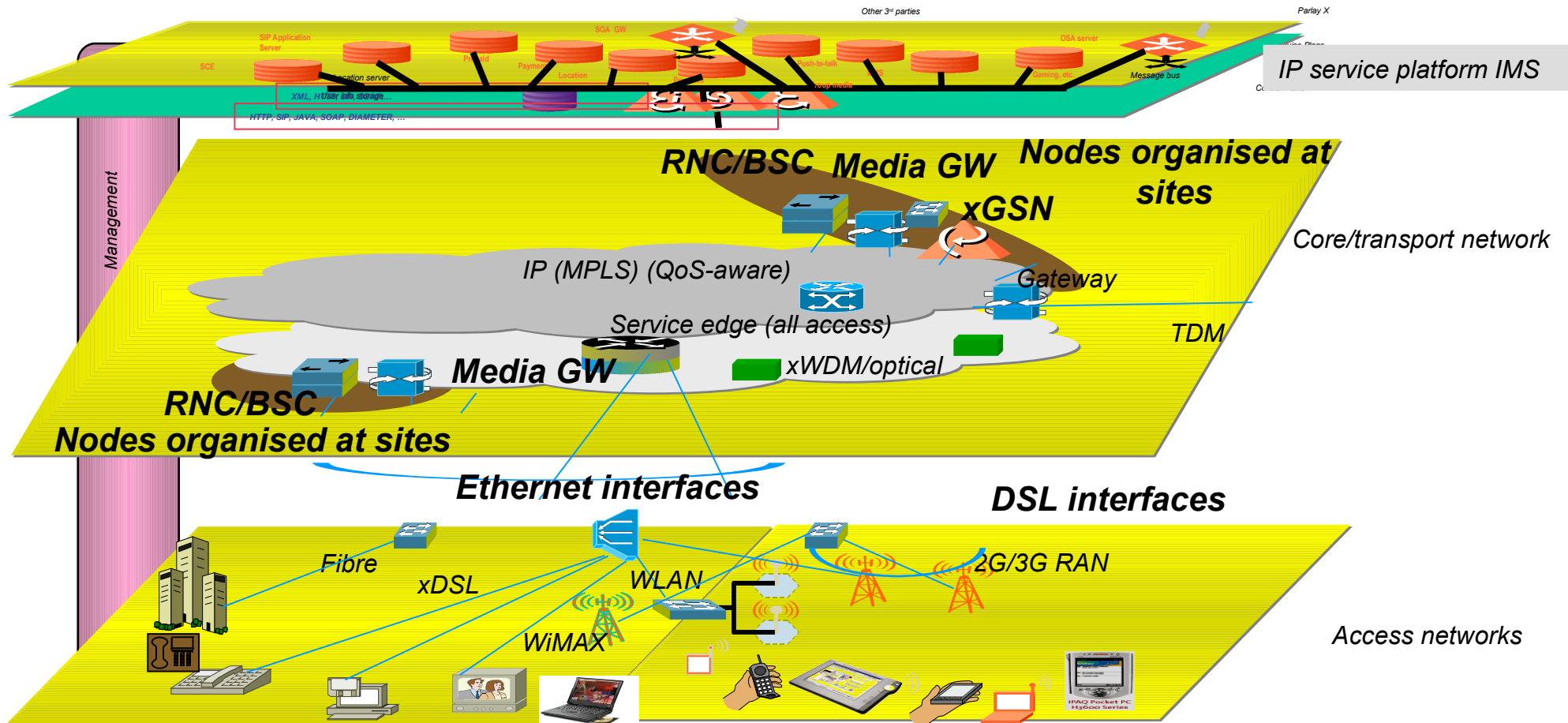*Which access network to utilize depends on demographic/geographic/etc. conditions*

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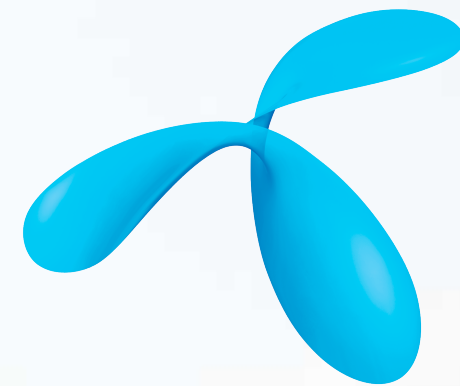# Today's Architecture of the most modern IP-network

WLAN

DSLAM

Core network

WLAN

F-SLAM

Service Edge

Aggregation

IP/MPLS Core routers

WiMAX

2G/3G

Common core with xWDM and OEO/OXC

Mechanisms in access node dynamically controlled by service edge (including multicast and QoS)

Traffic growth carried by separate cost-efficient network architecture. Avoid secondary investments in other networks

Core SDH network

"others"

Leased lines

Metro SDH ring

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All IPNetworks
Mobile systems; Layered architecture, common carrier

IP service platform IMS

Other 3rd parties

Parlay X

SIP Application Server

SCE

SOA GW

OSA server

Message bus

XML, H User info storage...

HTTP, SIP, JAVA, SOAP, DIAMETER, ...

Location server

Prepaid

Payment

Location

Push-to-talk

Gaming, etc

Group media

Management

RNC/BSC **Media GW** **Nodes organised at sites**

xGSN

Core/transport network

IP (MPLS) (QoS-aware)

Gateway

Service edge (all access)

TDM

Media GW

xWDM/optical

RNC/BSC
Nodes organised at sites

Ethernet interfaces

DSL interfaces

Fibre

xDSL

WLAN

2G/3G RAN

WiMAX

Access networks

IPAQ Pocket PC H3600 Series

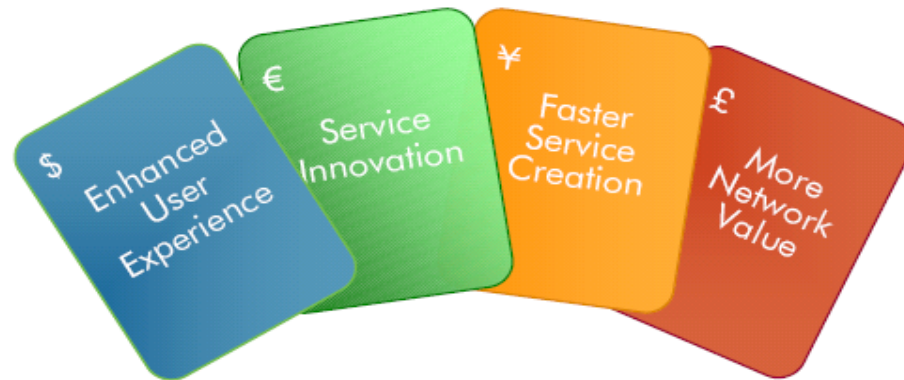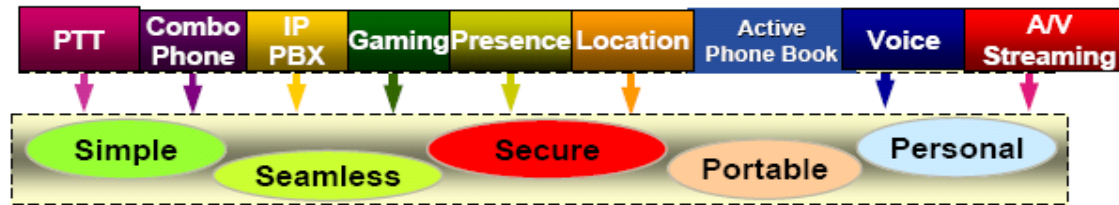*Common IP/MPLS bearer network now possible*
With Ethernet interfaces
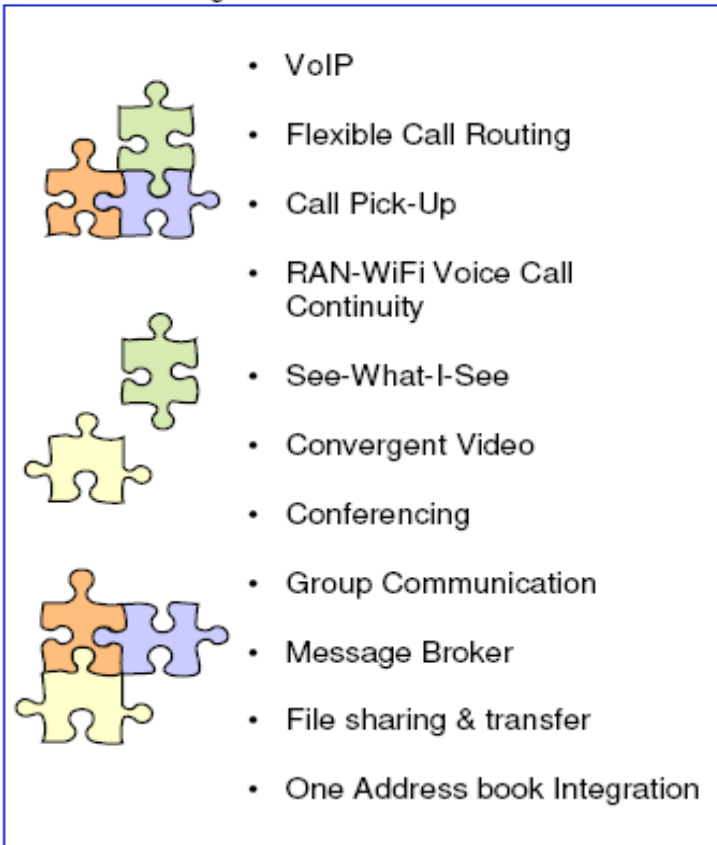
telenor

Next IP Services Network
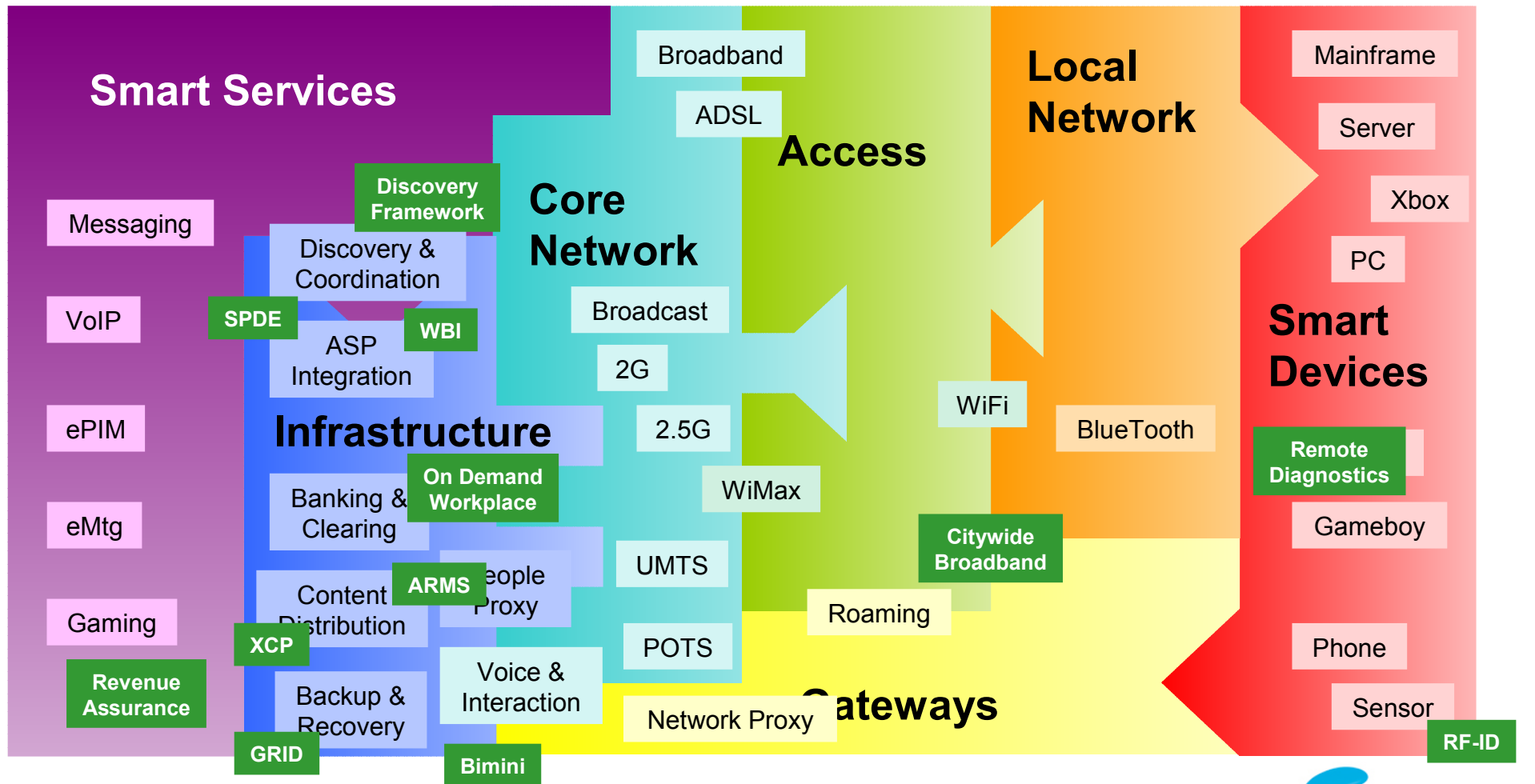
How to use capabilities to create Applications, Services and Value

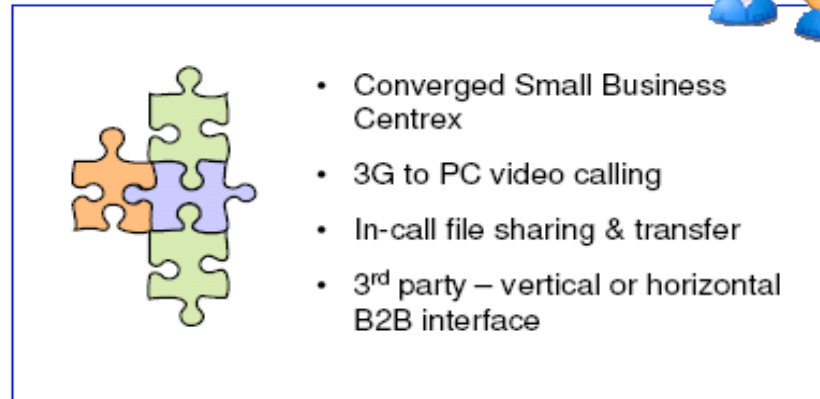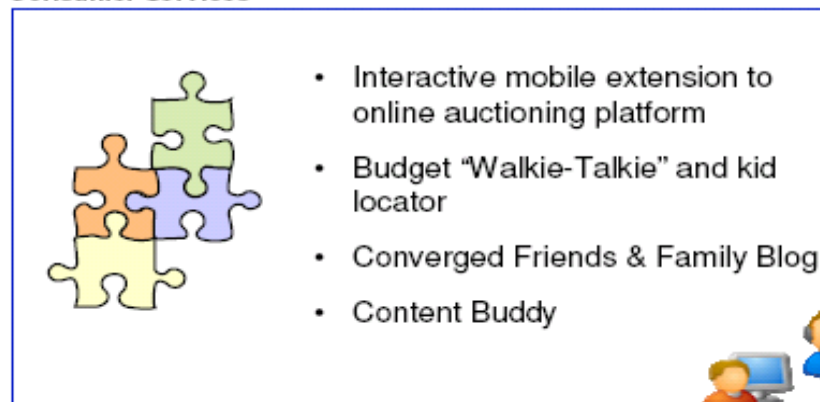# Service Creation and packaging to meet requirements of different market sectors
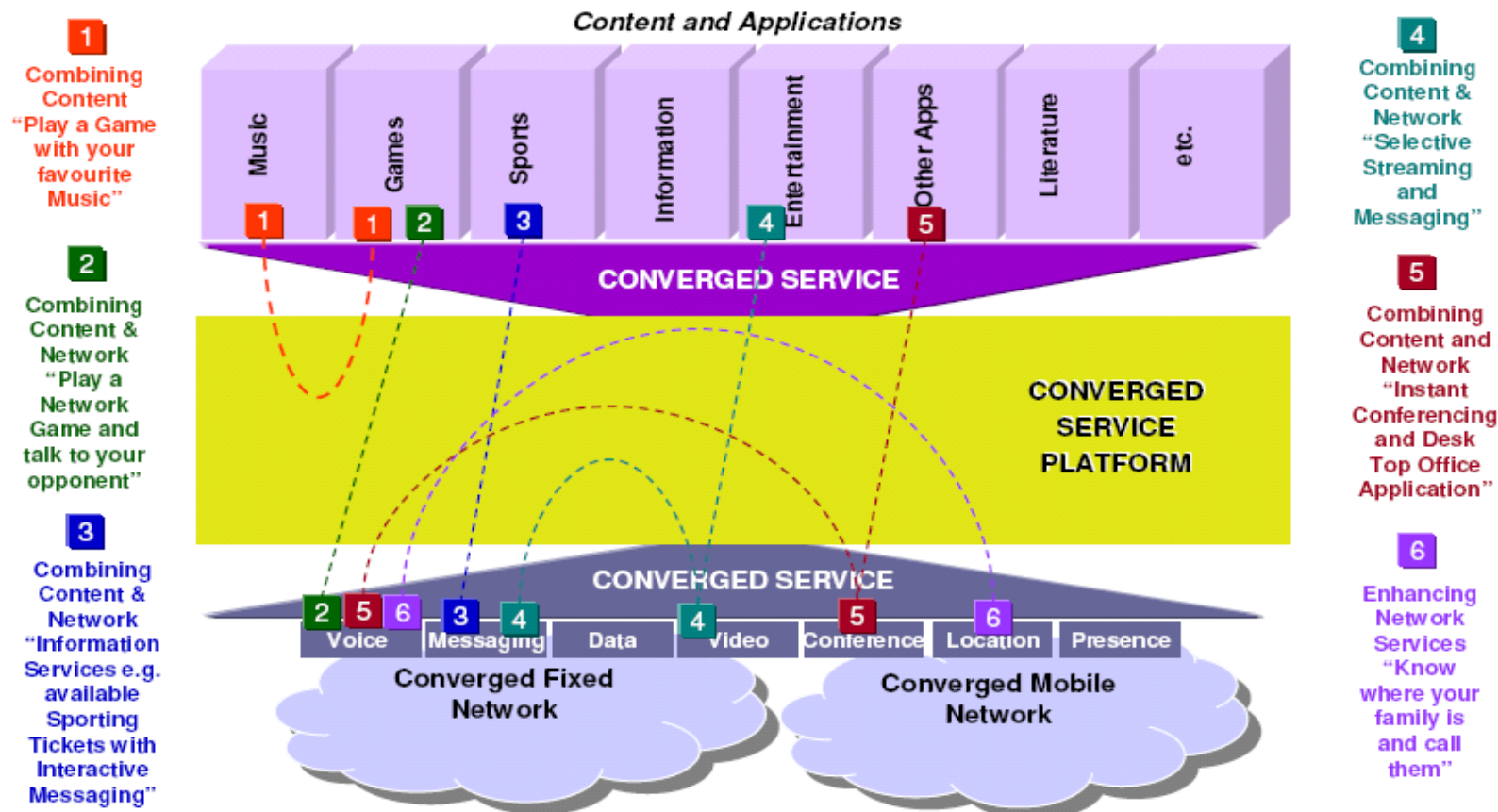
Common Building Blocks

- VoIP
- Flexible Call Routing
- Call Pick-Up
- RAN-WiFi Voice Call Continuity
- See-What-I-See
- Convergent Video
- Conferencing
- Group Communication
- Message Broker
- File sharing & transfer
- One Address book Integration

Small Business Services

- Converged Small Business Centrex
- 3G to PC video calling
- In-call file sharing & transfer
- 3rd party – vertical or horizontal B2B interface

Consumer Services

- Interactive mobile extension to online auctioning platform
- Budget "Walkie-Talkie" and kid locator
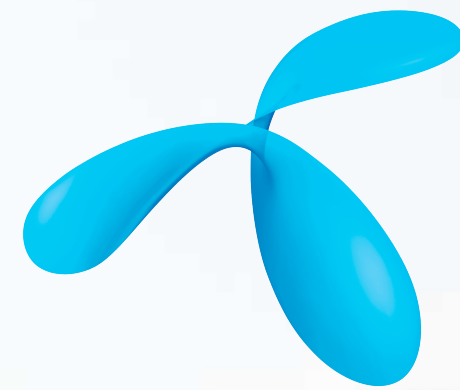- Converged Friends & Family Blog
- Content Buddy

telenor

Converged Triple/Quad Play Service Examples

Questions?