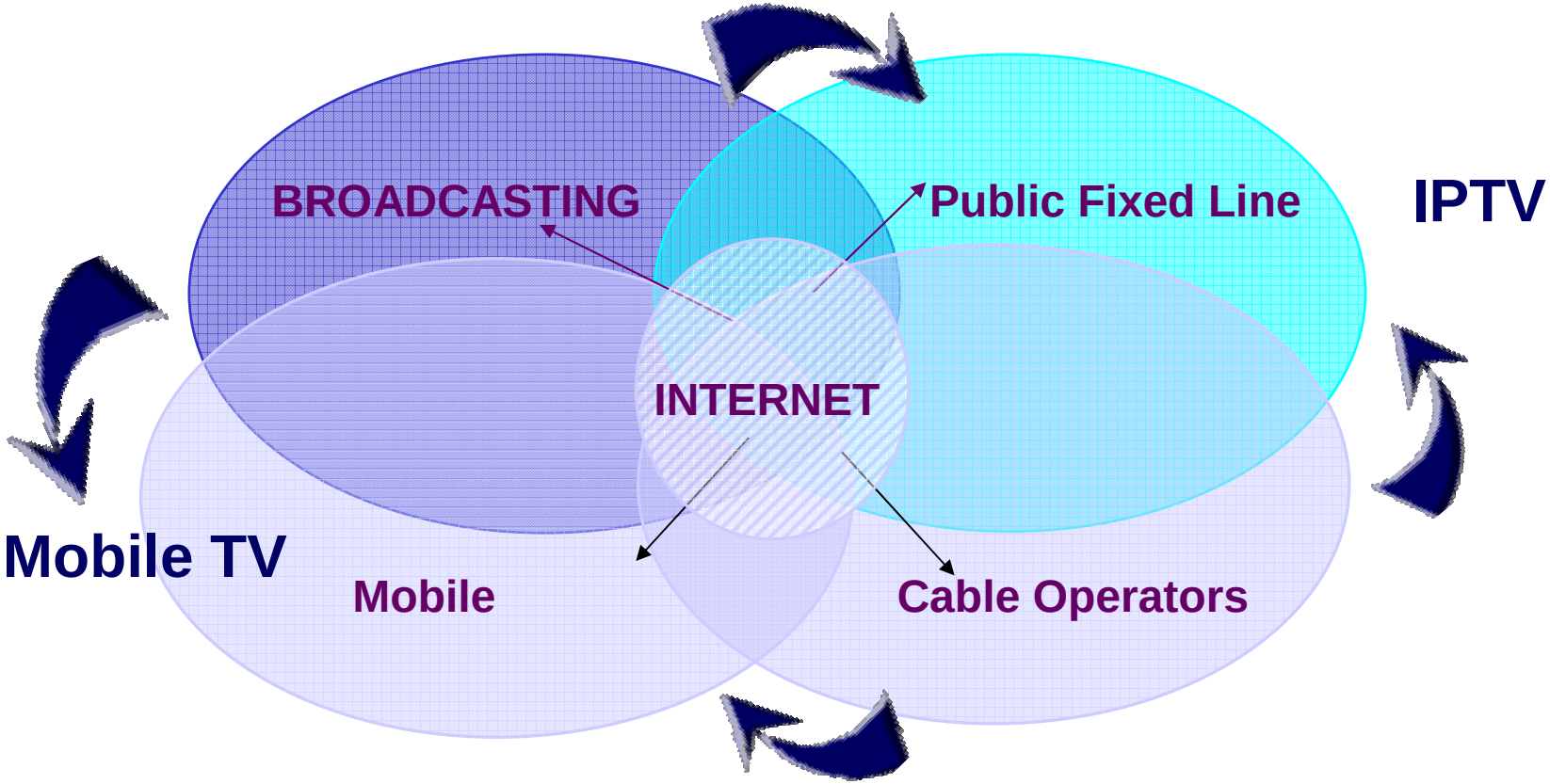
TV goes Mobile

(Bosco Eduardo Fernandes)

Chairperson Mobile TV Group UMTS Forum

www.umts-forum.org

Service Trends



- Service Innovation, Mix, Multimedia

Impact of Convergence?

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Convergence has an impact on the following:

- TELECOM's
  - Policy and Regulation
  - Services and Markets
  - Industry alliances and mergers
  - Technology and Network Architecture
  - Standards
- BROADCASTING
  - Policy and Regulation
  - New Applications and Markets
  - New Challenges and Opportunities
  - Interoperability
  - New Business models and creating an optimal ecosystem for all parties concerned.

The Mobile TV market will drive the convergence of Mobile and Broadcasting value chains

Trends and Key Drivers

- Emerging new genres of TV creating compelling reasons and new addictions for regular and frequent viewing
- Digital production and editing facilities becoming more establish to make specific made-for-mobile content more easier
- Growing culture wishes => Entertainment NOW! Any time, any location push „**Live as the killer application“**
- Technology & Services meeting user demands
- Interactivity will be a key driver for adoption of mobile broadcast TV and will open new exciting services experiences for end-users
- New device categories – based on **new use-cases**

Why MTV appeals to Operators

- Seen as a potential 3G “hero” service
  - In theory, mass appeal across the customer base
  - People seem to like it
  - Some promising usage figures reported
  - New revenues
  - Some say differentiation
  - You don’t need other people to enjoy it

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Changing shape of the Industry

- Mobile TV represents a multiplicity of potential business models for mobile operators, broadcasters or combinations of both.
- Key roles in the Mobile TV value chain could be occupied not only by 2G/3G mobile operators but also by different players such as existing terrestrial and satellite wholesale and retail broadcasters, new Pay-TV service providers and new content aggregators.
- It is also clear that the Mobile TV proposition opens up new opportunities for broadcasters especially where collaboration with mobile operators is considered.

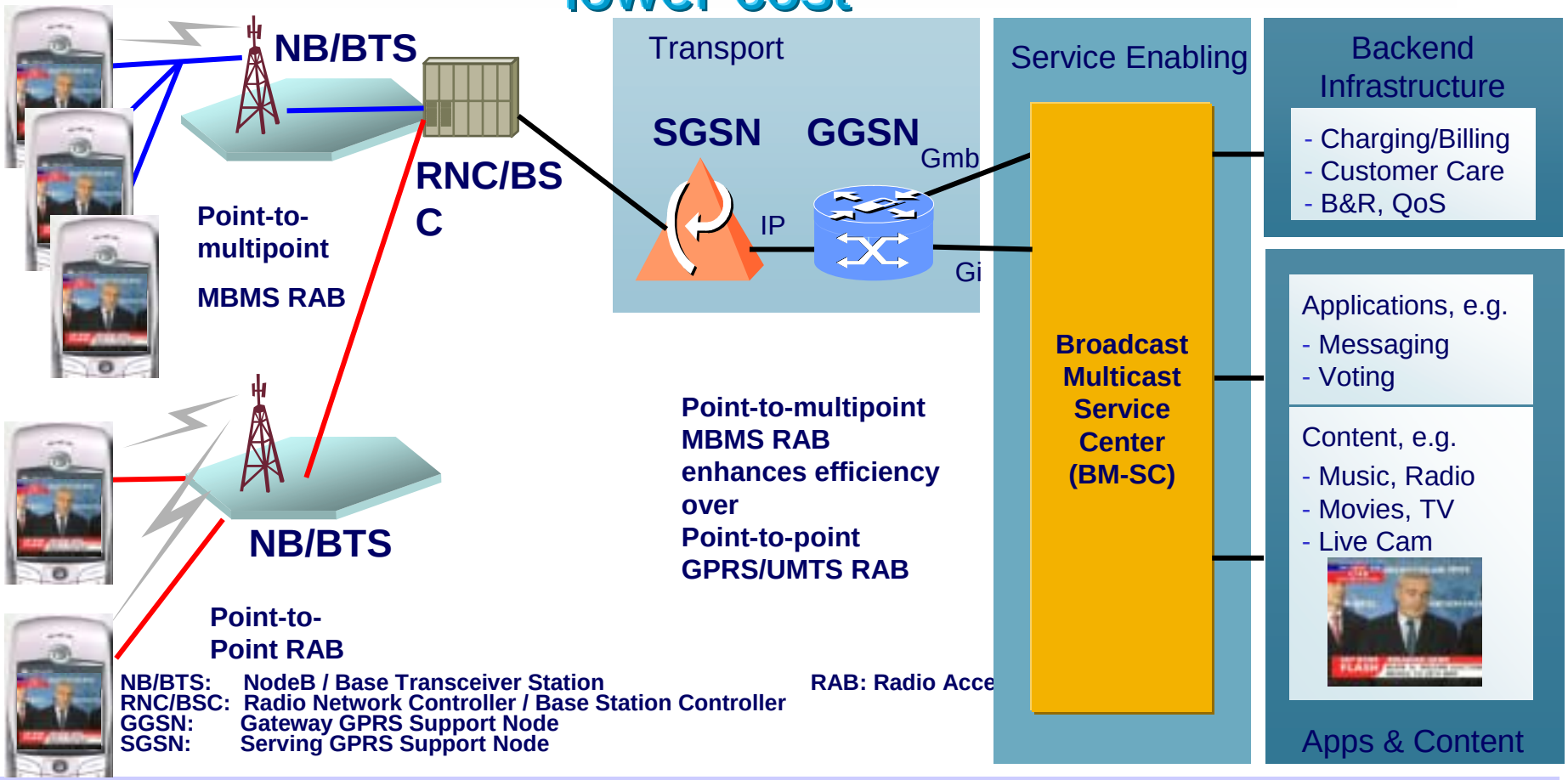
The need of broadcast and role of 3G ???

- MTV over 3G networks
  - Offer yet a new distribution channel.
  - Always on!!!! compared to Setup-box which is a dial-up modem.
  - Offers Interactive services via the Return Channel. Important for interactivity, personalisation - the value add for mobile TV
  - Broadcast services come in fact as an evolution of the existing mobile TV services offered in the unicast mode today
  - Getting a broadcast component is not absolutely critical in the short term for the mobile operators…
  - Spectrum issues mean they must lobby hard now…with showcase trials

Mobile TV – Streaming and Broadcast are complementary services and each has a role to play in the evolving mobile video marketplace

	Mobile **TV** **S**treaming	**M**ulticast / **B**roadcast **S**ervice	**D**igital **V**ideo **B**roadcast for **H**andhelds
Use Cases	▪ Personalized channels ▪ Interactivity	▪ User group channels ▪ Location determined content* ▪ Interactivity	▪ Conventional TV ▪ Interactivity via cellular network
User Experience	**Push & Pull Service** **Continuous TV experience with interactivity: pause, skip, jump to start** ***"Get individual suggestions from the chef"***	**Push Service** **Continuous TV experience tailored for multi user group** ***"Eat a tailored menu"***	**Push Service** **Continuous TV experience like at home TV -> self explaining service** ***"Eat what you get"***
Advantages	- User control (pause, replay..) - Consume on demand as you need (anytime, anywhere) - Broadcast via network - Existing customer relationships with subscribers - Today available	- Economic broadcast via cellular network - faster penetration (mobiles & coverage) - Enables MNO to control mobile TV and video market - Variety	- Cost efficient broadcast to large population - High number of channels
Disadvantages	- Bandwidth availability - High demand networks resources	- Capacity reduction - Reduce numbers of channels	- High cost devices - New infrastructure and system integration (major investment) - Limit deployment to a small number of markets - New charging requirements - Different strategies to address business are required

MBMS introduction into GPRS/UMTS networks
Improved scalability: customized Media Delivery at lower cost



USPs: Interactive unicast and broadcast Services over common RAN

Usage statistics

High level of active usage of mobile TV/video among 3G customers

Operator	Orange France (Oct. 05)	SFR (Oct. 05)
Number of mobile TV users	250,000 *	Around 100,000
Mobile TV users as a % of 3G/EDGE customers	50% *	20%
Number of sessions (per month)	Around 3.5 million *	670,000
Average viewing time per user (min per month)	35 *	N/A
Live TV vs. VoD usage	60% live / 40 % VoD	66% live / 33% VoD

* Orange France's figures include live TV and VoD

That's significant! 35 minutes per month per user, in sessions of 2-3 minutes

Spectrum

A wide range of potential uses for the UHF spectrum have been identified

Digital Terrestrial Television
- standard definition

- high definition

- local TV

Wireless broadband / cellular

Programme making

Licence exempt low power (eg wireless hubs in-home)

Mobile multimedia

RRC-06

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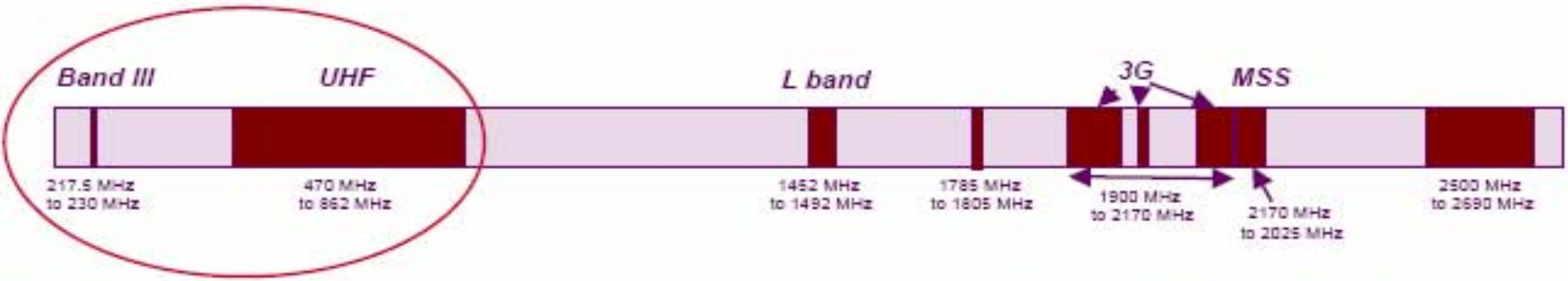
Spectrum opportunities for mobile multimedia



Increasing antenna size and reducing capacity

Reducing propagation range and increasing transmitter network costs

Ideal range?

DVB H HANDHELD

IPWireless

World DAB

TDtv

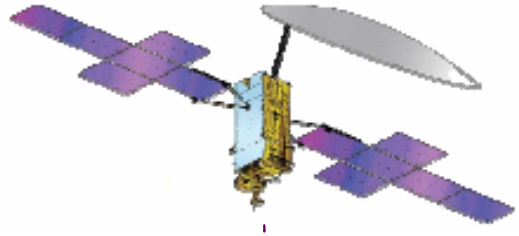
Variety of solutions

ATSC=Advanced Television Systems Committee

DMB= Digital Multimedia Broadcasting

DVB=Digital Video Broadcasting

ISDB-T=Integrated Services Digital Broadcasting-Terrestrial



DVB-H
or MediaFLO

ATSC

US

DVB-S (+)

DVB-H
or T-DMB

DVB-T

EUROPE

DMB-S

DMB-T

ATSC

Korea

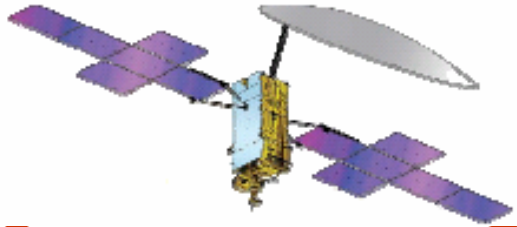
S-Band

ISDB-T
(1-seg)

ISDB-T
(12-seg)

Japan

S-DvB full fledge integration in 3G networks



3G handset

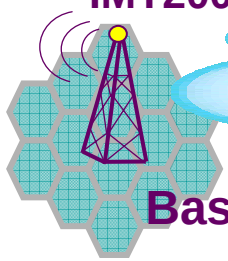
Satellite distribution link
(including gap filters)
IMT2000 mobile satellite band

Hub based
On 3G equipment

Mobile
Broadcast
Service
platform

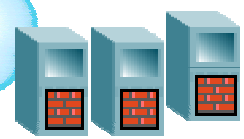
+S-DvB
features

Interactive link
IMT2000 mobile terrestrial band



3G/UMTS

VPN



MBMS

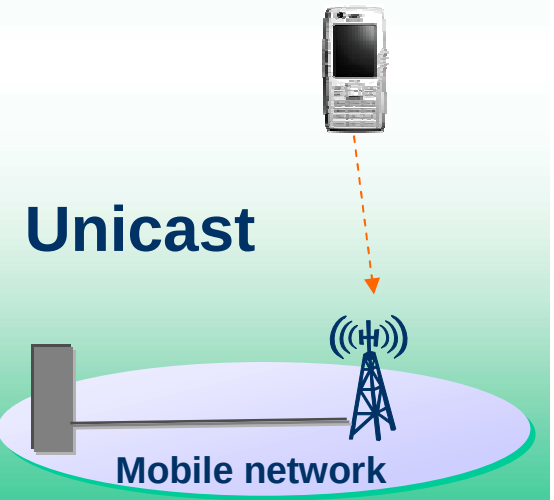
Base Station

Broadcast/Multicast
Service Centre

Services and Content

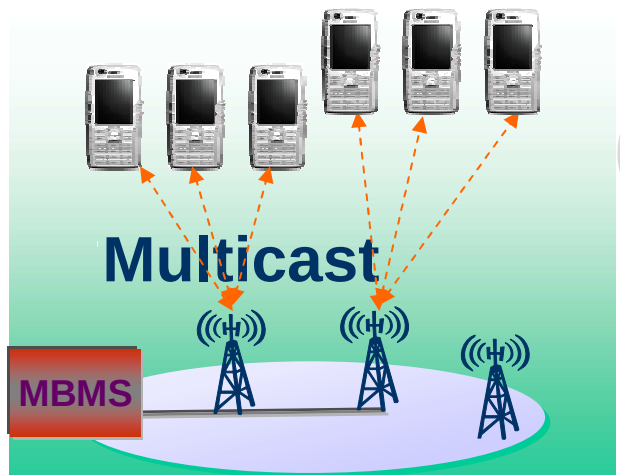
Streaming media:

- **Delivery of IP Based content over an IP network (pictures, sound, web pages and programs)**
- **Downloads, Music, clips**
- **Streaming brings media and telecommunications players together**



Multicast (MBMS)

- **Web services i.e. Traffic cameras**
- **News and enhanced MMS**
- **Enhanced LBS**
- **Advertising and TV shopping**
- **Video streaming**
- **Video blogs**



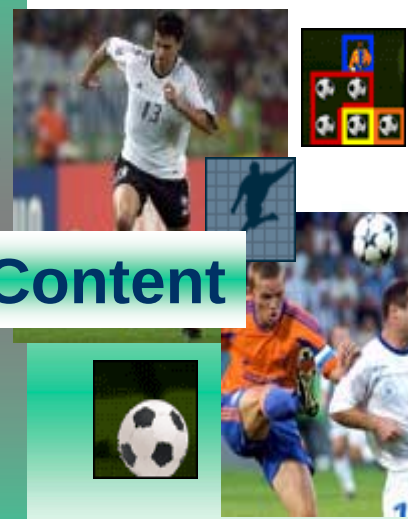
TV Broadcast

- **Interactive TV and streaming**

New environments

Deployment:
- Standards
- Network infrastructure
- Content Platforms
- Transport
- QoS
- Compression
- DRM
- Content Creation and Management
- Interoperability

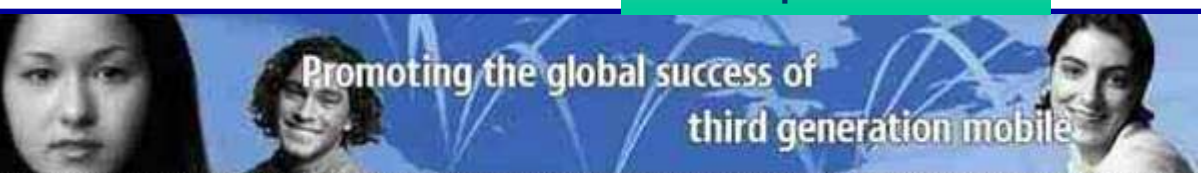
Challenges:
- Cross-media Convergence?
- Roles and relationships of participants of the value chain?
- Risks and potential?
- Business model?
- Pricing?
- Media acceptance?
- User control to select content?
- Which content on which terminal?
- Native cross-media formats?
- Further development?



Content

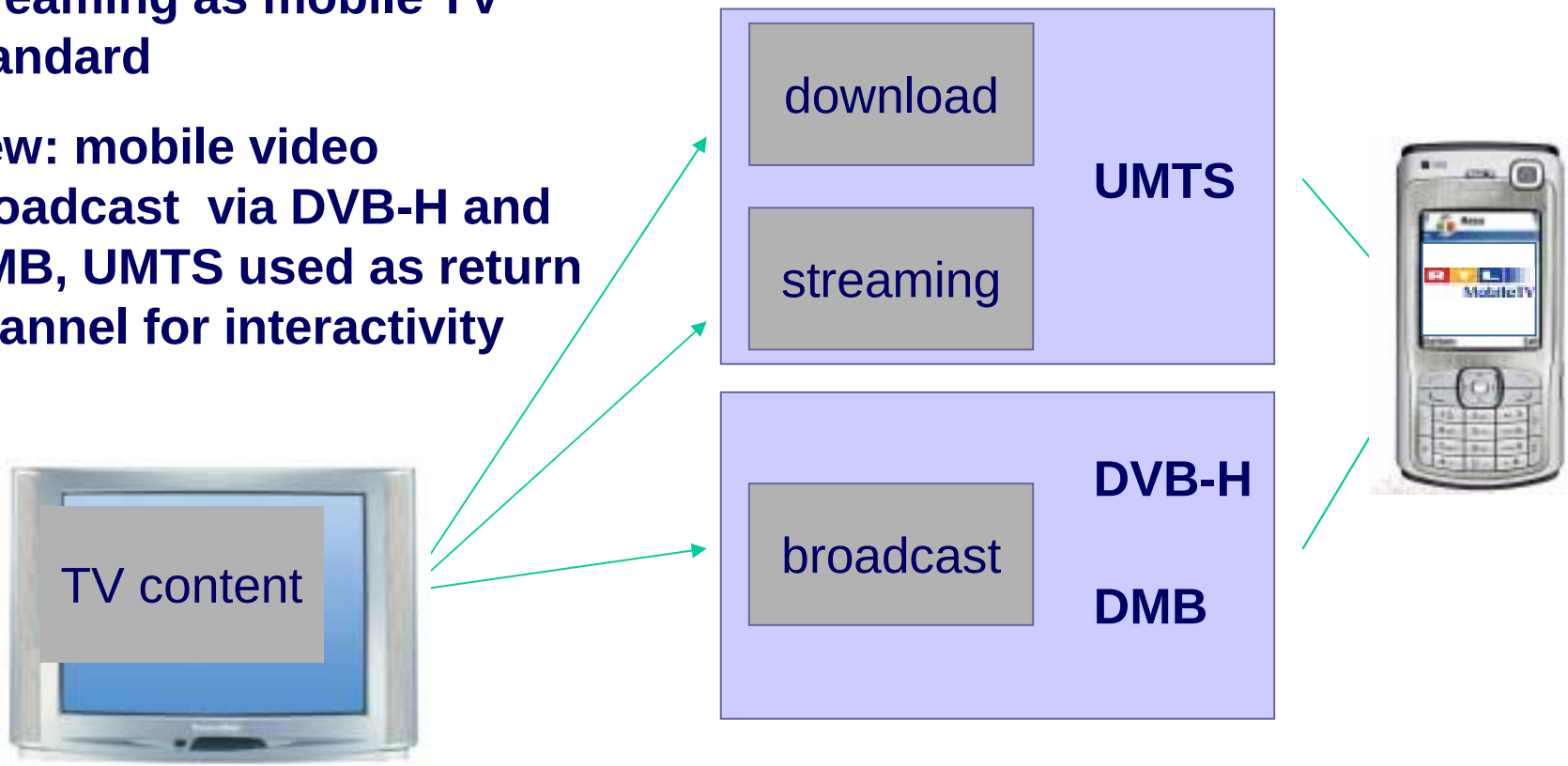
- Mobile TV

User
- Handset
- Labtop
- PDA
- . Ipode



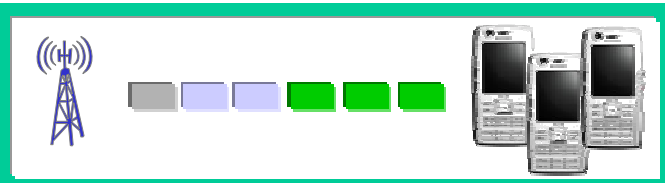
Different Content Delivery Concepts

- **Today: UMTS Video streaming as mobile TV standard**
- **New: mobile video broadcast via DVB-H and DMB, UMTS used as return channel for interactivity**



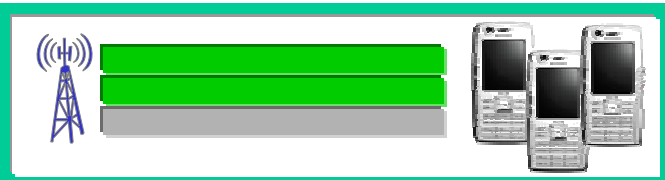
Mobile TV MBMS - Economic broadcast via cellular network

MBMS Driver #1:



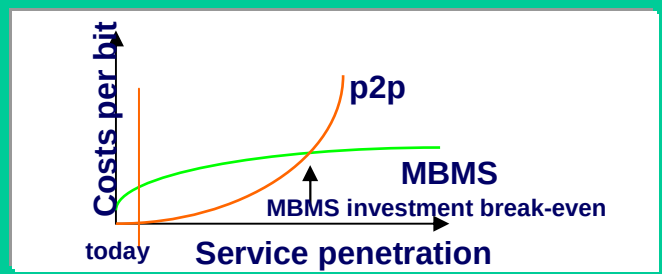
Sequential delivery of same MMS delays reception by last customer

MBMS Driver #2:



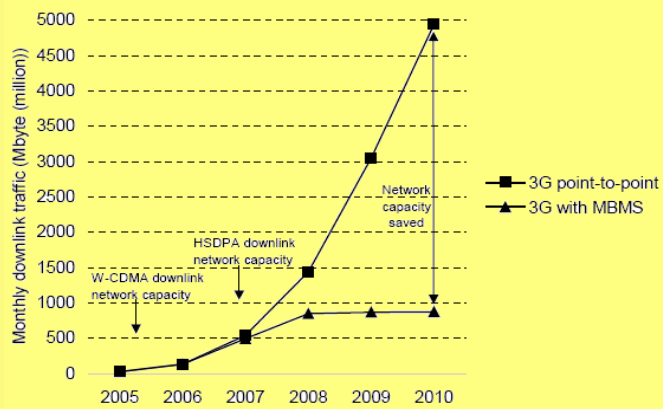
Parallel real-time video streaming feasible only for a small number of simultaneous customers per cell

MBMS Driver #3:



With growing penetration of distribution services, costs per bit for p2p bearers increase

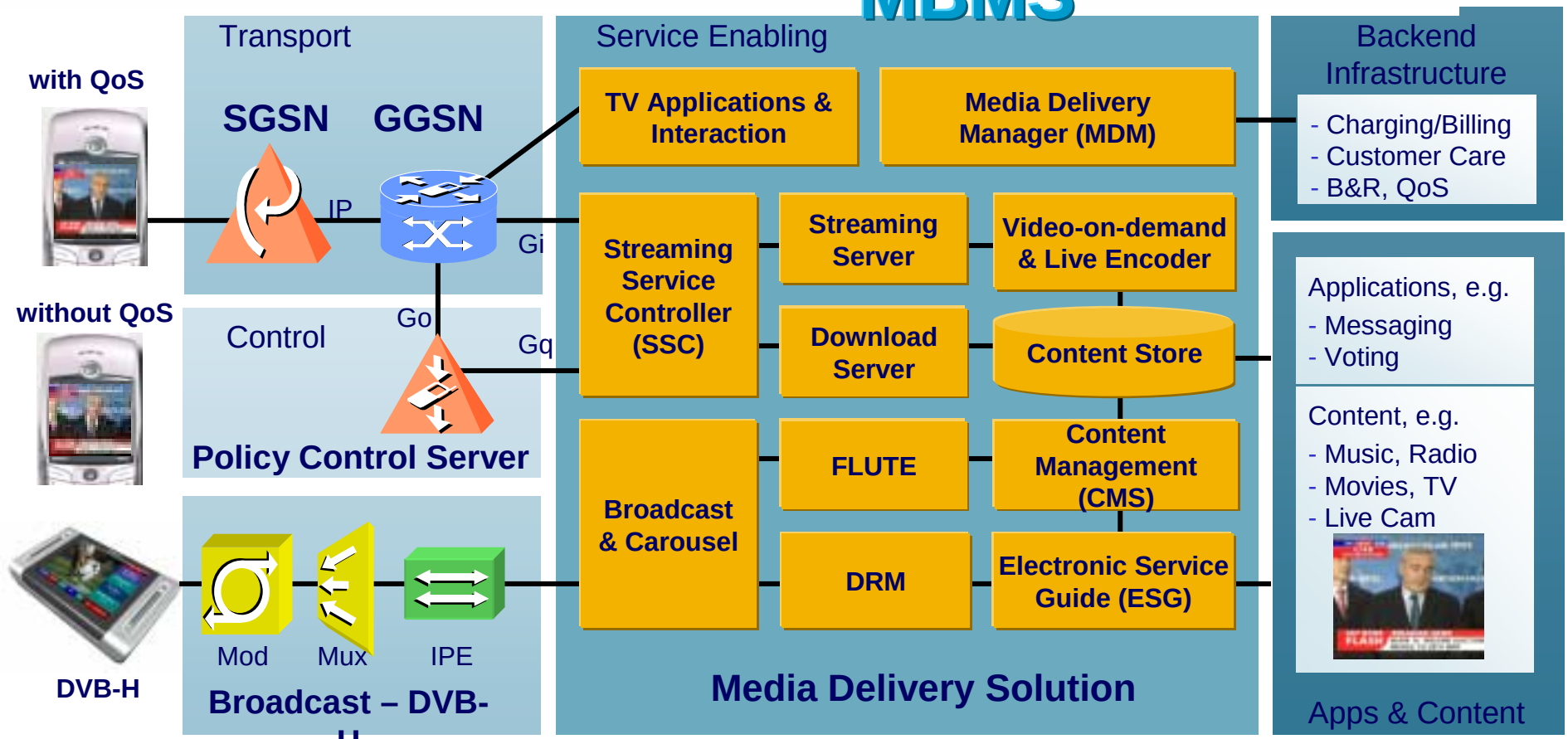
Avoid bottleneck for service revenue growth!



Source Analysis Research, 2005

Lower service delivery costs, and amortize quickly after a certain level of penetration!

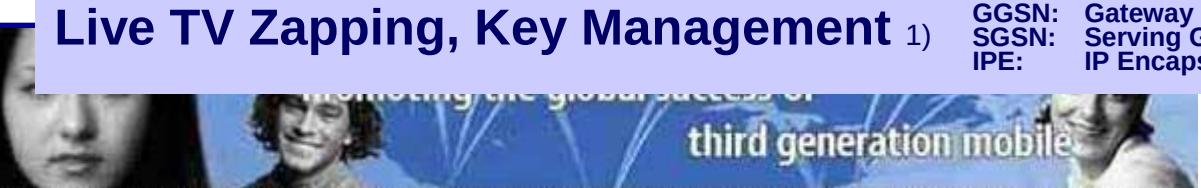
Streaming Media Delivery Solution from Unicast to Broadcast, via DVB-H and MBMS



1) Depending Device configuration

USPs: unicast, multicast and broadcast TV, Interactive Services, Mobile Live TV Zapping, Key Management 1)

GGSN: Gateway GPRS Support Node
SGSN: Serving GPRS Support Node
IPE: IP Encapsulator



The Key to this expercise

- Broadcaster's and Mobile Operators, working in collaboration will enable Mobile TV to reach a critical market mass much quicker than addressing the market independently – this will benefit the media business as a whole and will ensure Mobile TV service success.

The TELECO Industry is looking forward to joint collaboration and understanding each others positions!

But Uncertainties and Challenges remain

- Will people pay (much) for mobile TV, or do we need to consider advertising supported services?
- And if they will pay, then what are the best pricing models?
- Content related challenges
- The transition to mobile broadcast solutions
  - The role of 3G alongside mobile broadcast TV services
  - Regulatory/spectrum issues for mobile broadcast, particularly DVB-H in Europe
  - Multiple of competing technology solutions for mobile broadcast: MBMS, DVB-H, DAB, T-DMB, S-DMB, MediaFLO etc.
  - Lack of clarity over the business model for mobile broadcast
  - Device availability and pricing

Mobile TV has great potential….

- It can bring real benefits to service providers
  - Potential new revenues, people like the concept, good signs from the field
- But it's hard to get right
  - Pricing models, availability of quality content, best formats, channel mix, ease of use
- The transition to mobile broadcast solutions is a complex process on many levels
  - How to do it, cost of deployment, spectrum and regulatory issues in some markets

…but don't underestimate the task of realising it

Roadmap-Mobile TV

2009+ **Commercial services and Mass market**

2008+ **Way forward agreed and implementation**

2007+ **Publish the Results of the Work analysis**

Strategic issues, value chain,business models,regulation and spectrum.

2006 **Mobile TV Group re-installed & Joint Grp. With GSMA** (ToR and agreements with GSMA')

1998 ***The Dawn of Mobile TV in UMTSF ICTG***

Current Work Items

- *Obtain a better understanding of broadcast regulation that focuses subsequent lobbying to ensure that the balance between mobile and broadcast is maintained*
- *Creation of Lobbying material to regulators on Mobile TV Spectrum needs (both on-net and off-net) to support mobile operator's needs*
- *Try to reach a common position for prioritisation of Mobile TV solutions*
- *Understand the associated architectures, costs, value chains and business models of the various mobile TV solutions*
- *Building a Mobile TV knowledge bank on trials, commercial service and revenues for the benefit of the GSMA members*
- *Create 'White Papers' on each of the Mobile TV solutions*
- *Investigate any potential operator collaboration to build common network resource*
- *Build a Roadmap for our members (UMTSF and GSMA).*

Conclusions

- Mobile TV services (**Combination of 3G/ Broadcast Content**) are attractive for mobile users and mobile operators and will be delivered via unicast, multicast or broadband mechanism.
- MBMS will be complementary service to broadcast and will be available in the timeframe 2007-08 to address larger install device base.
- Mobile TV Content will still be king and needs to be adapted for small form factor devices. User experience will be a key success factor again.
- MBMS will be also introduced in Geran (2,5G) networks.
- DVB-H will be very useful for evolving user requirements and when higher bit rates are required.
- Convergence of value chain may create tensions and Broadcaster and third parties must become increasingly involved.

Thank you for your attention!!!