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# **DVB-UMTS**

## **An (un)easy co-operation**

**IP CableCom / MediaCOM 2004 / Interactivity in Multimedia**  
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# Outline

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- ❖ *Contextual aspects*
- ❖ *(Business) actors*
- ❖ *Opportunities*
- ❖ *Enabling technologies*
- ❖ *Time scales*
- ❖ *Conclusions*

# Contextual aspects

## Digital revolution

- A bit is a bit, regardless the content it is part of
  - Content is transport agnostic
  - Networks are content agnostic

## Market pull

- Increase for wireless access presence demand
- Faster return on investment requirement for new systems

## Regulatory pushes

- Information Society paradigm
  - Telecom deregulation
- Content/Access regulation evolution
- More efficient spectrum usage considering projected traffic patterns

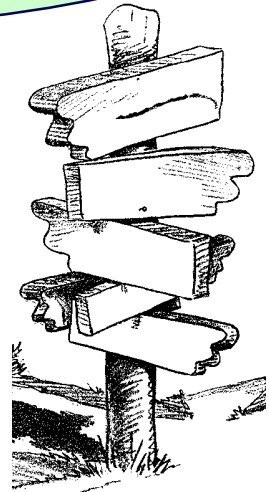
## User is king

- Driver for content production
- Driver for wireless access densification
- Main source of revenue

## Technological pushes

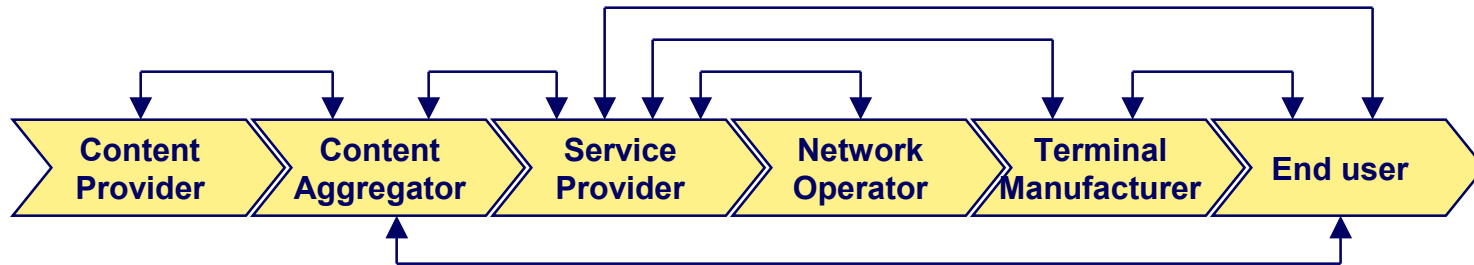
- Beyond IMT-2000, 3GPP evolution
- EU IST: MCP, DRiVE, DIAMOND, CISMUNDUS, ...
- WWRF

**Broadcast/Cellular  
convergence  
is at the crossroads**



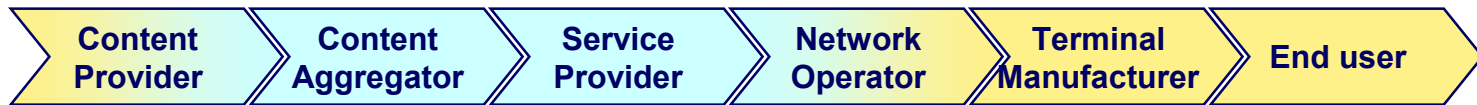
# (Business) actors

## ❖ *Generic value chain*

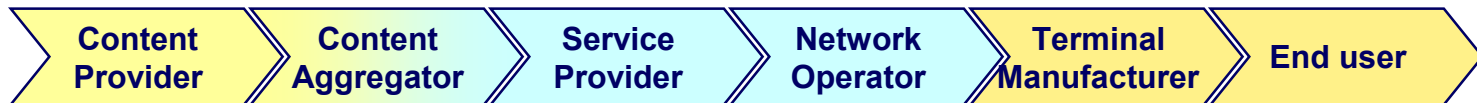


## ❖ *Today actors*

### ❖ *Broadcaster*



### ❖ *Mobile operator*



## ❖ *Future*

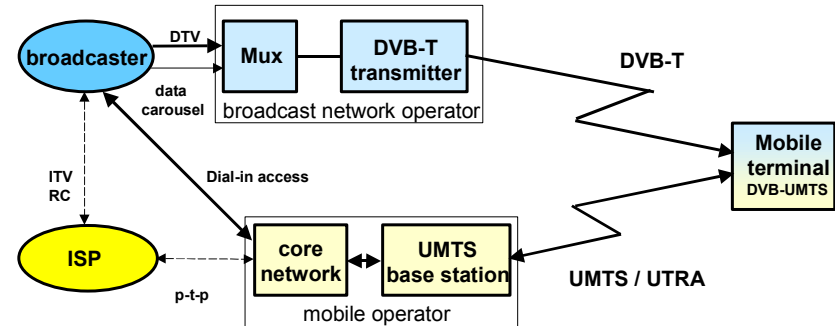
- ❖ Fragmentation of the value chain
- ❖ Multiple instances of each actor class from different domains due to service convergence
  - ◆ IP content providers and aggregators in broadcast world
  - ◆ DVB content providers and aggregators in mobile world

# Opportunities (1/2)

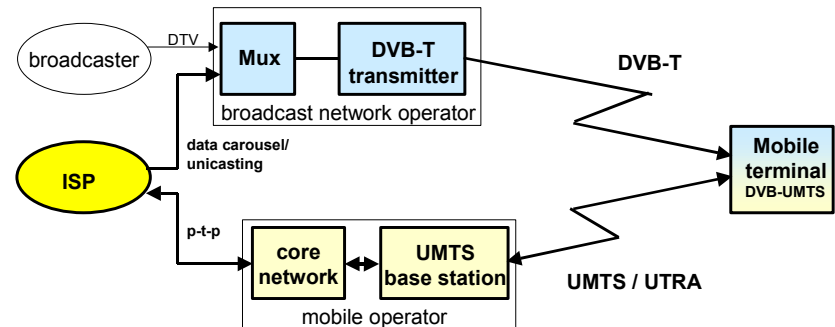
Source: AHG DVB-CM-UMTS

## ❖ Business cases

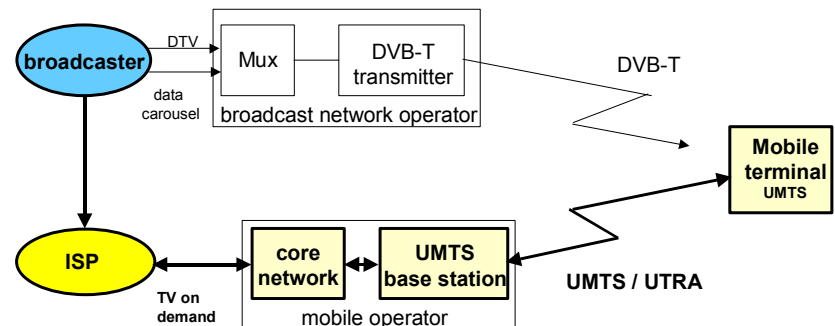
- ❖ UMTS as an interaction channel for DVB (A)



- ❖ IP services coordinated on UMTS and DVB networks (B)



- ❖ Delivery of DVB services via UMTS (C)



# Opportunities (2/2)

Source: AHG DVB-CM-UMTS

## ❖ Applications

### Entertainment (scenario A,C)

TV, radio programs

real time audio/ video on demand

games, Interactive TV

### General information (scenario B)

news, weather, financial info

travel, traffic, maps

commercial info

### Individual information (scenario B)

Web browsing, file transfer

individual traffic inf. + navigation

emergency, location based services

### Business and commerce

remote access, mobile office

email, voice, unified messaging

e-commerce, e-banking

UMTS DVB-T UMTS&DVB-T

-	++	++
-	-	-
+	-	++
+	+	++
+	+	++
+	+	++
+	-	++
+	-	++
++	-	++
++	-	++
++	-	++

Additional benefits

# Enabling technologies

## ❖ *Network technologies*

- ❖ Cellular: 2.5G / 3G / ... + WLANs
- ❖ Broadcast: DVB-T, DAB
- ❖ IP technologies (routing, multicast, signaling...)
- ❖ Network and service management

## ❖ *Content coding technologies*

- ❖ Coding standards (MPEG4, H26L, ...)
- ❖ Content indexing (XML, MPEG7, ...)

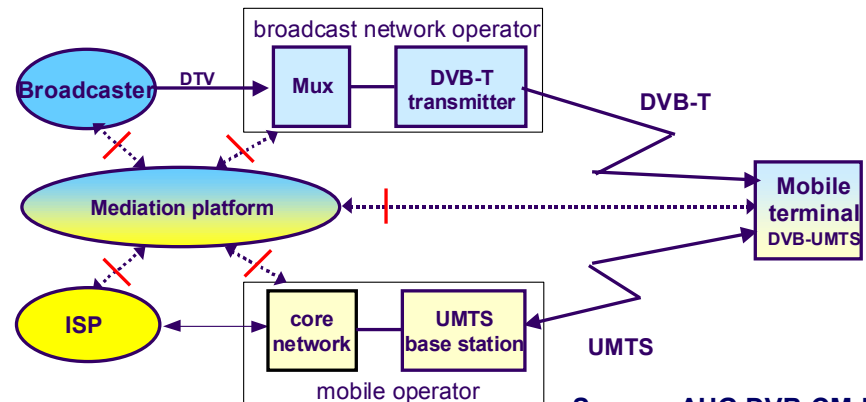
## ❖ *Application Programming Interfaces*

- ❖ MHP, OCAP, ...
- ❖ MExE

*Java based*

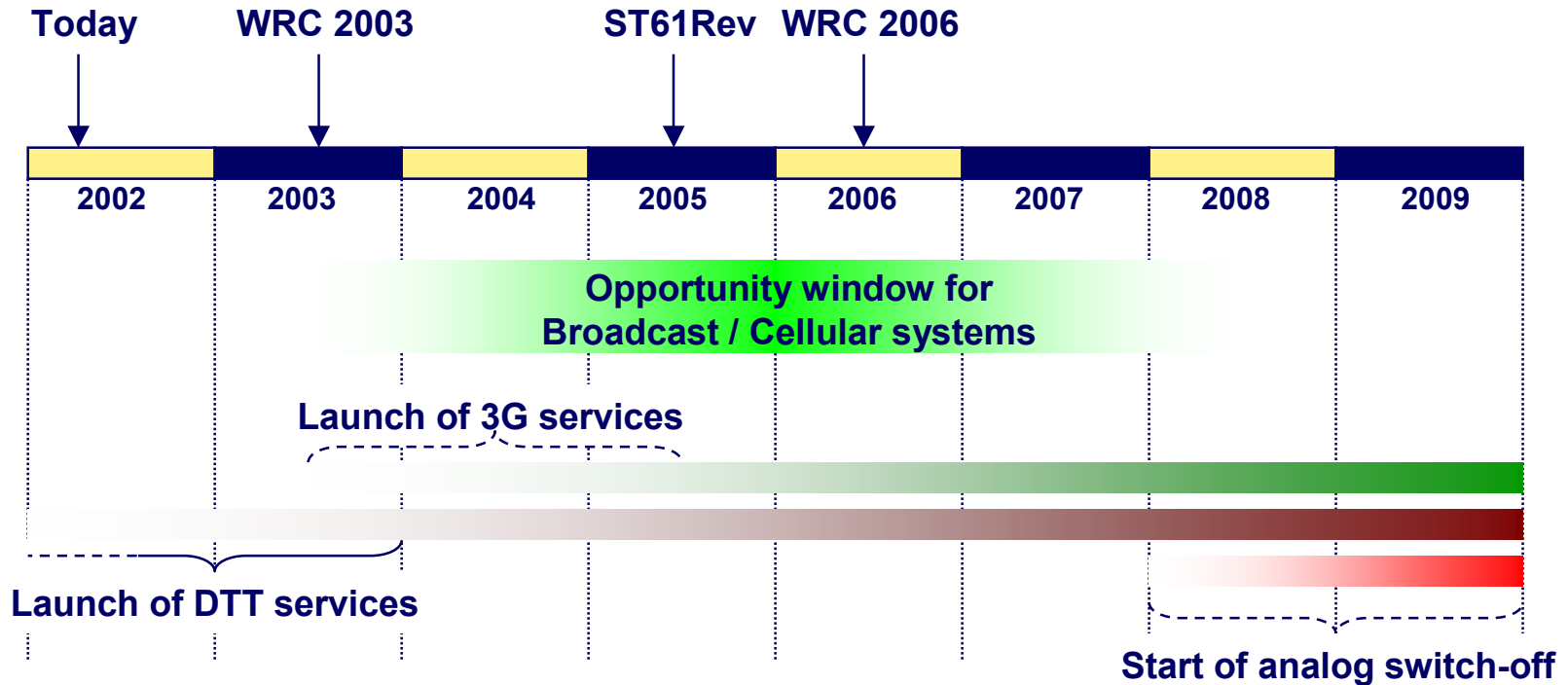
## ❖ *and (open) standards*

- ❖ to enable multi-vendor interworking



Source: AHG DVB-CM-UMTS

# Time frame guesstimates



- ❖ *Important events that are going to condition the next 15 years*
- ❖ *Uncertainties regarding the success and take-up of new technologies*
- ❖ *Hybrid systems to stimulate the take-up*



# Conclusions

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## ❖ ***DVB / UMTS synergy is an opportunity for***

- ❖ Broadcasters in general to address users in new situations;
- ❖ Public broadcasters to offer Internet-like services to everybody;
- ❖ Mobile operators to diversify opportunities for loading networks;
- ❖ Mobile operators to bring applications meeting user expectations (quantity and quality).

## ❖ ***But***

- ❖ Regulation is and must evolve to facilitate new usage of existing systems;
- ❖ Combination of existing enabling technologies must be standardized to enable fast market growth, and cost-efficient products; and
- ❖ Broadcasters and mobile operators must understand each other constraints and opportunities

## ❖ ***After all, DVB/UMTS is a precursor TWIM system***