ANACOM & DigiTAG Mobile TV

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Broadcast/unicast complementarity for mobile TV and technology/spectrum issues

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1. **Introduction**
2. Broadcast/unicast complementarity for mobile TV
3. Technology/spectrum issues

Introduction

- Mobile TV is not just one mobile multimedia service among others …
- This is going to be a **“killer application” on a mass market**

Introduction

Key conditions are fulfilled for the growth of mobile TV/video

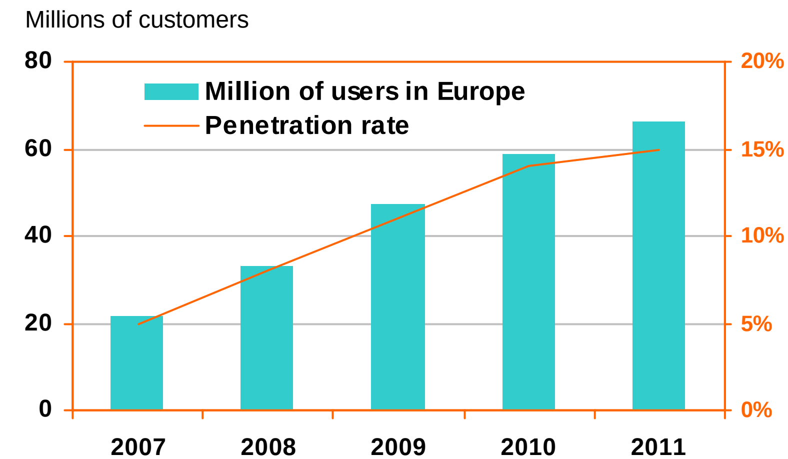
- **Deployment of EDGE / 3G / 3G+ networks** allowing to offer multimedia services and to improve the quality of users' experience
- Increase of **Mobile broadband handset penetration :**
  - **In Europe, the penetration of 3G/3,5G handset will be 1/3 by 2008 and 62% by 2011 (1)**
- **Development of mobile broadband** offers and **usages**
- Among them, **TV/Video should be a key service** :
  - Mobile TV is considered as a relevant service for mobile users : concluding a DVB-H trial in Stockholm, 87% of the participants said that the service left a positive impression (2)
  - The service is a new way to watch TV and a new way to use his phone : "People are naturally curious about new technology and Mobile TV has definitely exceeded my expectations. It clearly creates a new need" (3)

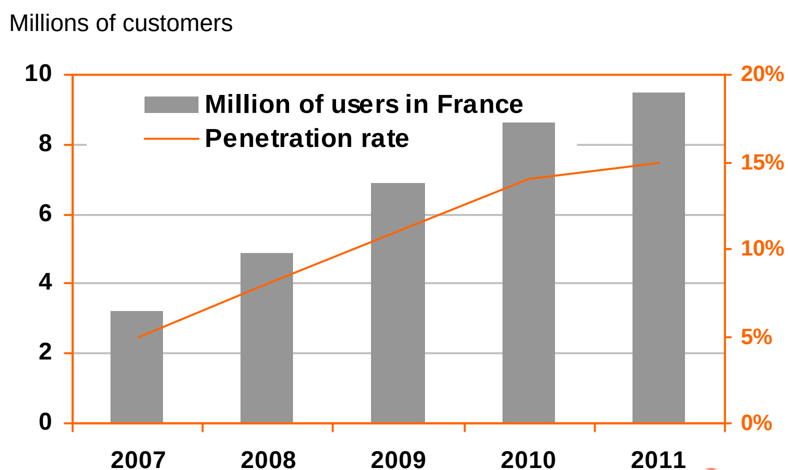
(1) Jupiter Research October 2006

(2) DVB-H Trial in Stockholm April 2007

(3) Trial Telia Nokia January 2007

+ 65M potential users in Europe in 2011





Source : Jupiter Research October 2006

Introduction

Mobile TV actually can include a wide range of services :

- Normal TV in mobility
- Interactivity and advertising
- Time shifting : PVR etc…

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Broadcast/unicast complementarity for mobile TV

- **Commercial unicast Mobile TV services already exist**, as part of 2G+/3G/3G+ services : Orange has launched such services in countries where present.
- This is **successful** : # 700 000 Orange’s active mobile TV users across Europe by mid 2007
- **Up to 60 channels** are available
- Under 3G+ coverage : “HD mobile TV” offers **a quality of video/audio just as good as DVB-H**
- **…. But this service should be enhanced ➔ ….**

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Broadcast/unicast complementarity for mobile TV

- Basic service need of mobile TV Customers is to get access, wherever possible, to :

1. large audience live programs, related to events, sports etc.
2. and, at different times, specific interests programs chosen among a maximum number (not necessarily live programs)

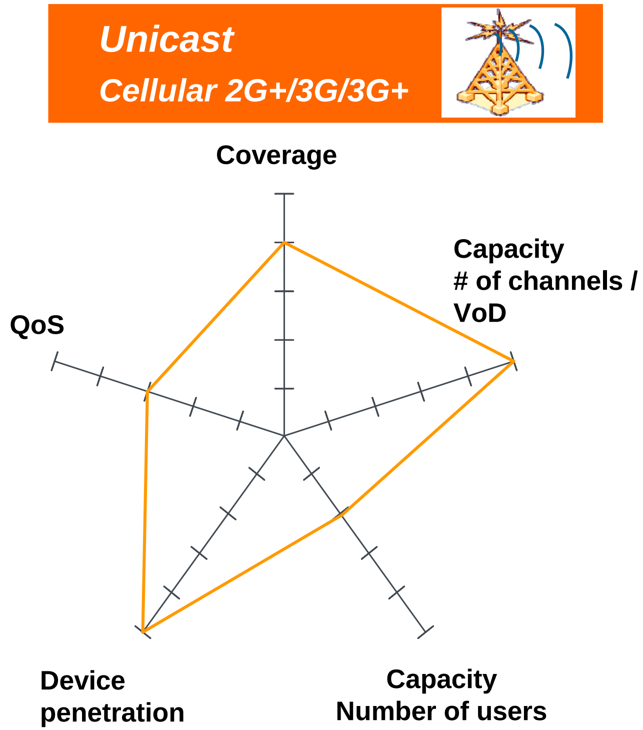
… and all these programs should appear as one single set of user friendly services (ie “Unified Experience”)

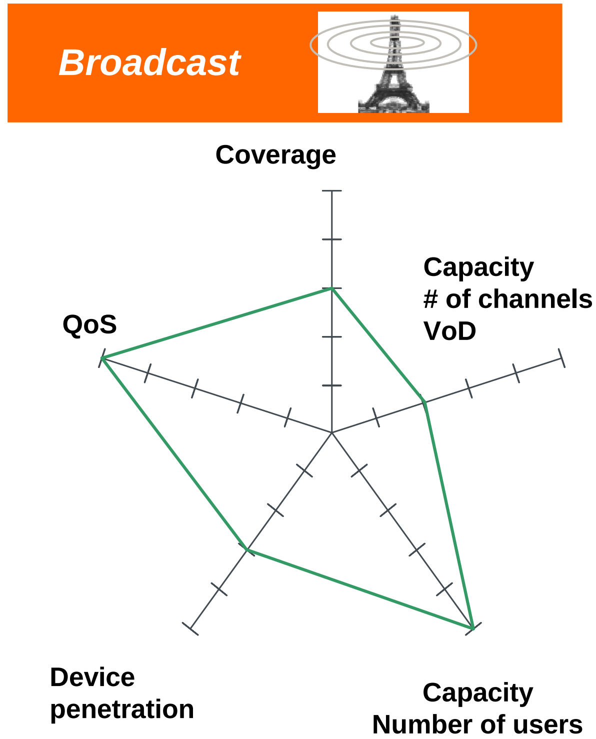
- Solution :
  - Broadcast is optimal for need 1
  - Unicast is more adequate for need 2

➔ **broadcast/unicast combination is needed to cover the two …**

➔ And, in addition to fulfill the basic requirements of a TV service, this combination, due to the uplink, **offers the opportunity to enhance the customer promise with interactive TV services**

Broadcast/unicast complementarity for mobile TV





Complementarity of services, QoS and radio coverage

- improvement of coverage and QoS **at home** can be provided with a combination of wireless access to fixed broadband and convergent mechanisms

Broadcast/unicast complementarity for mobile TV

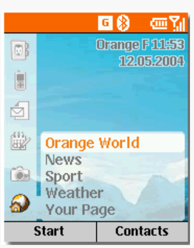
the promise: deliver a smooth experience

➔ "Richmedia" applications provide user-friendly interface

quick access to the service

Hard/soft Key

Home screen

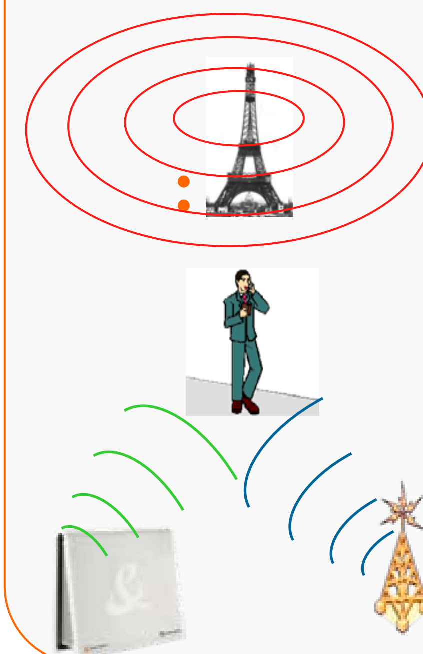


few interactions

80% of usages done by Joypad

fast use : channel switching, handover…

seamless use over cellular, broadcast, Wifi…



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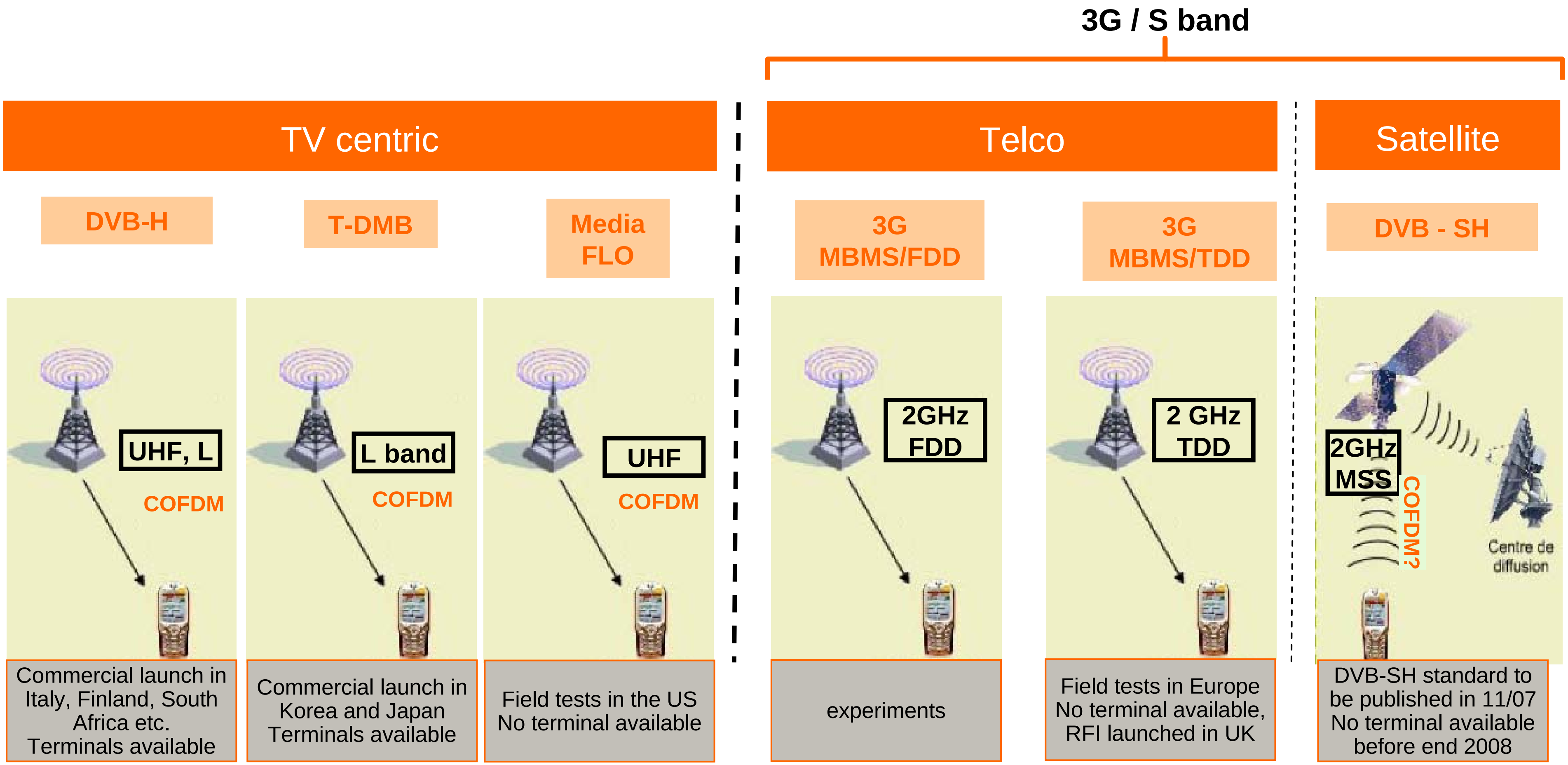
Technology/spectrum issues

- Unicast best technology is obviously UMTS and its “children”: 3G+/IMT-LTE …
- whereas the choice of a broadcast technology is a more open issue …

Technology/spectrum issues



DVB-H, T-DMB and Media FLO have to share broadcast bands with other broadcast services
MBMS/FDD & TDD and DVB-SH are TV broadcast services in 3G bands
MBMS/TDD band is often already included in existing 3G licenses (TDD 3G band segment).
DVB-SH requires new licenses (Mobile Satellite Service 3G band segment)

Technology/spectrum issues

Due to spectrum scarcity, whatever the broadcast technology :

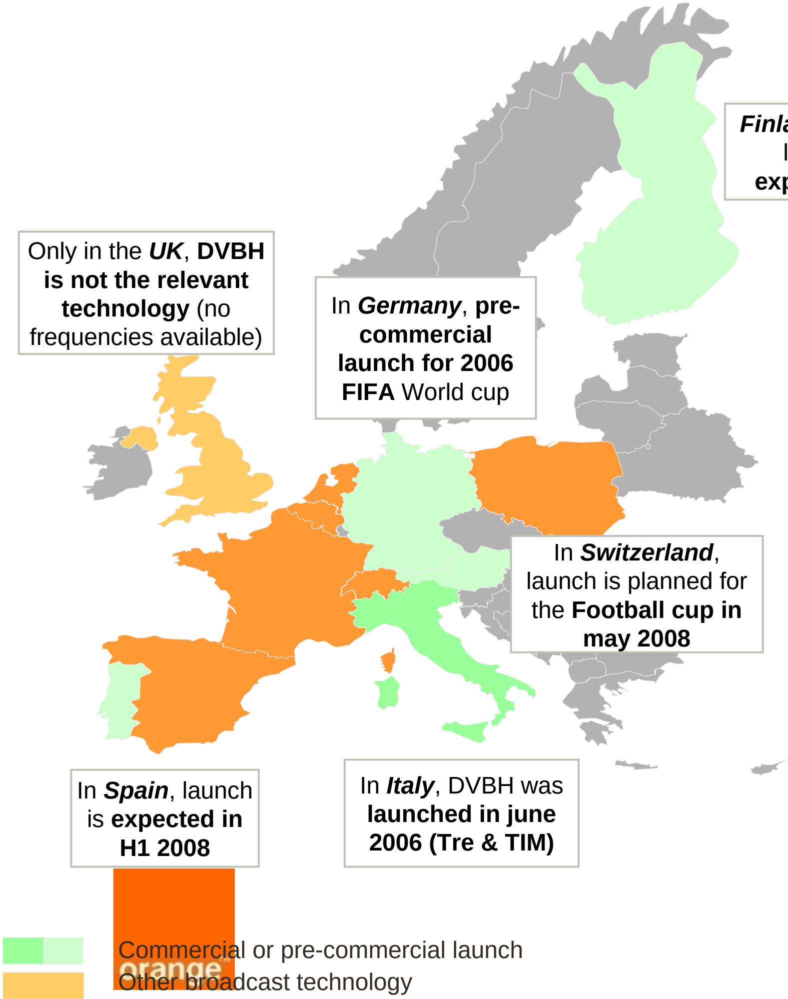
- Network operators need to share frequencies and access network…
- and identify means to provide competitive service offers

➔ Difficult balance between cooperation and competition

➔ network issues : in addition of radio access technology, Conditional Access System (CAS) and Electronic Service Guide (ESG) characteristics are key issues

In Europe, the DVB-H technology leads the way in the deployment of broadcast networks But …

European initiatives show that broadcast and mainly DVB-H is becoming a standard



But DVB-H is also facing uncertainties linked to regulatory and business issues in some countries

Examples :

- **UK**
  - Frequencies availability and allocation process > 2011
  - Licenses cost
- **Spain**
  - Licenses attribution process roadmap
  - On-going discussions on Business Model between players and regulatory authorities
- **Switzerland**
  - The OfCom will soon launch a beauty contest for the attribution of one single DVB-H license
  - On-going discussions on Business Model between players and regulatory authorities
- **France**
  - License attribution process roadmap
  - Frequency availability before and after the digital dividend ?
  - On-going discussions on pending issues between players and regulatory authorities

If delayed, DVB-H may have to compete with alternative technologies in some countries

Technology/spectrum issues

Orange Group's strategy for broadcast mobile TV :

- **"Priority" given to DVB-H, where Ecosystem is adequate**
- **But not "exclusivity"** :
  - DVB-H/UHF frequencies not available in some countries (fi UK)
  - Even where available in given countries :
    - these frequencies may not be available nationwide (coexistence with analog TV and DTT) : opportunity of hybrid broadcast technologies ?
    - the local DVB-H business model may not be satisfactory : opportunity to compete with an other technology ?
    - …

thank you !

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