

ANACOM & DigiTAG Mobile TV

Aveiro (Portugal) July 9th 2007

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)

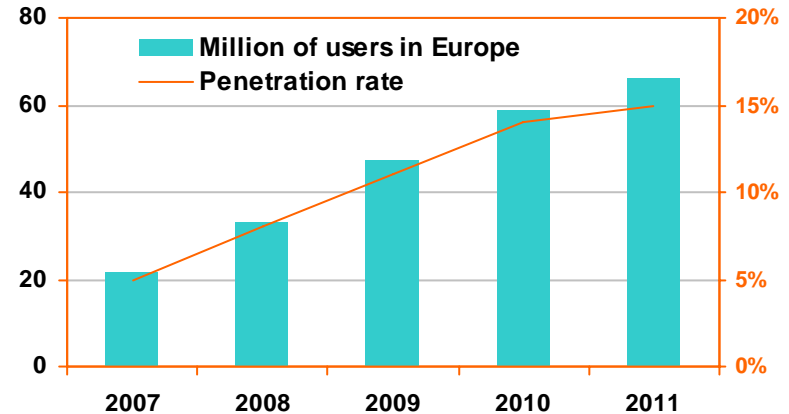
(1) Jupiter Research October 2006

(2) DVB-H Trial in Stockholm April 2007

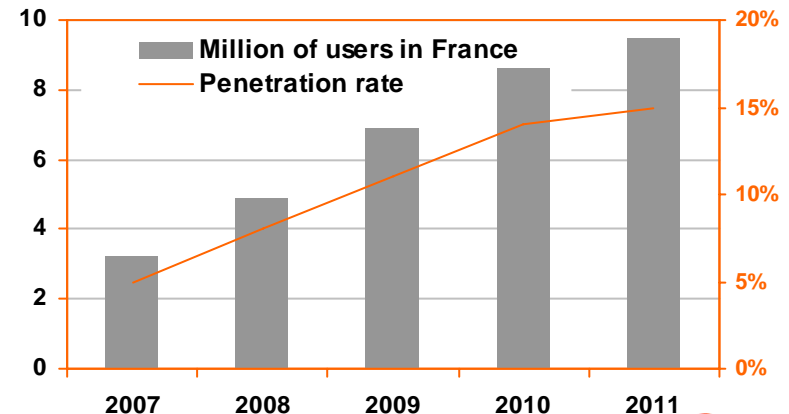
(3) Trial Tella Nokia January 2007

+ 65M potential users in Europe in 2011

Millions of customers



Millions of customers



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** →



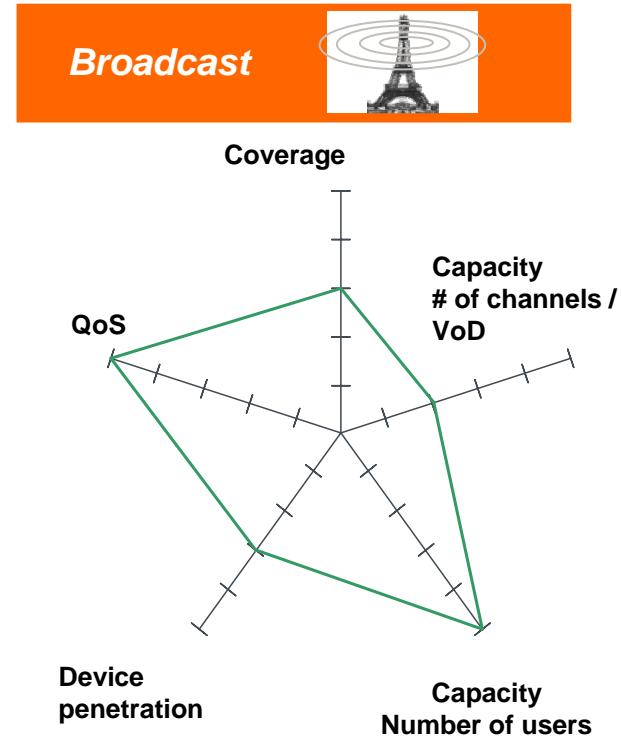
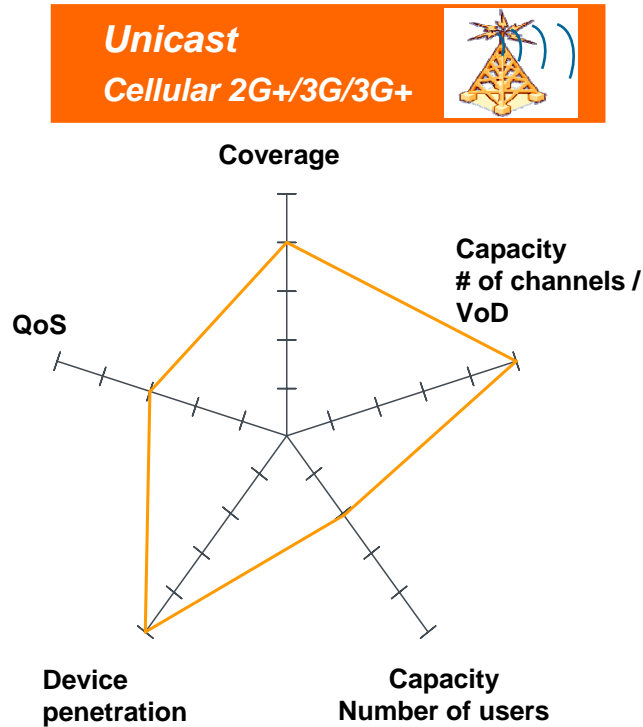
Broadcast/unicast complementarity for mobile TV

- 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

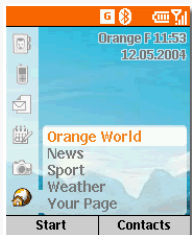
→ “Richmedia” applications provide user-friendly interface

quick access to the service

Hard/soft Key



Home screen



few interactions

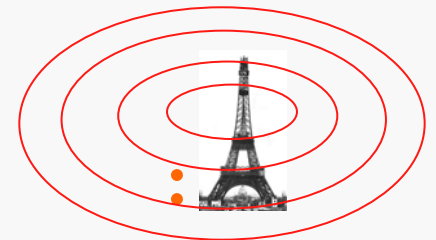
80% of usages done by Joypad



fast use : channel switching, handover...



seamless use over cellular, broadcast, Wifi...



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3. **Technology/spectrum issues**



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

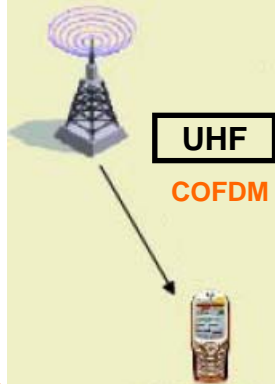
3G / S band

TV centric

DVB-H

T-DMB

Media
FLO



Commercial launch in Italy, Finland, South Africa etc. Terminals available

Commercial launch in Korea and Japan Terminals available

Field tests in the US No terminal available

Telco

3G
MBMS/FDD

3G
MBMS/TDD



experiments

Field tests in Europe No terminal available, RFI launched in UK

Satellite

DVB - SH



DVB-SH standard to be published in 11/07 No terminal available before end 2008

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 :

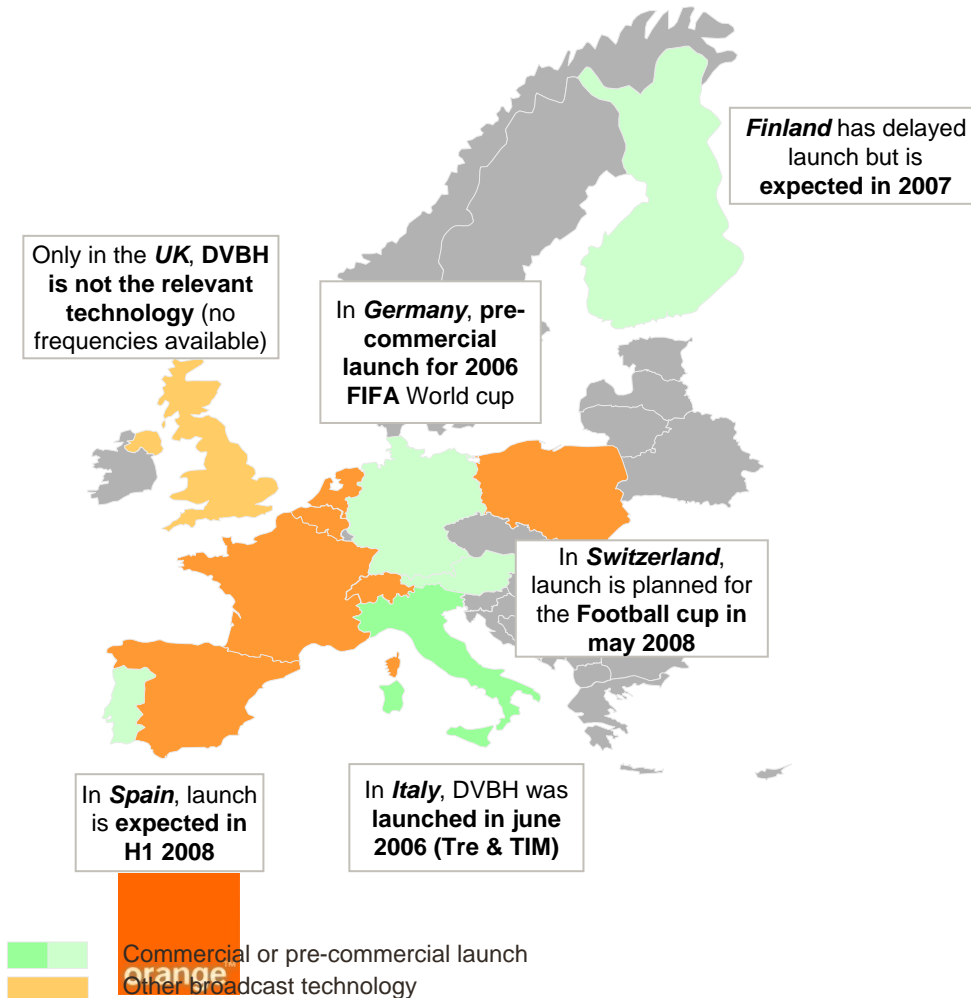
- Network operators need to share frequencies and access network...
 - and identify means to provide competitive service offers
- ➔ Difficult balance between cooperation and competition
- ➔ network issues : in addition of radio access technology, Conditional Access System (CAS) and Electronic Service 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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Última actualização: 10.07.2007
Publicação: 09.07.2007
Autor: ANACOM