TV goes Mobile

(Bosco Eduardo Fernandes)

Chairperson Mobile TV Group UMTS Forum

www.umts-forum.org
Service Trends

- Broadcasting
- Mobile
- Cable Operators
- Internet
- IPTV
- Mobile TV

Service Innovation, Mix, Multimedia
Impact of Convergence?

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.
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
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.

<table>
<thead>
<tr>
<th>Use Cases</th>
<th>Mobile TV Streaming</th>
<th>Multicast / Broadcast Service</th>
<th>Digital Video Broadcast for Handhelds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>▪ Personalized channels</td>
<td>▪ User group channels</td>
<td>▪ Conventional TV</td>
</tr>
<tr>
<td></td>
<td>▪ Interactivity</td>
<td>▪ Location determined content*</td>
<td>▪ Interactivity via cellular network</td>
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<td><strong>Push &amp; Pull Service</strong></td>
<td><strong>Push Service</strong></td>
<td><strong>Push Service</strong></td>
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<td>Continuous TV experience with interactivity: pause, skip, jump to start &quot;Get individual suggestions from the chef&quot;</td>
<td>Continuous TV experience tailored for multi user group</td>
<td>Continuous TV experience like at home TV -&gt; self explaining service &quot;Eat what you get&quot;</td>
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<td>User control (pause, replay..)</td>
<td>Eat a tailored menu&quot;</td>
<td></td>
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<td></td>
<td>Consume on demand as you need (anytime, anywhere)</td>
<td>- Economic broadcast via cellular network</td>
<td>Cost efficient broadcast to large population</td>
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<td></td>
<td>Broadcast via network</td>
<td>- faster penetration (mobiles &amp; coverage)</td>
<td>- High number of channels</td>
</tr>
<tr>
<td></td>
<td>Existing customer relationships with subscribers</td>
<td>Enables MNO to control mobile TV and video market</td>
<td></td>
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<tr>
<td></td>
<td>Today available</td>
<td>- Variety</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Bandwidth availability</td>
<td>- Capacity reduction</td>
<td>- High cost devices</td>
</tr>
<tr>
<td></td>
<td>- High demand networks resources</td>
<td>- Reduce numbers of channels</td>
<td>- New infrastructure and system integration (major investment)</td>
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<td></td>
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<td>- Limit deployment to a small number of markets</td>
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<td>- New charging requirements</td>
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<td></td>
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<td>Different strategies to address business are required</td>
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</tbody>
</table>

*Location determined content*
**USPs: Interactive unicast and broadcast Services over common RAN**

**ITU/BDT Regional Seminar on Broadband Wireless Access Africa**
20th, September, 2006, Yaoundé, Cameroon
### Usage statistics

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

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

* Orange France’s figures include live TV and VoD

That’s significant! 35 minutes per month per user, in sessions of 2-3 minutes
A wide range of potential uses for the UHF spectrum have been identified:

- **Digital Terrestrial Television**
  - standard definition
- **Programme making**
- **Licence exempt low power (eg wireless hubs in-home)**
- **Mobile multimedia**
- **High definition**
- **Local TV**
- **Wireless broadband / cellular**

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Spectrum opportunities for mobile multimedia

Band III
217.6 MHz to 230 MHz

UHF
470 MHz to 862 MHz

L band
1452 MHz to 1492 MHz
1785 MHz to 1805 MHz

3G
1900 MHz to 2170 MHz

MSS
2170 MHz to 2690 MHz

Increasing antenna size and reducing capacity

Reducing propagation range and increasing transmitter network costs

Ideal range?
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
DVB-S (+)
DVB-H or T-DMB
DMB-S
S-Band

ATSC
DMB-T
ISDB-T (12-seg)

US
EUROPE
Korea
Japan

ATSC
DVB-T
ISDB-T (1-seg)
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

Interactive link
IMT2000 mobile terrestrial band

Base Station

3G/UMTS

VPN

Broadcast/Multicast Service Centre

On 3G equipment

IMT2000 mobile terrestrial band

+ S-DvB features

SSS---DvBDvBDvB full fledge integration in 3G full fledge integration in 3G full fledge integration in 3G networks
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

Unicast
- Mobile network

Multicast
- MBMS

Broadcast
- Broadcast network
- Interactivity, personalization and charging via mobile network
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

User
• Handset
• Labtop
• PDA
• Ipode

Mobile TV

New environments

Promoting the global success of third generation mobile
• 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!

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

Source Analysis Research, 2005

Mobile TV MBMS Mobile TV MBMS Mobile TV MBMS — Economic broadcast via cellular network
Streaming Media Delivery Solution from Unicast to Broadcast, via DVB-H and MBMS

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

Backend Infrastructure
- Charging/Billing
- Customer Care
- B&R, QoS

Applications, e.g.
- Messaging
- Voting

Content, e.g.
- Music, Radio
- Movies, TV
- Live Cam

Apps & Content

1) Depending Device configuration

Media Delivery Solution

- Streaming Service Controller (SSC)
- Streaming Server
- Download Server
- FLUTE
- DRM
- Electronic Service Guide (ESG)
- Content Store
- Media Delivery Manager (MDM)
- TV Applications & Interaction
- Video-on-demand & Live Encoder

Transport

with QoS
SGSN GGSN
IP Gi

without QoS
Control Go Gq
Policy Control Server

DVB-H

Broadcast – DVB-H

Mod Mux IPE
The Key to this exercise

• 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

2006

1998

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

The Dawn of Mobile TV in UMTSF ICTG

Publish the Results of the Work analysis
Strategic issues, value chain, business models, regulation and spectrum.

2007+

2008+

2009+

Commercial services and Mass market

Way forward agreed and implementation

Promoting the global success of third generation mobile
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!!!