Session 1
Interactive Multimedia & Mobile Video Services

Peter Walop, ITU expert
Presentation Overview

- Defining services
- Why Mobile TV?
- Mobile Video Challenge
1. Defining Services

Source: ITU
1. Defining Services

Source: KBS, KT
1. Defining Services

**MTV**

- Like digital radio & TV networks
- CAS often DRM based
- Mediation platform
- In-band systems can switch between base service & MTV

**LTE-eMBMS**

- eMBMS is LTE system’s evolution for broadcasting (based on LTE-A)
- Flexible switching between *unicast* and *broadcast* mode (per system cell and time period)
1. Defining Services

### Combinations of user environments and receiver types

|----------------------|--------------------|---------------------|----------------------------------|-------------------|--------------|----------------|

| Stationary | Nomadic | Mobile |

- Requirements per use case are different
- Two technology platforms:
  - Broadcast networks
  - Mobile networks

*Source: ITU, EBU*
Presentation Overview

- Defining services
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- Mobile Video Challenge
2. Why Mobile Video? .. Again?

<table>
<thead>
<tr>
<th>System</th>
<th>In commercial operations?</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-DMB/AT-DMB</td>
<td><strong>Yes</strong>, T-DMB only. For example in Korea, Ghana &amp; China</td>
</tr>
<tr>
<td>ATSC-M/H (in-band system)</td>
<td><strong>No</strong>, tested in the USA and Canada (2013)</td>
</tr>
<tr>
<td>ISDB-T 1Seg (in-band system)</td>
<td><strong>Yes</strong>, for example in Japan, Brazil, Costa Rica &amp; Chile</td>
</tr>
<tr>
<td>ISDB-Tmm</td>
<td><strong>Yes</strong>, in Japan only</td>
</tr>
<tr>
<td>DVB-H</td>
<td><strong>No</strong>, all DVB-H services discontinued</td>
</tr>
<tr>
<td>Media-Flow</td>
<td><strong>No</strong>, all Media-Flow services discontinued</td>
</tr>
<tr>
<td>DVB-T2 Lite (in-band system)</td>
<td><strong>No</strong>, only tested, for example in the UK and Italy (2012/13)</td>
</tr>
</tbody>
</table>

Delivery of mobile television & video services started early 2000’s:

- Mainly on broadcast networks as there was no LTE/4G
- DVB-H and Media-Flow discontinued

*Source: ITU*
2. Why Mobile Video?

Because of Hockey.. sticks
2. Why Mobile Video?

- Video = VOD + linear TV services, fixed and mobile
- Most growth from consumers
2. Why Mobile Video?

**Global Consumer IP Video (TB/month)**

- 2014: Fixed 20, Mobile 10
- 2015: Fixed 30, Mobile 20
- 2016: Fixed 40, Mobile 30
- 2017: Fixed 50, Mobile 40
- 2018: Fixed 60, Mobile 50
- 2019: Fixed 70, Mobile 60

- 29% Mobile
- 67% Mobile

*Source: Cisco VNI Index*

**Traffic per Handset Type in Korea (TB/year)**

- 2012: 2G 500,000, 3G handset 100,000, 4G handset 50,000
- 2013: 2G 200,000, 3G handset 100,000, 4G handset 50,000
- 2014: 2G 100,000, 3G handset 50,000, 4G handset 25,000
- 2015: 2G 50,000, 3G handset 25,000, 4G handset 12,500
- 2016: 2G 25,000, 3G handset 12,500, 4G handset 6,250
- 2017: 2G 12,500, 3G handset 6,250, 4G handset 3,125
- 2018: 2G 6,250, 3G handset 3,125, 4G handset 1,562

*Source: Analysis Mason*
2. Why Mobile Video?
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Presentation Overview

• Defining services
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  Mobile Video Challenge
3. Mobile Video Challenge

**Busy Hour vs Average Hour - SE Asia (Gbps)**

- Globally busy hour will be 3.3 x higher than average hour by 2018
- Driven by video delivery
- Video carried over IP networks, fixed and mobile

*Source: Cisco VNI Index*
3. Mobile Video Challenge

 minutes per session per device type

• How many VOD/Live session?

• Is demand restricted by available capacity and/or price?

• Is demand for Live on mobiles distinct or subset of premium content?

Source: OOYALA
3. Mobile Video Challenge

- **Off-loading needed:**
  - Fixed/Wi-Fi from mobile devices
  - Fixed/Wi-Fi from Wi-Fi only devices

- **Live video off-loading to:**
  - LTE eMBMS
  - MTV system
  - Hybrid (Tower Overlay)
    - LTE A+ hand-sets
    - Mediation platform
    - Business model

*Source: TDF, GatesAir*
Thank you!

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