SATELLITE GROWTH OPPORTUNITIES
Charles Disneur, Business Development Director
Eutelsat Asia
A GROWING VIDEO MARKET IN WHICH THE SATELLITE IS EXPANDING

TV households worldwide (in millions)

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2013</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Americas</td>
<td>1,412</td>
<td>1,606</td>
<td>1,825</td>
</tr>
<tr>
<td>Europe</td>
<td>266</td>
<td>289</td>
<td>318</td>
</tr>
<tr>
<td>M.E.A.</td>
<td>309</td>
<td>321</td>
<td>334</td>
</tr>
<tr>
<td>Asia Pac.</td>
<td>118</td>
<td>155</td>
<td>198</td>
</tr>
<tr>
<td>America</td>
<td>719</td>
<td>841</td>
<td>975</td>
</tr>
</tbody>
</table>

Worldwide TV reception audience (%)

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2013</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satellite</td>
<td>1,412</td>
<td>1,606</td>
<td>1,825</td>
</tr>
<tr>
<td>Cable</td>
<td>31%</td>
<td>33%</td>
<td>33%</td>
</tr>
<tr>
<td>Terrestrial</td>
<td>51%</td>
<td>36%</td>
<td>28%</td>
</tr>
<tr>
<td>IPTV</td>
<td>17%</td>
<td>25%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Variation

- '08-'13: +5, +2, -15, +8
- '13-'18: +4, +0, -8, +5

People are still switching on TV for the first time!

Satellite is the fastest growing technology for TV reception

Source: Dataxis 2014, Eutelsat
Satellites are active in every step of the broadcasting chain

- Professional video links
- Consumer broadcasting

- Video contribution for sports, news events
- Editing, play-out
- Cable, ADSL
- Direct-to-Home
- DTT

Satellites enable direct reception (DTH) and are indirectly present for TV reception in all terrestrial networks (cable, DTT, IPTV)
Eutelsat alone hosts more than 40 pay TV platforms

In South East Asia alone, room for growth is obvious
- DTH platforms licences are not all issued yet
- HD TV content is still taking up
- 13.5m Pay TV subscribers in 2013 to around 27.5m by 2023 in South East Asia that has a population of 600m inhabitants today
Direct-to-Home leverages on the economics and benefits of satellite

- Cost per viewer for the broadcaster

- Broadcasting cost by satellite is 1 cent per month per viewer, with no marginal cost to serve additional viewers, for an SD channel with an audience of 1 million viewers

- Coverage and ubiquity
  - Well suited for large continents with low population density and poor terrestrial infrastructure

- Capacity
  - Hundred channels per broadcasting satellite!

- Uniform signal quality
TV VIEWER EXPECTATIONS ARE CHANGING: "ADVANCED TV EXPERIENCE" NOT ONLY IN THE DEVELOPED WORLD

Any Screen

Yesterday

Today

Any Time

Inc. increased Quality

Yesterday

Linear TV

PAL NTSC

HD TV

Today

Catch-up TV
Video on Demand
Interactivity

Eutelsat Proprietary Information
WHILE USAGES INCREASE, OTT VIDEO DISTRIBUTION SHOWS SEVERAL WEAKNESSES

- **Inability to reach the entire population**
  - Lower image quality ...
  - ... Or even no video service at all

- **Growing distribution costs**
  - CDN costs increase with the audience

- **Lower quality of service, especially at peak hour**
  - Broadband networks saturated by OTT demands

**Broadband penetration (2014)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Broadband Penetration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luxemburg</td>
<td>100%</td>
</tr>
<tr>
<td>France</td>
<td>97%</td>
</tr>
<tr>
<td>Belgium</td>
<td>84%</td>
</tr>
<tr>
<td>UK</td>
<td>83%</td>
</tr>
<tr>
<td>Germany</td>
<td>71%</td>
</tr>
<tr>
<td>Italy</td>
<td>59%</td>
</tr>
<tr>
<td>Russia</td>
<td>56%</td>
</tr>
<tr>
<td>Poland</td>
<td>56%</td>
</tr>
<tr>
<td>Turkey</td>
<td>44%</td>
</tr>
</tbody>
</table>

**OTT distribution cost pattern**

- **Internet bottleneck at peak hour**
- Adaptive bit rate transforms your HD content in SD or worse

Source: iDate, Eutelsat analysis
HYBRIDIZATION WIDEN THE REACH OF ADVANCED TV EXPERIENCE
THE ‘ON-DEMAND’ CASE

Enhanced hybrid on-demand services

- **Broadband**
- **Satellite Broadcast**

**Push VoD server**

**DRM key, streamed content (long tail only)**

**Most viewed content stored locally**

**Browsing**

**Existing broadband VoD application**

**Existing solution: OTT**

**Extension: broadcast**

**“SAT On-Demand”**

- Distribute via satellite, store locally contents pre-packaged for tablets/PCs, ready for immediate watching, ...

- ... fully compatible with existing OTT VoD services:
  - same back-end (incl. DRM)
  - Same customer applications
  - Access to long-tail catalogue through internet connection (in lower quality)

**Broadband VoD servers**
- Catalogue
- Content
- web-server

1) IP streams protected with DRM
NATION-WIDE COMMERCIAL LAUNCHES OF ULTRA-HD HAVE STARTED ON SATELLITE: DIRECTV

Ultra-HD offer

- Nov 2014: Nation-wide introduction of UHD VoD service, preloaded via satellite
- Later in 2015, launch first channels
- Necessary equipment
  - Legacy DirecTV set top box
  - Compatible UHD TV set or
  - 4K Genie Mini player connected to any UHD TV set

Real UHD: guaranteed quality of service

100% subscribers reach: existing set-top-boxes are compatible with UHD service
Total IP traffic has been multiplied by 70 since 2003 (+53% CAGR)
- More internet users (+13% CAGR)
- Traffic per user (+35% CAGR)

Video is a big driver: 64% of consumer Internet traffic in 2014, will be 80% in 2019

Traffic will again triple in the next 5 years to reach 2 Zettabytes in 2019

Mobile traffic grows 3 to 4 times faster than fixed traffic

Growth will be driven by new applications: Internet of Things, mobility
INFRASTRUCUTRE IS THE MAIN BOTTLENECK TO MORE GROWTH

- Lack of infrastructure
- Poverty
- Illiteracy

Total world population 7.1bn

Offlines 4.4bn

Connected 2.7bn

OF WHICH 95% IN EMERGING COUNTRIES

OF WHICH 0.9BN IN DEVELOPED COUNTRIES

OF WHICH 1.8BN IN EMERGING COUNTRIES

Mostly fixed connections

Mostly 2G mobile connections
Mobile usage in Sub-Saharan Africa is mostly 2G today.

3G connections are expected to grow continuously until 2017, but 4G should remain insignificant (i.e. 2% of the connections).

By 2017, average connection speed is expected to remain well below 1Mbps.

Source: GSMA Sub-Saharan Africa Mobile Economy 2013
**FIXED TERRESTRIAL BROADBAND SPEEDS HAVE TRIPLED SINCE 2008 BUT SATELLITE STANDS THE COMPARISON**

<table>
<thead>
<tr>
<th>Region</th>
<th>Country</th>
<th>2008, Q4, in mbps</th>
<th>2014, Q2, in mbps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Europe</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>3</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>4</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>3</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td>3</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>3</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>3</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td><strong>Asia</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>1</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>HK</td>
<td>7</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>7</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td><strong>Middle East &amp; Africa</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Israel</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>UAE</td>
<td>1</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td><strong>Latin America</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Chile</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Colombia</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>North America</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>4</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>4</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

**Satellite today: ~10Mbps**

*SOURCE: Akamai*
SATELLITE DOES NOT ONLY PERFORM WELL, IT IS ALSO COST COMPETITIVE

Incremental cost to serve a client, in *thousands dollars*

<table>
<thead>
<tr>
<th>Urban (med.-density)</th>
<th>Rural (med.-low-density)</th>
<th>Rural (very low-density)</th>
</tr>
</thead>
<tbody>
<tr>
<td>xDSL</td>
<td>FTTH</td>
<td>Satellite</td>
</tr>
<tr>
<td>0.5</td>
<td>0.8</td>
<td>0.6</td>
</tr>
<tr>
<td>2.2</td>
<td>1.2</td>
<td>0.8</td>
</tr>
<tr>
<td>0.6</td>
<td>1.2</td>
<td>0.6</td>
</tr>
<tr>
<td>1.2</td>
<td>1.7</td>
<td>1.2</td>
</tr>
<tr>
<td>1.2</td>
<td>0.9</td>
<td>1.2</td>
</tr>
<tr>
<td>8.4</td>
<td>8.1</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Fixed Broadband leads

Satellite and mobile broadband are comparable

Satellite leads

Eutelsat Proprietary Information
BEYOND BROADBAND, A NUMBER OF CONCRETE OPPORTUNITIES WILL FUEL THE NEW DATA GROWTH CYCLE

// In flight entertainment and connectivity

// Maritime

➔ Number of vessels equipped multiplied by 2.5 between now and 2020
➔ Huge potential remains in yachts, merchant marine, fishing boats

// IoT

➔ Booming number of devices in the « Connected Home »
➔ Deployment of dedicated networks to connect billions of objects
➔ Potential for massive gains in key industries, with global coverage needs
HOW CAN WE MAKE GROWTH HAPPEN FASTER?

- **Evangelize**

- **Segment**

- Continue to innovate in the Space segment for long term growth...

- ... but in order to unlock short term potential, focus
  - On customer premise equipment (cost & design)
  - On marketing & distribution
  - On integration with other networks

- As an industry: unite our forces to promote standards & innovations

- ... and especially true in this part of the world: collaborative partnership