The TV Everywhere Ecosystem: OTT Video Redefining the Landscape

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The TVE/OTT Ecosystem
Population Concentration

Source: Derek Watkins.

More People live within the area surrounded by the red circle than out
Regional Market Life Cycle Analysis

Market Value

1. Development
2. Growth
3. Maturity
4. Decline

Regional Markets:
- Western Europe
- Central & Eastern Europe
- Middle East
- Latin America
- Africa
- Asia
- North America
- Middle East
- Asia
- North America

Digitization Progress: Global, 2009-2016

Source: Frost & Sullivan.
Key Takeaways

**Position:** TV Everywhere is a “must-have” service offering for any Pay TV provider today. There is a lot of excitement and end-user device proliferation and ubiquitous connectivity are driving a demand side pull for such services. Thus, despite business model ambiguity, the need to provide these services is mandatory.

**Standards:** Pay TV providers are increasingly struggling to unify and streamline the multi-screen experience and make it cohesive across all screens. This pertains to the client facing user experience to mirror all primary screen experience to secondary screens as well as from an upstream workflow and delivery perspective for the operator.

**Competition:** Any tech savvy teen can publish video online – OVPs are trying to reinvent and position themselves to be more monetization focussed as are others across the value chain – analytics has become a key area of focus.

**Strategy:** Cloud architectures will play a key role to deploy TVE. As delivery to unmanaged devices grows, so is the need to use the cloud to complement the traditional STB based managed device paradigm.
TVE / OTT –
Growth Driven by Major Market Trends

Market Revenue 2012:
> $1.5 billion

CAGR to 2017:
over 20%

“Virtual Corporation”
via Web Video

Double-digit growth in handheld devices

Growing Need for
Automation, Scalability

Double digit growth in online video consumption

Maturing Monetization
And Biz Models

Growing availability of licensing rights

Broadband/3G/4G/LTE
connectivity

Maturity of ABR file formats
and streaming
TVE / OTT Key Market Trends

**Continued market fragmentation creates pricing pressures**

**Peak activity 2013 to 2015**

- More and more vendors entering this lucrative space, and at a faster pace
- Could eventually lead to some consolidation

**Monetization, particularly targeted/personalized ad insertion**

- Pre-roll, mid-roll, targeted ad insertion

**Discovery and rich metadata/interactive experience**

**Device reach – platforms, geographical**

**Market Trends**

- Mostly through player-side features
- Sticky user experience
- Improves customer loyalty and raises ad impression costs

- Event-viewer geographical distance is rising; latency is an issue
- ABR to multiple device types and resolutions

- Continued market fragmentation creates pricing pressures

- Peak activity 2013 to 2015

- Monetization, particularly targeted/personalized ad insertion

- Discovery and rich metadata/interactive experience

- Device reach – platforms, geographical

- Market Trends
Typical VOD Architecture

Platform Vendors: ARRIS, Ericsson, Cisco, Comcast Media Center, ZTE, Seachange, Teleste, others

- Satellite
- Internal/Fiber
  - Grooming
  - Encoding
  - Ingest & Encoding
  - Decoding
  - CAS/DRM
  - CRM/SMS/Billing
  - Store & Serve
  - Transcode
  - EPG
  - Ingest
  - Video Server
  - App Server / EPG Guide
  - Advertising Manager
  - CMTS
  - Edge QAM
  - Devices
  - STBs
    - ARRIS/Motorola
    - Ericsson
    - Cisco Systems
    - Pace
    - Humax
    - others

Encoders/IRDs/Transcoders:
- Envivio
- ATEME
- Harmonic
- Ericsson
- Cisco Systems
- ARRIS/Motorola

DAM/MAM
Major: OpenText, Avid. Others: EMC, HP, Dalet, VizRT, NorthPlains, Mediabeacon

IP Video Network Management
- Ineoquest, Triveni

F R O S T & S U L L I V A N
Cable Drivers and Restraints

Digitization

IP-fication

Consumer Demand

3-/4- play

Growing Channels;
Growing resolutions

TVE

Saturation

Legacy Equipment Footprint

Economy

Infrastructural Constraints

Competition with DTT/Freeview

Source: Frost & Sullivan
IPTV Drivers and Restraints

- Greenfields
- Surging Subcounts
- Competitive Differentiation
- Multi-screen & Hybrid
- Triple/quad play
- Upgrades

Drivers

- Cost of Infrastructure
- Saturation
- Legislative restrictions
- Licensing costs
- Competition with cable, OTT and DTH

Restraints

Denotes Current Impact
Denotes Long term Impact

Source: Frost & Sullivan
OTT Live Via Cloud

**Source**

- "Mezzanine" Encoder
  - Compresses incoming feed and hands off to transcoding layer in the cloud. Typically a live, appliance-based encoder; or may run on PC

**Transcoder:**

- Compresses and formats stream in ideal format for every target device/bitrate

**OVP:**

- Single solution for transcoding, packaging, ad insertion, analytics, etc

**CDNs:**

- Optimized networks for smooth delivery of video to all target audiences

**Transode + Package OR OVP**

**CDN or Streaming Server**

**Devices:**

- Streaming Servers: Servers that support connections for streaming video to various target devices
- Devices: PCs, Smartphones, Tablets, Smart TVs, Consoles, etc
## Consumer Video Devices – Unit Forecast by Product Segment

<table>
<thead>
<tr>
<th>Year</th>
<th>Video Game Consoles</th>
<th>Set-Top Boxes</th>
<th>Blu-ray Players</th>
<th>Smart TVs</th>
<th>Smart Phones</th>
<th>Tablets</th>
<th>IP Streaming Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>40.7</td>
<td>158.0</td>
<td>47.3</td>
<td>62.2</td>
<td>540.9</td>
<td>67.0</td>
<td>5.2</td>
</tr>
<tr>
<td>2012</td>
<td>31.3</td>
<td>198.0</td>
<td>59.1</td>
<td>86.1</td>
<td>734.7</td>
<td>124.4</td>
<td>10.7</td>
</tr>
<tr>
<td>2013</td>
<td>36.8</td>
<td>222.9</td>
<td>70.9</td>
<td>124.2</td>
<td>921.3</td>
<td>167.2</td>
<td>19.4</td>
</tr>
<tr>
<td>2014</td>
<td>43.3</td>
<td>233.6</td>
<td>83.7</td>
<td>164.2</td>
<td>1,130.4</td>
<td>216.7</td>
<td>25.2</td>
</tr>
<tr>
<td>2015</td>
<td>50.4</td>
<td>235.5</td>
<td>97.1</td>
<td>191.1</td>
<td>1,376.8</td>
<td>266.8</td>
<td>29.1</td>
</tr>
<tr>
<td>2016</td>
<td>58.6</td>
<td>245.2</td>
<td>111.7</td>
<td>222.2</td>
<td>1,642.5</td>
<td>316.2</td>
<td>32.0</td>
</tr>
<tr>
<td>2017</td>
<td>68.1</td>
<td>239.8</td>
<td>126.2</td>
<td>244.4</td>
<td>1,974.3</td>
<td>359.2</td>
<td>34.9</td>
</tr>
<tr>
<td>CAGR (2012-2017)</td>
<td>16.8%</td>
<td>3.9%</td>
<td>16.4%</td>
<td>23.2%</td>
<td>21.9%</td>
<td>23.6%</td>
<td>26.7%</td>
</tr>
</tbody>
</table>

Note: All figures are rounded. The base year is 2012. Source: Frost & Sullivan
Trends, Opportunities & Unmet Needs

**Relevant Trends**
1. Unmanaged device proliferation
2. Cable IP-fication
3. Increasing demand for richer apps / engaging content experiences
4. Headend components and CPE increasingly falling victim of bundled price cuts
5. Cloud-based middleware slowly gaining mindshare
6. Increased consolidation among large infrastructure providers creating larger barriers to entry
7. STBs giving way to smarter digital media hubs
8. Pay TV business models changing as interactivity, personalization and content diversity increases
9. Subsidized fiber rollouts through rural telcos creates an aggregate large opportunity

**Unmet Needs**
1. Closed middleware platforms make continued development difficult
2. “One Size Fits Only a Few” middleware products limit market traction and as a consequence continue to let a home grown market persist
3. Providing a seamless TVE experience is still a pipe dream for operators despite the excitement
4. Sustained customer support, especially toward ongoing platform development is lacking
5. The market wants unobtrusive middleware that would not be disruptive to the rest of network operations

- Cable is moving toward IP.
- TVE is a potential game changer.
Seize the Moment!

The market wants a monetization focused feature/app rich agile platform which has deployment flexibility through CPE or the cloud.

F R O S T & S U L L I V A N
Churn Management Tools In Perspective

TV Everywhere, Personalized Discovery and Digital Life Solutions will be the most transformative over the next 36 months. The rest are expected to remain at the same level of importance.

Note: Size of bubbles indicates level of current investment and the dotted outline bubbles are forecasted investment levels for those that will transform the most.

Source: Frost & Sullivan
### Factors Influencing the M&E Ecosystem: Key Takeaways

#### Transformative technical trends and changing priorities, in descending order of impact

<table>
<thead>
<tr>
<th>Critical</th>
<th>Leverage both technology and creative programming to adapt existing IPTV, cable and DTH brands to remain relevant and attractive for the next decade.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urgent</td>
<td>Adapt business model, operations infrastructure and CPE to position for ongoing growth despite ongoing market disruptions.</td>
</tr>
<tr>
<td>Key</td>
<td>Minimize churn and maximize subs/homes passed ratio through attractive entry-level packages, quad-play bundles and advanced offerings (HD, DVR, PPV, multi-screen, TVE, etc) as well sticky digital home services.</td>
</tr>
<tr>
<td>Essential</td>
<td>Upgrade infrastructure to meet growing throughput demands and competitive need to differentiate on quality.</td>
</tr>
<tr>
<td>Basic</td>
<td>Continue to grow revenues, if not subscriber counts, through compelling price-product combination, despite competition from other pay TV service providers and alternate content sources.</td>
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</tbody>
</table>