Global IFE Market Overview

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Is the market growing, for how long will it continue to grow and at what rate?

What are the D&R of the market? What challenges are suppliers facing?

How will the trends impact the way of doing business? What are the evolving business models?
Market Overview
The Global IFE market is expected to grow from $2Bn in 2012 to $5.3Bn in 2020 with a CAGR 12.8%

<table>
<thead>
<tr>
<th>Segment</th>
<th>2012</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>68%</td>
<td>48%</td>
</tr>
<tr>
<td>Content</td>
<td>12%</td>
<td>8%</td>
</tr>
<tr>
<td>Connectivity</td>
<td>20%</td>
<td>44%</td>
</tr>
</tbody>
</table>

- All three segments are expected to grow in value, with connectivity segment having the highest growth potential reaching $2.4bn revenues in 2020. New IFE solutions are emerging leveraging on smartphone and tablet proliferation and on on-line streaming solutions.

- The hardware segment will be the largest IFE segment in value during the forecast period with CAGR of 7.5%. However, its share in the total IFE market is expected to decline from 68% in 2012 to 48% in 2020 as connectivity segment gains market share and as a growing number of PEDs are being carried by passengers in the medium and long term.

- Strong consolidation in the IFE market with 2-3 key players in each market segment and one stop shop creation

Note: All figures are rounded. The base year is 2011. Source: Frost & Sullivan analysis.
### Drivers and Restraints

**Total In-Flight Entertainment Market: Key Market Drivers and Restraints, Global, 2012–2020**

<table>
<thead>
<tr>
<th>Market Drivers</th>
<th>1-2 years</th>
<th>3-4 years</th>
<th>5-9 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growing demand for air transport and fleet expansion plans will drive IFE implementation</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Growing competition between airlines – IFE is treated as a value added feature</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>PED proliferation - New IFE solutions emerging</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<table>
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<th>Market Restraints</th>
<th>1-2 years</th>
<th>3-4 years</th>
<th>5-9 years</th>
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</thead>
<tbody>
<tr>
<td>Fast technological change makes airlines reluctant to invest in the short term- wait &amp; see approach</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Unstable economic environment Airlines’ investment budget delays IFE installation plans</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Long and expensive development, certification and installation processes</td>
<td>●</td>
<td>●</td>
<td>●</td>
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</table>

**Impact:**
- **High**
- **Medium**
- **Low**

*Source: Frost & Sullivan analysis.*
Main Market Challenges for Suppliers

- In flight connectivity is currently facing four challenges: price (high), speed (low), capacity (limited satellite capabilities) and coverage (limited). Suppliers have been building their competitive advantage on one of these aspects. Only in the long term a supplier will be able to offer a complete package of fast and affordable internet with global coverage.

- Ka-band technology is expected to be the main technology for IFE connectivity due to high speed, wider coverage and available capacity. However, heavy investments and a long payback period currently required; a Ku-Ka band hybrid is emerging.

- HW suppliers are competing by offering lighter and low energy consumption products to remain attractive in the market. The ones that form long term partnerships with aircraft manufacturers are leading the market.

- CSP capital expenditure will rise due to the need for greater digital file storage; security requirements become a hurdle.
Airline industry is becoming paperless; Aircraft, from the cockpit to the cabin, is equipped with digital PEDs, from EFBs in the cockpit to tablets for the crew; Electronic devices are used for business operational purposes transforming the way the airline operates on air; Connectivity will enable real time sharing of information on board.

- Connectivity solutions are increasingly explored by airlines in order to offer on more aircraft types and more passenger segments. Ka-band is expected to be the main offer in the market due to lower costs and larger coverage by 2014; Hybrid Ku-Ka band is expected to fill the gap.

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- Growing popularity of smartphones and tablets is strongly impacting the IFE market and alter the passenger experience on board. (> 50% of passengers carry PEDs); Consumer behaviour is changing the business; In demand applications that work across multiple devices and are HW agnostic.

- Internet content will be changing passenger’s attitude on board from web browsing as a preferred activity to content streaming, Suppliers have started catering for this demand (e.g. Thales with Ava product, Panasonic with exw system, Gogo vision).
### Evolving business Models - Connectivity

<table>
<thead>
<tr>
<th>Impact of Key Trends</th>
<th>Features &amp; Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectivity Providers merging</td>
<td>• Connectivity providers merging and partnering in order to offer wider coverage and wider capacity, higher speed and lower prices; e.g. Inmarsat and Viasat</td>
</tr>
<tr>
<td>Connectivity focusing on Ka band in the medium term; hybrid Ku-Ka band in the short term</td>
<td>• Connectivity providers aiming at providing global Ka band coverage. Prices expected to be lower due to lower costs; On board connectivity expected to be offered for free due to strong ancillary revenues generation; e.g. Google sponsoring</td>
</tr>
<tr>
<td>Connectivity providers partnering with Content providers</td>
<td>• E.g. Row 44 and AIA partnership under the Global Eagle Entertainment to create the largest entertainment and connectivity platform</td>
</tr>
<tr>
<td>Connectivity providers partnering with HW providers</td>
<td>• Offer bundled products and become the one-stop shop that will offer exclusive and customised solutions</td>
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Evolving business Models – Content & Hardware

Impact of Key Trends

- **HW providers entering the content market**
  - Hardware suppliers will be taking more control of content delivery in order to offer exclusive content, while developing solutions for new revenue streams for airlines and focusing on developing data storage capabilities or partnering with data centers to increase capacity.

- **Avionics Suppliers partnering with connectivity providers**
  - Avionics suppliers offering products to enable connectivity on board; partnering with connectivity providers to offer bundled product

- **Content Providers entering portable market; offering bundled products**
  - CSPs are looking into bundling offers with portable solutions in order to overcome decreasing margins and security concerns regarding PEDs in the short term. Films are the main content delivered, focusing on early-window, and games are increasingly becoming popular.

- **Consolidation the Content Market; Portfolio enhancement**
  - Small content suppliers ($1M–$2M revenues) being targeted for acquisition by major CSPs (e.g. AIA) in order to enhance portfolio with local market capabilities; service portfolio is expanding with solutions for ancillary revenue generation; 2-3 players will be driving the market

Features & Implications
Supply Chain: Suppliers positioning in the market

The IFE content market has been consolidating rapidly, as HW suppliers move into content delivery and position themselves as integrators.

- Consolidation becomes evident in the supply chain, as Hardware suppliers (HWS) begin offering content to airline operators.
  - Example, Panasonic and Row 44 are now offering international content to hardware customers, as a part of the system package or by getting into contracts with live-television suppliers.
- “Pure Play” CSPs fend off competition through customisation in customer service and non-generic tasks.
- CSPs are expected to move to niche sections of content segment (example, licensing or safety), or enter larger alliances where economies of scale exist (buying power, especially in movies).
Supply Chain Restructure –
Aim to create a one-stop shop

The supply chain structure has been changing in the last 4 years, with hardware and content suppliers moving into content management and service suppliers assuming downstream work.

- There are over 300 content stakeholders in the IFE industry, with majority of them involved in content distribution and post-production services (i.e. Laboratories) for non-theatrical markets, but not necessarily focusing only on IFE.
- Service Providers are primarily IFE stakeholders with long experience in content management on behalf of end-users. Content delivery is managed by HW suppliers who are content integrators; Content delivery methods from studios and CSPs include Smartjog, FTP, Cloud, Yousendit and traditional FedEx courier service.
Conclusions

- **Consumer behaviour** is driving the market and the industry is dynamically changing to meet passenger requirements. Flexibility is key.

- In-flight connectivity is expected to create a key competitive advantage for airlines and **IFI will be treated as a value-added feature.** New products will be launched (platforms, apps) and new forms of advertising will allow airlines to generate ancillary revenue.

- **Commercialisation of satellites** will allow greater capacity, higher coverage, more players and lower prices. Ka-band is expected to be the main technology for IFE connectivity in the medium term.

- **Market consolidation** will be at its peak. Vertical integration, group forming and repositioning in the market is integral for suppliers wanting to sustain a competitive advantage.

- **Focus is on successful partnerships** that can create a one stop shop leveraging on connectivity.

- **Aircraft manufacturers** are aiming to become the one-stop shop for end users by building capabilities in house and through vertical integration.
Thank you for your attention

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