Eutelsat in a nutshell

KEY DATA

► Revenues of €1.48bn

► Fleet of 39 satellites; global coverage

► Operating >1,370 transponders

► Broadcasting >6,600 channels

► Backlog of €5.2bn, representing 3.5 years of revenues

REVENUE BREAKDOWN BY APPLICATION

By geography

- Western Europe: 34%
- Central Europe: 8%
- MENA: 10%
- RCA: 9%
- SSA: 5%
- Americas: 10%
- APAC: 8%
- Unallocated and others: 5%

By application

- Video: 64%
- Fixed Data: 12%
- Government Services: 12%
- Fixed Broadband: 7%
- Mobile Connectivity: 5%
- Other: 5%
The satellite value chain

Satellite manufacturers
Satellite launchers
Satellite operators
TV broadcasters, Telecoms, Governments
Consumers and businesses
End users
Business characteristics

► High barriers to entry
  • Finite resource of orbital positions and frequencies, heavily regulated at international level with key commercial orbital positions have already been developed
  • High upfront CAPEX before operations
  • High technology & technical expertise through satellite lifecycle

► Robust business model
  • Significant backlog with long term contracts generating revenue visibility
  • Economies of scale
  • High operating margins
  • Predictable operating cash flow
## Trends in our core businesses

<table>
<thead>
<tr>
<th>VIDEO: MODEST DEMAND GROWTH</th>
<th>FIXED DATA: STRUCTURALLY CHALLENGED</th>
<th>GOVERNMENT SERVICES: POCKETS OF OPPORTUNITY</th>
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<tbody>
<tr>
<td>► Sustained growth in emerging markets</td>
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<tr>
<td>• Robust channel growth</td>
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<td>• Increasing HD penetration</td>
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<td>• Middle East, Africa leading growth</td>
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<td>• Prices well-oriented</td>
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<td>► Broad stability in Europe</td>
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<tr>
<td>• Broadly stable channel count</td>
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<td>• HD and Ultra HD ramp-up</td>
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<tr>
<td>• Improving encoding and compression</td>
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<td>► Global demand driven by increasing connectivity needs</td>
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<td>► Large HTS systems adding to existing overcapacity</td>
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<td>► Ongoing severe pricing pressure</td>
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<td>► More stickiness in certain segments</td>
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<tr>
<td>► US DoD demand stabilising, albeit at lower prices</td>
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<td>► Slower migration to HTS than Data Services</td>
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<tr>
<td>► Opportunities in Europe, Asia and MENA and in non-military</td>
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## Longer-term potential in Video and Connectivity

<table>
<thead>
<tr>
<th>VIDEO</th>
<th>FIXED AND MOBILE CONNECTIVITY</th>
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<tr>
<td>► Satellite and IPTV set to dominate global video distribution in the longer term</td>
<td>► Nascent markets with huge potential</td>
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<tr>
<td>► Opportunity to enhance satellite value proposition by offering IP-like viewer experience</td>
<td>► Massive growth in bandwidth usage per consumer</td>
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<tr>
<td>► Outsourcing of services by broadcasters will create additional sources of demand</td>
<td>► Medium-term potential in Aero</td>
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<td>► Long-term potential in land mobility</td>
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<td></td>
<td>► VHTS and VVHTS satellites are pre-requisites in terms of volume and pricing for mass-market adoption</td>
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Video: Higher signal quality driving worldwide growth of satellite marketshare

- Total number of TV homes to increase by 95 million to 1.7 bn by 2021
- Satellite reception to grow by 50 million homes to 430 million by 2021
- Satellite market share to rise from 24% to 26%

Source: Euroconsult 2014, APAC

Source: Digital TV Research, June 2016
Video: Satellite’s competitive advantage over OTT / IP

**COST-EFFICIENCY**

- Satellite a fraction of TV platforms operating costs
- CDN costs rise in line with audience growth

Satellite more cost efficient above 50k viewers in Western Europe

**UNIVERSAL REACH**

- High cost of fibre roll-out
- Terrestrial networks cannot reach entire population
  - Lower image quality
  - Or even no service

Satellite provides full coverage of a market

**SERVICE QUALITY**

- Higher quality of image leading to increased bandwidth usage
- Congestion of terrestrial networks
  - Video will represent ~80% of consumer internet traffic by 2019

Satellite and hybrid solutions give unimpaired viewing experience

**BANDWIDTH REQUIREMENT (Mbps)**

- 1 UHD channel in HEVC: 20
- 1 HD channel in MPEG 4: 8
- 1 SD channel in MPEG 2: 4

Source: Eutelsat analysis, European Commission - Broadband Coverage in Europe 2015, CISCO VNI 2015
**Fixed Broadband: Preparing for mass market adoption**

### BRIDGE DIGITAL DIVIDE

#### IN-MARKET PROPOSITION
- Deliver fibre-like capacity (30 Mbps)
- Reach fibre-like pricing (~€30 / month)
- Lower barriers to adoption
- Assess addressable market
- Develop appropriate distribution

#### INDUSTRIAL TRANSLATION
- VHTS satellites
- Terminals < $200
- Refine assessment of fibre deployment
- Test and validate business models

#### TIMING
- 2020-21
- C.2019
- 2018 onwards
- 2016-18

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Use the time to VHTS to prepare for mass market: optimise existing or committed assets (KA-SAT, Russian and African Broadband) and validate go-to-market models.
HTS value proposition: Consumer broadband in Europe

Example of service offer in Europe

KA-SAT

82 Ka-band spotbeams
Frequencies reused 20 times

+90 Gbps throughput

Standard terminal
→ IDU box
→ Antenna 77cm
→ 3W ODU
→ 75W power
**Mobile Connectivity: Market foothold with existing assets**

<table>
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<tr>
<th>IFEC</th>
<th>MARITIME</th>
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<tr>
<td><strong>IN-MARKET PROPOSITION</strong></td>
<td><strong>INDUSTRIAL TRANSLATION</strong></td>
</tr>
<tr>
<td>→ Deliver streaming-like experience for IFEC</td>
<td>→ VHTS satellites 1 Terabyte satellite</td>
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</table>
| → Deliver on-the-move fiber-like Connectivity for ground transportation | → VVHTS  
→ Flat terminals | → 2025-2035+ | → Number of vessels equipped expected to multiply by 2.5 between now and 2020 |
| → Ubiquitous coverage for connectivity | → Widebeam satellites covering the oceans and HTS complementary coverage on coastal areas (high traffic) | → ...2017+ | → Huge potential in cruising, ferries, yachts, merchant marine, fishing boats |
| | | | → Crew welfare |

**eutelsat**
INNOVATION - Part of Eutelsat’s DNA

► Innovation is a key element for success in a very competitive telecommunication market

► Eutelsat has always been at the forefront of satellite innovation
  • 1984: First transmission in DVB-S standard
  • 1996: Development of DiSEqC standard
  • 2000: First satellite with electrical propulsion (E16C)
  • 2002: First satellite with on-board multiplexing
  • 2003: First HD demo channel
  • 2004: First satellite with Lithium-Ion batteries
  • 2010: Highest capacity satellite ever launched (KA-SAT)
  • 2013: First UHD demo channel

► Innovation - all about finding the right balance between creativity and rigor

► Open innovation
  • Continuous effort in collaboration with customers and other external partners: research institutes, work shops, etc.
  • Evolution of the offer in our core market but also objective to address new or emerging markets (e.g. Internet of Things)
  • Invest into highly innovative projects and companies

► Looking beyond the satellite itself
  • Satellite is part of a system including ground segment
  • Innovation can be at satellite level, but it can also be on the ground, in products and services or in the interaction between the satellite and the ground equipment
### Eutelsat is focused on 4 innovation priorities

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<tr>
<th><strong>In Space</strong></th>
<th><strong>On Ground</strong></th>
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<tr>
<td>Improve the value-for-money of our capacity</td>
<td>New encoding schemes for higher compression</td>
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<tr>
<td>- Electric propulsion</td>
<td>- Enhanced access protocols for Interactive TV satellite services</td>
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<td>- New multi-spot HTS architectures developed for fast growing markets</td>
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<tr>
<td>Ensure protection of satellite communications</td>
<td>Signal prevention / detection techniques</td>
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<td>- Increased resilience to jamming</td>
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<tr>
<td>Increase the flexibility of our satellite resources</td>
<td>Multi-band reception systems</td>
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<tr>
<td>- Reconfigurable satellite payloads</td>
<td>- C/Ku, Ku/Ka</td>
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<tr>
<td>- On board power allocation to optimize commercial capacity</td>
<td>- Hybrid set-top boxes</td>
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<tr>
<td>Enhance end-user experience</td>
<td>Smart LNB for DTH Connected TV</td>
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<tr>
<td>- Home Automation and Internet of Things</td>
<td>- Mobile broadband</td>
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<td>- Multi-screen home IP distribution</td>
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<td>- Low cost terminal for consumer market</td>
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Eutelsat Quantum: Cutting-edge technology

► Software-defined class of satellites

► First satellite to be launched in 2019
  • Manufactured by Airbus Defence and Space

► Incomparable flexibility in terms of:
  • Coverage
  • Bandwidth
  • Power and frequency configurability

► Premium capacity through footprint shaping and steering, power and frequency band pairing that customers will be able to actively define

► Targeting for users operating in Government and Mobility markets

Example of a coverage hopping between 2 markets

Most of the capacity is devoted to Cairo, during day-time in Africa

Most of the capacity is devoted to NYC, during day-time in Americas
How can we contribute to accelerating the digital revolution?

// Continue to evangelise the economic and social benefits of satellite technology

// As an industry:
  ➤ Unite our forces to promote standards & innovations
  ➤ Continue to innovate 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

// On the regulatory front:
  ➤ Lobby to simplify regulatory framework for satellite broadband (blanket terminal authorisations, Ka-band authorisations, out-of-country gateways, Open-Sky policy ...) and for DTH
  ➤ Create a level-playing-field for all technologies, including satellite in National Broadband Plans and ensuring access to subsidies for satellite broadband projects
  ➤ Incentivise States to use satellite broadband for emergency and law enforcement services, connecting schools, local administrations, etc.

// ... and especially true in this part of the world: collaborative partnerships