Global Satellite Markets 2010 – 2015

Prepared by

AUDENS Telecommunications Consulting GmbH

Nov 2009

Content

List of Figures:

List of Tables:

Executive Summary:

This report represents an update of our report for the timeframe 2006 – 2010 and provides

- an analysis of technological and infrastructural developments in the satellite communications sector and
- a description of the global satellite market subdivided into individual services and regions as well as market trends.

The satellite communications market has become a diversified market. Despite several global economic difficulties in the last decade, the Satellites services market grew continuously in ancestral market segments like broadcast, trunking or VSAT services and could enter new markets like broadband Internet access, mobile voice, data and TV as well as satellite radio. The individual market segments of these new markets demand tailored solutions for both, technical and commercial offers. Market opportunities, growth potentials and profitability of markets are very divergent and statements to the global market behaviour are not sufficient to decide on business objectives.

At first, this study describes the current market development. The growth over the last decade was based on growth in the services and equipment manufacturing sectors. Oversupply in the space segment and increased competition in some regions led to a decrease in transponder bandwidth prices, making satellite communications solutions in general less expensive. But especially in the Middle East and Africa, demand exceeded supply and transponder bandwidth became expensive, if available at all. New customers especially for broadband access services and mobile satellite services animated the market. But the largest services segment is and will remain the broadcast market which gained from digitisation, HD TV and growing spread of triple play offers.

The satellite operator market is dominated by three global players which combine more than 65% of the satellite operator's market share and operate 40% of the commercial communications satellites in orbit. The market however is far away from a monopolistic situation due to numerous national and commercial satellite providers with regional and global interests aiming at certain market segments. New important segments are satellite radio, mobile satellite services via geostationary satellites, direct broadband access to the Internet, and governmental/military services. Summary information is given for all major satellite operators and equipment manufacturers in the form of fact

sheets. The growth of the satellite services market is increasing remarkably. The compound annual growth rate in 2005 was ~ 6% and climbed to ~15% in 2008., mainly caused by broadcast services having ~ 65% share in the services segment.

Latest technologies for satellites are on board processing and active antennas with beam forming capabilities to enable the application of adaptive traffic and propagation dependant modulation and coding technologies, high power beams for the use of small terminals on ground and frequency reuse for better spectrum utilisation. In addition, development work on the optimisation of the transmission of IP traffic is going on. In systems intended for the mass market like mobile telephony or Internet access, CDMA based access technologies like in terrestrial 2G/3G networks are adapted for satellite application. CDMA 1x over satellite and DVB-SH are used for new broadband services and TV distribution to mobile terminals. Competing transmission algorithms, partly standardized, partly proprietary, like DVB-S/S2-RCS, DOCSIS or IPoS support VSAT-networks and broadband Internet access via satellite, the use of TCP/IP acceleration combined with IPsec enables the installation of secure networks over satellite.

Except of dedicated Ka-band satellites with high capacity like IPStar and Spaceway (which combine ~1040 transponder equivalents of 36 MHz), since 2003 Ka-band transponder capacity in orbit grew to only ~400 transponder equivalents by 11 new satellites carrying Ka-band payloads. In the same timeframe, nearly 2000 C-band and more than 3200 Ku-band transponder equivalents have been launched. Ka-band seems to attract mainly specialized satellite system operators aiming for the broadband market. New large systems will be introduced in the US market by ViaSat (ViaSat-1) and Hughes (Jupiter-1) and in the European market by Euteslat (KA-SAT). About 12 further satellites with launches from 2010-2012 will carry Ka-band payloads, several of them are dedicated to governmental and military customers.

Important solutions and applications in the satellite services market will be direct broadband internet access, enabling new service offers by integrating voice, data and video e.g. for triple play entertainment. Also virtual private networks can be based on broadband satellite services, which may influence the future growth of dedicated VSAT networks for commercial use. Analogue TV has been nearly replaced by digital Standard Definition and High Definition TV, which had

remarkable growth by new channel demand. The direct to vehicle and home radio markets had impressive growth rates over the last years, but too optimistic business objectives were difficult to achieve. Governmental and military satellite communications remain important market opportunities by the by the need for special services for safety and security applications.

Satellite communications and terrestrial communications have areas of interconnection and of competition. The interrelations of both markets and technologies are described by showing terrestrial fibre networks in different regions, the influence of cable networks for audio and TV distribution and the opportunities for satellites. Competition with terrestrial last mile technologies such as DSL, Wi-Fi / WiMax is analysed, showing the further existence of lucrative market niches for satellite communications in bridging the last mile.

Predictions of the satellite market's tendencies expect for all sectors viable growth rates. The crisis of the financial market had not major negative effects on the global satellite markets, which performed better than conservative forecasts predicted. But financing of new systems or refinancing may become more difficult. Some business segments like voice and data trunking show a flat performance, the TV broadcast sector will continue to grow by new additional programmes and by HDTV. The most dynamic market segment is the use of IP in satellite communications and the general trend of "all over IP". This trend will dominate the further development in the VSAT market segment (e.g. for IP telephony, virtual / private networks, Internet access) and in the DTH segment (direct Internet access from homes, video streaming, convergence of TV and Internet applications etc.). Growth is also expected at higher rates for the mobile satellite services market for maritime and land mobile applications. Some mobile demand for governmental and military customers will be satisfied by solutions which fall into the category of fixed satellite services, especially by using Ka-band and steerable antennae on vehivles.

This report provides an overview on the diversity of the satellite telecommunications market and its future development. It helps to understand interrelations and to analyse the own market situation and its opportunities. It gives guidance to market entrants but does not replace detailed analysis of a certain market segment in a certain region in the perspective of new business development.