

Array of services

The array of services provided through satellite technology covers television, broadband, GSM backhaul and IPTV. We look at what consumers can gain from a satellite link.

Speak to any passer-by in the street and it is almost certain that they will have some combination of cable television, satellite television and broadband connectivity installed at home. Today, the range and type of services available in the consumer market that are delivered via satellite is growing, and the companies that provide content and subscriber services have embarked on an evolutionary path which reflects the technological and content-orientated facets of convergence.

Direct-to-Home TV

Direct-to-Home television (DTH TV) delivered via satellite is the most important and most popular mode of reception for DTH digital television, holding a 60 percent share of the overall digital market with growth in Europe driven by Germany, Italy, the UK and Ireland. Video content is simply received by a small satellite dish anchored to individual homes, and, if subscription-based, is unscrambled by Conditional Access software embedded in, and activated by, the subscriber's set-top box. The DTH TV geographical market extends everywhere, certainly way beyond the reach of cable infrastructure, and is thus very popular in remote and rural areas. Additional value-added services that are bundled into subscriber packages – such as VoIP and Internet access over broadband-enabled phone lines can help increase the market appeal of DTH TV subscription.

A DTH TV (and radio) network operation consists of a transmission centre, owned or leased satellite transponders on one or more geosynchronous satellites, signal encoding equipment and multiplexers. The DTH service provider leases (or buys outright) transponder capacity from a satellite operator with a spacecraft platform located in an orbital slot over, and with a footprint covering, the part of the Earth's surface to be served. The encoding and multiplexing equipment converts the video data signals into a digital format which are then transmitted to the GEO satellite transponders, re-transmitted back to Earth, and received by the subscriber's antenna and the set top box. This equipment then decodes the received signals and allows the end-user to view the various channels comprising the particular bouquet to which he has subscribed. Analogue DTH television is a technology in decline, with digital or, increasingly, high definition (HD) formats taking the market lead.

Direct-to-Home Broadband

Certainly across the developed regions of the world, broadband within almost every private home is both an avowed policy objective of national governments and a practically realisable goal thanks to a highly competitive marketplace for broadband connectivity offerings. With so many service vendors making 2Mb, 8Mb, and 16Mb connections widely available (subject to Contention Rates, of course!), broadband has become the most popular platform for Internet access, and it has completely eclipsed dial-up services. Web browsing, email, music and video downloads, social networking sites, Internet "chat rooms", Internet shopping, and other types of consumer-relevant applications have aggregated into an exponential growth in use of the Internet within the home. The whole home entertainment experience is already evolving through IP-based services that are delivered to our homes via broadband and allowing multiple service delivery, resulting in a wide range of broadband-based applications creating a 'connected' experience. Through home broadband connections it is now possible to access:

- Internet;
- Television;
- Video on Demand;
- Music;
- VoIP;
- Phone;
- Online gaming; and
- Wireless access.

New deals are being struck, commercial alliances forged that will bring further enhancement the broadband home entertainment experience at home. For example, a deal between music giant EMI and YouTube has recently been announced that will see the user at home making full use of their broadband connection by mixing their videos with those created for the record label's artists.

For most of the developing regions of the world, what has just been described above may be achievable at some point in the distant future – the ability to pay permitting. What is certain, however, is that anything even approximating to this degree of ease of access to the benefits that broadband brings, will find its foundation through the medium of satellite. The well established precedent of the continent-wide deployment of one particular terrestrial wireless technology, the success of which was at least in part built upon another, pre-existing, successful technology, is a case in point: the satellite-GSM hybrid.

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Satellite and Mobile Backhaul

In Africa in particular, though also including across the Middle East and elsewhere, cellular/mobile backhaul over satellite has proven to be a cost-effective means of expanding the reach of mobile network operators. It is well established fact that satellite fulfils the requirements of the 'last mile' solution, but today, and for at least the last decade, mobile operators have turned to satellite technology to help them reach further into remote regions underserved by communications infrastructure. The population of urban areas across the globe, and throughout most of the rural environment in the developed economies, now take for granted mobile phone networks. However, in less densely populated and remote areas, particularly in the developing world, the infrastructure required to support access to mobile technology is simply not economically viable. The roll-out of terrestrial cellular/mobile base station networks where the absolute numbers of potential subscribers is too low, or where average revenue per user (ARPU) is projected to fall below service provider revenue requirements, and where, therefore, there is an inadequate return on investment, is not a cost-effective business strategy.

Satellite cellular/mobile backhaul can also be used in disaster recovery or other emergency situations where the normally existing terrestrial wireline or wireless infrastructure has been damaged. Other environments include on board cruise ships, other marine transport, oil rigs, at sporting and other types of event that require a temporary cellular/mobile communications service.

At present, GSM represents the vast majority of cellular/mobile traffic, comprising some 80 percent of the market, with CDMA in second place with 14 percent and TDMA at 6 per cent. Clearly, satellite provides mobile subscribers, mobile network operators, and governments with benefits. The user is able to roam further, service vendor's can expand into areas that were previously unserviceable, and governments also helped in meeting targets under their Universal Service Obligations (USO).

Clearly, the consumer communications and entertainments markets are very dependent upon satellite technology. Its ability to reach households all over the world means that no one who can afford it need be without television or a broadband connection. The entertainment portfolios offered by satellite connections will continue to grow and will personalise our experience of entertainment further.