OFFICE OF COMMUNICATIONS

# Pay TV market overview

## Annex 8 to pay TV market investigation consultation

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# Contents

## Section 1

# Introduction

1.1 The aim of this annex is to provide an overview of the digital TV services available to UK consumers, with the main focus on pay TV services.

1.2 Section 2 describes the UK pay TV landscape, including the current environment and its historical development. It also sets out the supply chain and revenue flows in the chain.

1.3 Section 3 sets out detailed information about the main retail services provided over the UK's TV platforms. This part examines each platform / retail provider in a similar way and includes information on:

- platform coverage and geographical limitations;
- subscription numbers (if publicly available) by platform and TV package;
- the carriage of TV channels owned by the platform operators and rival platforms;
- the availability of video on demand (VoD), digital video recorder (DVR), high definition (HD) and interactive services;
- the availability of other communications services such as broadband, fixed line and mobile telephony services.

1.4 Section 4 provides an overview of relevant technologies and likely future developments.

## Section 2

# History of multi-channel television in the UK

## Introduction

2.1 Television in the UK is distributed using four main distribution technologies, through which a number of companies provide free-to-air (FTA) and pay TV services to consumers:

- **Terrestrial television** is distributed in both analogue and digital formats. Analogue terrestrial television carries the traditional five public service broadcaster (PSB) channels, while digital terrestrial television (DTT) carries both free-to-air channels (via Freeview), and a small number of pay TV programming (via Top Up TV and Setanta).

- **Digital satellite television** (sometimes referred to as DSat) is an open platform, over which Sky operates its main pay TV services; all pay TV channels must use NDS encryption to be received on Sky set-top boxes. Consumers who stop subscribing to Sky services can still receive FTA channels through their Sky set-top box. In addition, Sky offers its own product, Freesat from Sky, through which households can view FTA channels on DSat, and most of these channels can also be received through non-Sky equipment.

- **Cable television** is provided by pay TV retailers who operate in specific regions in the UK. Analogue services exist in some areas, although most cable TV services are now digital. Virgin Media is the largest provider of cable TV in the UK serving c. 50% of households, with Smallworld serving regions in the north west of England and west of Scotland, and Wightcable serving the Isle of Wight.

- **IPTV** is carried over ADSL lines and is provided on a pay TV basis by Tiscali TV and BT Vision in the UK. Tiscali offers both linear and video-on-demand (VoD) services, while BT Vision offers VoD in combination with linear channels carried over Freeview/DTT.

2.2 In addition to traditional television services, made for television content is being delivered over the internet on dedicated free and subscription sites. These include free and pay offerings provided by the BBC, ITV, Channel 4 and Sky.

## The growth of pay TV in the UK

2.3 The emergence and growth of pay TV in the UK and elsewhere has historically been driven by the development of new platforms based on cable or satellite distribution technologies, and providing consumers with the option of paying for a wider choice of content than had traditionally been available from free-to-air terrestrial broadcasters. In the UK, this emergence and growth has largely happened over the last 20 years.

2.4 The main cable- and satellite-based operators are:

- Sky, created by the merger of Sky Television and British Satellite Broadcasting in 1990. Sky is now the major platform operator and retailer of satellite-based pay TV services in the UK. By the end of Q2 2007 there were 8.1 million Sky subscribers.

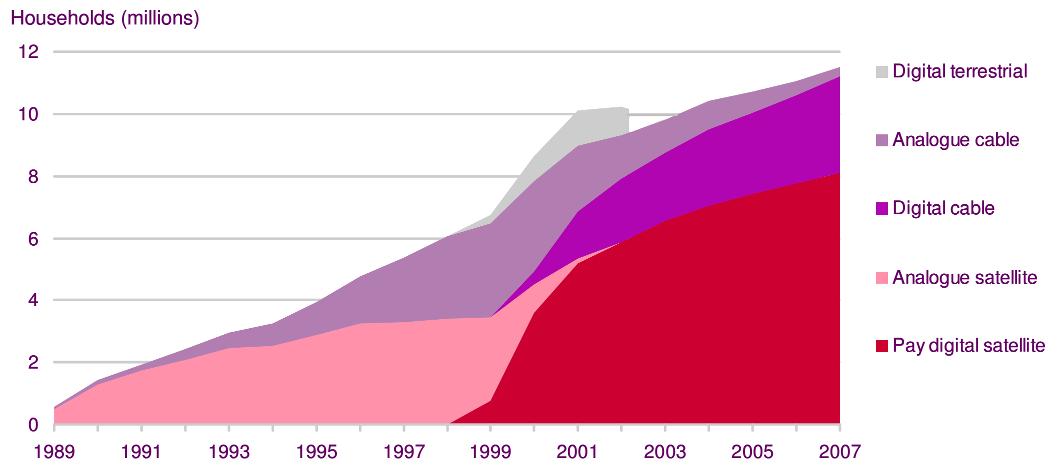
- Virgin Media, created by a consolidation over 13 years of the cable franchise areas set up in 1984, culminating in the merger of NTL and Telewest in 2006, and the subsequent re-branding of their services in 2007 to Virgin Media. Virgin is the main retailer of cable-based pay TV services in the UK[1]. In Q2 2007 Virgin Media had 3.4 million subscribers.

2.5 Both cable- and satellite-based providers initially broadcast using analogue technology but have since switched to digital. Sky migrated all its customers from analogue satellite to digital satellite between 1998 and 2002. The switch by cable has been slower, but almost all cable customers are now digital (only 8% of cable homes are still analogue, corresponding to 0.3 million consumers)

2.6 Between Q4 1998 and Q1 2002 pay TV services were offered on Digital Terrestrial Television (DTT) by ONdigital (owned by Carlton and Granada). In 2000, ONdigital agreed a £315m three year deal with the Football League for live rights to Nationwide League matches. In 2001 ONdigital re-branded to ITV Digital in an attempt to boost take-up by exploiting the ITV brand. The number of subscribers to ONdigital was lower than originally hoped for but still reached a significant total of 1.234 million by the end of 2001[2]. ONdigital was not without technical problems – there was a tendency for the set-top box software to crash, and coverage was only 50% to 60%[3]. In March 2002, Carlton and Granada put the company into administration after attempts to renegotiate the terms of the Football League deal failed.

2.7 Figure 1 below shows the growth over the last 15 years in the pay TV services listed above, split by analogue and digital subscribers.

**Figure 1 Pay TV platform penetration 1989-2007 (main TV set)**




[1] Smallworld Media also offers cable services to some areas of Scotland and Northern England, and Wight Cable operates on the Isle of Wight
[2] ONdigital originally projected one million subscribers by the end of 2000, and two million by early 2003.
[3] See for example "Football in the New Media Age", by Raymond Boyle and Richard Haynes.

*Source: 1989-1996 data from ITC, platform operators and BARB for July of each year; 1997 from Sky and ITC reports; 1998-2006 data from Ofcom estimates, platform operators and GfK research for Q2 of each year*

2.8 In the period since the migration from analogue to digital, there has been continuing strong growth in the total number of subscribers to Sky, but not in the total number of cable customers. In Q1 1999 the number of pay TV subscribers on Sky and on cable were broadly similar (3.5 million and 3.0 million respectively). By Q2 2007 there were many more subscribers on Sky (8.1 million as compared to 3.4 million for cable – i.e. Sky has approximately 70% of all subscribers). Recent growth has therefore been driven predominantly on Sky's satellite service. Almost half of UK households now subscribe to some form of pay TV service.

2.9 Pay TV was reintroduced on DTT by Top Up TV in 2004, leveraging the existing population of ONdigital set top boxes. Top Up TV sub-leases DTT capacity from Five on SDN-owned multiplex A. It has recently replaced nearly all its linear channels by making content available via its push-VoD service, Top Up TV Anytime, which launched in August 2006.

2.10 Other pay TV services have also emerged in recent years, including the Tiscali IPTV service (previously known as Homechoice) and the BT Vision hybrid IPTV / DTT service, for which latest reported subscriber numbers are 36,000 and 70,000[4] respectively. Sky retails some of its channels directly to Tiscali subscribers under its "Sky by Wire" brand.

## Free-to-air services

2.11 The transition to digital has also been important for the development of free-to-air services, allowing free-to-air broadcasters to offer a much wider range of channels within the available radio spectrum than they could using analogue transmission. In particular, Freeview was launched in 2002 using DTT spectrum released following the failure of ONdigital, and has had a key role in driving growth in UK multi-channel digital TV. In Q3 2007, there were 9.3 million DTT-only homes[5]. In Q2 2007, DTT overtook digital satellite as the distribution technology most widely used on the main set in UK households.

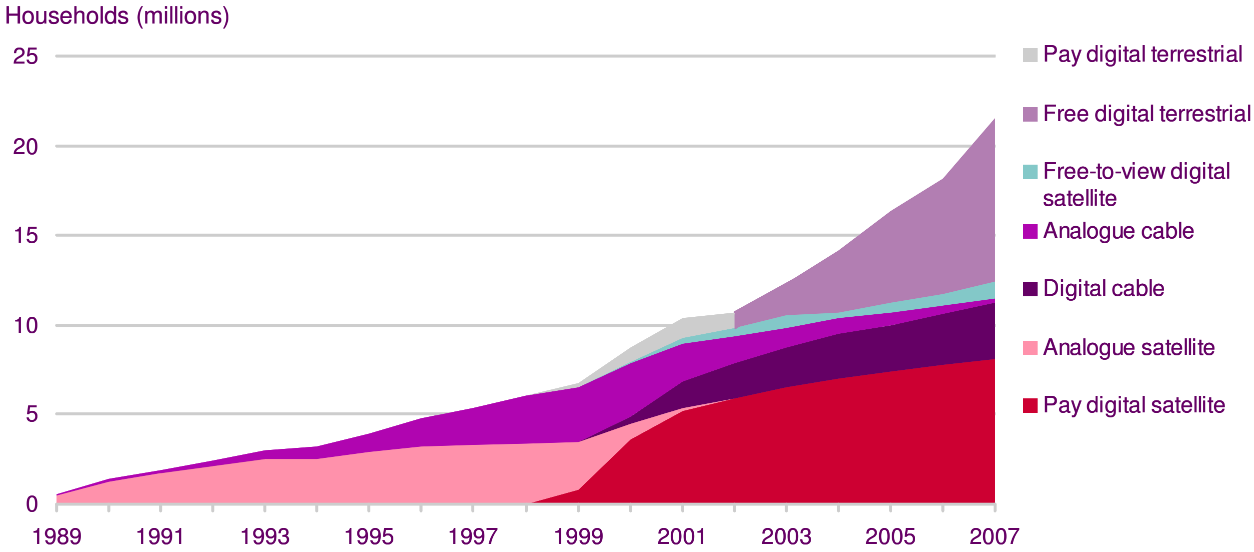
2.12 An estimated one million households also receive free-to-view digital satellite. Free satellite viewers receive channels either from stopping subscribing to Sky's pay services and retaining satellite reception equipment which allows them to pick up free-to-air channels; using satellite reception equipment from other retailers with a viewing card; or taking up Sky's "Freesat from Sky" service. For this latter service customers pay a £150 upfront fee for satellite reception equipment, and can receive around 200 free-to-view channels.

2.13 Figure 2 below shows the recent growth in multi-channel digital free-to-air services overlaid on the growth in pay TV services discussed previously:

[4] Tiscali quarterly report – http://investors.tiscali.com/tiscali/uploads/press/pressrelease3Q07_ENG.pdf; BT quarterly report published 8 November 2007 – http://www.btplc.com/Sharesandperformance/Quarterlyresults/Quarterlyresults.htm

[5] I.e. households that do not subscribe to any other digital service.

**Figure 2 Multi-channel platform penetration (main TV set)**

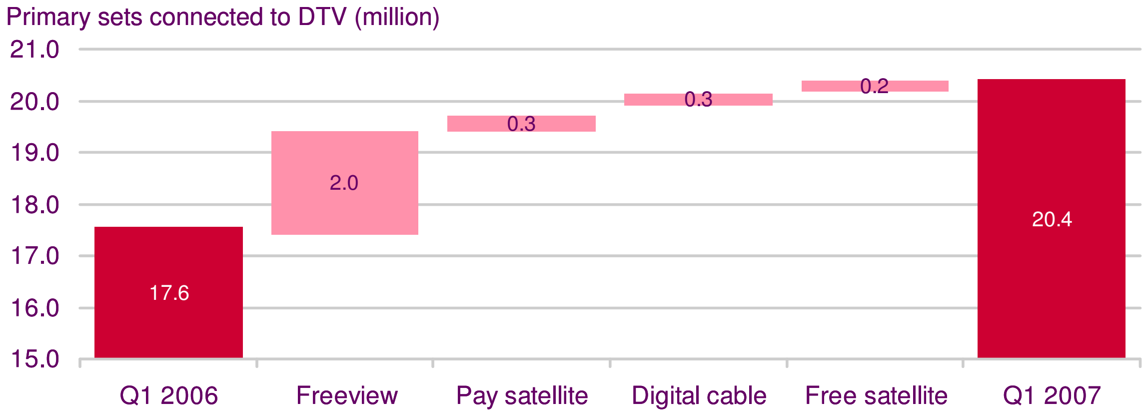



*Source: 1989-1996 data from ITC, platform operators and BARB for July of each year; 1997 from Sky and ITC reports; 1998-2006 data from Ofcom estimates, platform operators and GfK research for Q2 for each year*

2.14 The majority of multi-channel TV households (54%) still pay a subscription for their digital television service, but much of the recent growth in take-up is coming from free-to-air services. Between Q1 2006 and Q1 2007 the number of Freeview households increased by two million, whereas pay TV subscriptions on cable and satellite increased by 0.4 million.

2.15 Other pay TV services have also emerged in recent years including Top Up TV on DTT, and Tiscali (formerly Homechoice) and BT Vision through IPTV.

**Figure 3 Components of digital television take-up in 2006-2007 (main TV set)**




*Source: Ofcom estimates, platform operators and GfK research*

2.16 The data presented above represents main TV sets in UK households. Among the universe of total TV sets in the UK – approximately 60 million – analogue reception is still the most common accounting for 49% of sets followed by Freeview at just under 28% and pay satellite at around 15%.

2.17 Ofcom research in Q1 2007 indicated that growth in multi-channel television would continue – of those homes without digital television, 13% claimed that they intended to obtain a multi-channel service in the next sixth months.

## Growth of service bundling

2.18 Both satellite and cable operators now 'bundle' their television services with other telecommunications services. Bundling has also become increasingly central in retaining customers, which has become progressively more important as markets become saturated, customer acquisition costs remain high and customers continue to churn. Providers that traditionally only offered one service are expanding into new sectors, creating new competition between providers from 'new' entrants.

2.19 Although the cable operators have been offering bundled services for a number of years, many new offers, including those from Sky, have become available in the last year. Sky and Tiscali offer their customers the additional purchase of broadband and fixed line packages alongside its TV packages, while BT Vision and Virgin Media offers customers the ability to bundle broadband, fixed line and mobile services with their TV packages.

2.20 Driven by this greater range of bundled combinations and by the deals on offer, the number of households taking bundled communications services increased by a third in the year to Q1 2007, up 11 percentage points to 40%.

**Figure 4 Households taking bundled services from an operator**

Proportion of households (%)

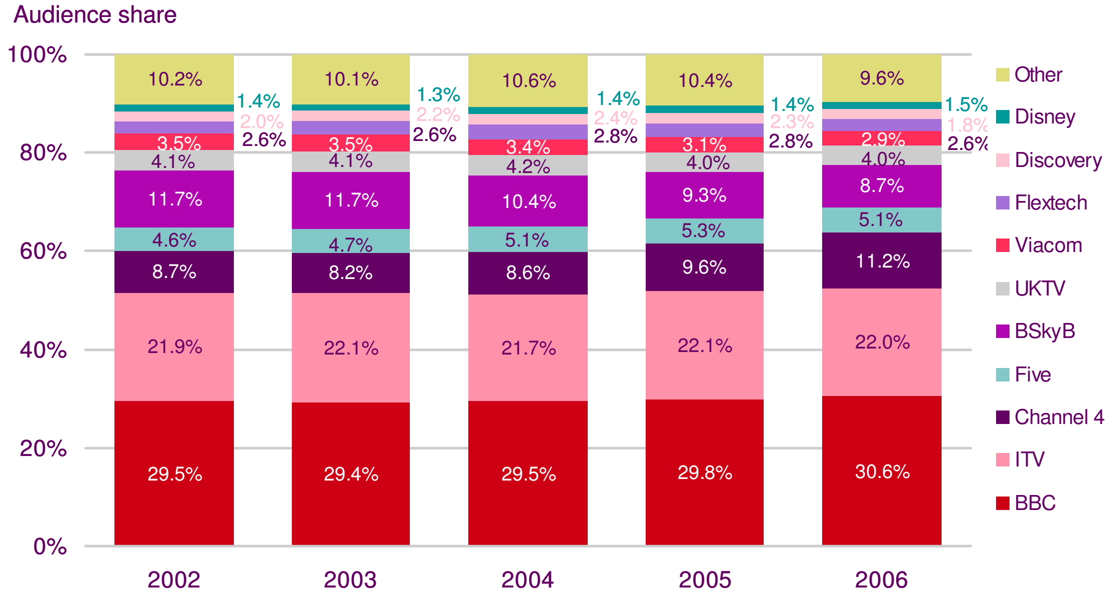

*Source: Ofcom consumer research, Q1 2007*

## Changes in viewing of multi-channel portfolios

2.21 In multi-channel homes, the portfolio audience share for each of the major broadcasting groups, including their digital channels, has experienced modest shifts in recent years.

2.22 Most notably, since 2003, Sky's channels have lost audience share – from 11.7% in 2002 to 8.7% in 2006. This is partly explained by the fact that only three Sky channels are available on the rapidly growing Freeview platform. The other multi-channels either slightly lost or maintained share, whereas the PSB channels' aggregate share in 2006, including spin-off channels, increased four percentage points from 64.7% in 2002 to 68.9% in 2006.

### Figure 5 Broadcaster portfolio shares in multi-channel homes

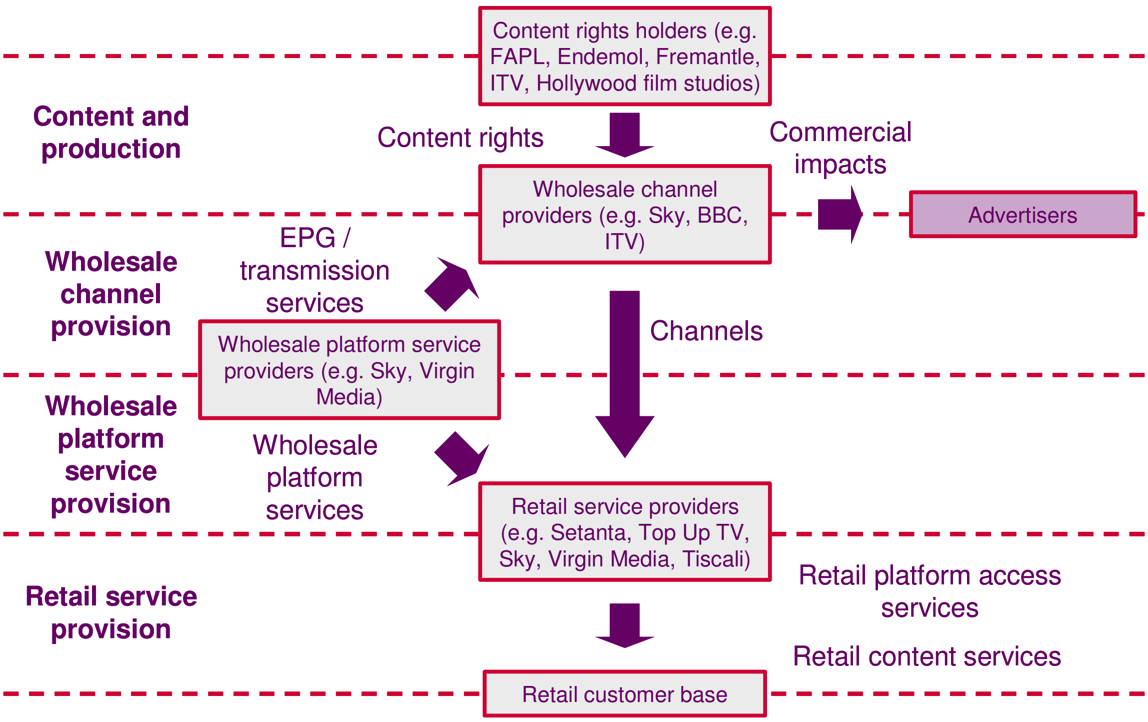



*Source: BARB*

## Structure of the TV value chain

2.23 The supply chain for the UK broadcasting industry may be considered to consist of four layers as illustrated by the diagram below.

### Figure 6 Structure of the UK pay TV industry




2.24 In practice, a number of operators in the broadcasting industry are vertically integrated and operate at multiple layers of the supply chain. For example, Sky is a vertically integrated wholesale channel provider, wholesale platform service provider and retail service provider.

2.25 In order to be precise about particular business activities, we have refrained from using the term 'broadcaster'. Instead we have used the following terminology to denote different business activities:

- wholesale channel provision;
- retail content service provision; and
- television advertising provision.

## Content and production

2.26 The content and production layer includes a variety of companies which own content rights, and generate revenue by selling these to wholesale channel providers. For example:

i) owners of IP rights for ready made programmes/films who licence the rights to broadcast programmes/films to wholesale channel providers (e.g. Hollywood film studios licence the rights to broadcast new and library films on a PPV, subscription and FTA basis);

ii) owners of the IP rights for programmes who may license the rights relating to concepts or formats for programmes to independent production companies or wholesale channel providers to produce their own content;

iii) associations representing sports clubs who may sell/license IP rights to broadcast sports content.

iv) independent production companies who produce films and/or programmes specifically for wholesale TV channel providers (i.e. commissioned programmes);

v) wholesale TV channel providers who have an in-house production unit which produces new programmes for its parent company/organisation’s channels or for third party channels;

vi) wholesale TV channel providers (e.g. BBC, ITV) who hold the IP rights to a library of content (e.g. from in-house productions or commissioned productions) and may license broadcasting rights to third party channel providers;

2.27 The table below highlights some of the key companies/businesses operating at the content and production layer.

**Table 1: Example companies operating at the content and production layer**

| Company/organisation | Activity | Type of content |
|---|---|---|
| Football Association Premier League | Collectively sells/licenses broadcasting rights on behalf of English Premier League football clubs | Premier League football matches |
| Endemol and subsidiaries | Sells/licenses broadcasting rights for:<br>(a) ready made programmes<br>(b) programme formats and concepts<br>Produces programmes | Quiz shows (e.g. Deal or No Deal)<br>Reality TV shows (e.g. Big Brother)<br>Factual programmes (e.g. Restoration Village for BBC2) |
| Granada Productions / ITV Productions | Sells/licenses broadcasting rights for ready made programmes<br>In-house production for ITV plc and the other ITV Network companies<br>Produces programmes for third parties | TV drama and action series (e.g. Prime Suspect and Cracker)<br>Soaps (e.g. Emmerdale and Coronation Street for ITV1)<br>Comedy shows (e.g. Royal Family for BBC)<br>Quiz shows (e.g. Countdown for Channel 4)<br>General entertainment programmes (e.g. Dancing on Ice for ITV1 and Brainiac for Sky One) |
| Hollywood Studio 'majors' and distribution subsidiaries': Disney, Sony, 20th Century Fox, Universal, Paramount, Warner Bros. | Sell/license rights to broadcast first run and library films | Films produced by Hollywood and some independent studios |
| US TV companies, e.g. Fox, HBO, Disney, NBC Universal | Sells/licenses broadcasting rights for ready made programmes | TV series such as Lost, 24, Heroes, Prison Break, Sex and the City, The Sopranos |

*Source: Company reports and websites*

## Wholesale channel provision

2.28 Wholesale channel provision is the aggregation of content into channels, or in many cases into groups of channels. A distinction is commonly made between 'free-to-air' and 'pay TV' channels.

2.29 Free-to-air (FTA) channels are available to viewers without a subscription. We include within this category channels which are broadcast without any encryption, and can therefore be viewed without any specialised equipment, as well as some encrypted, free-to-view (FTV) channels which can be viewed in return for a small one-off payment for a viewing card on some platforms. Examples of channels which are mainly available on a FTA/FTV basis include: BBC1, BBC2, BBC Three, ITV1, ITV2, Channel 4, E4, Film 4, Five, UKTV History, Sky News.

2.30 The main source of revenue for FTA channels is TV advertising and sponsorship services (e.g. for the year ended 31 December 2006, approximately seventy percent of ITV plc's revenues (£1,547 million[6]) were derived from advertising and sponsorship). The main exceptions to this are BBC channels which are funded by the TV licence fee, home shopping channels which obtain revenue from the goods they sell, and quiz/gambling channels which principally obtain their revenue from premium rate telephone numbers.

2.31 Pay TV channels are encrypted channels which are available to viewers upon payment of a monthly subscription fee. There may be considered to be three types of pay TV channel:

[6] Source: ITV plc annual report 2007 (http://www.investis.com/itv/storage/ar2006.pdf)

- Basic channels which are packaged together in different ways and a subscription fee is charged to viewers for viewing the entire package of channels;

- Premium channels without unique content, where an additional subscription is required for one channel or a small package of channels. Viewers are likely to have a choice between two or more channels with similar content (e.g. channels showing Adult/pornographic material);

- Unique premium content, where additional subscriptions are required for one channel or a small package of channels and the content available on those channels may be exclusive or otherwise unique (e.g. channels showing particular sports content or events such as Premier League football matches, and channels showing first run Hollywood films).

2.32 Examples of channels which are only available on a pay TV basis include: Sky Movies, Sky Sports, Sky One, UKTV Gold, Discovery, National Geographic, MTV, Setanta Sports, Eurosport, Nickelodeon, Sci-Fi Channel.

2.33 The principal source of revenue for pay TV channels is the channel/channel package subscription fees (e.g. for the year ended 30 June 2007, approximately eighty percent of Sky's revenues (£3,614 million) were derived from TV subscription fees much of which will be spent on third party channels as well as Sky's own channels), although such channels may also obtain a significant proportion of their revenue from advertising/sponsorship services, pay-per-view fees, and premium rate telephone numbers.

2.34 Wholesale TV channel providers may also offer their content to retail service providers for video on demand (VoD) services or for streaming programmes on websites. For example, Channel 4 (a vertically integrated wholesale TV channel provider and retail service provider) offers a VoD service to viewers whereby they can download programmes to a PC, either free of charge or through payment of a fee. It also streams some of its programmes on its website at the same time as it broadcasts them over TV platforms (this is known as 'simulcasting').

## Retail service provision layer

2.35 This layer involves companies that provide consumers with access to a particular TV platform, typically through the purchase of a set-top box, and which provide access to content, either on a subscription or a pay-per-view basis.

2.36 Retail pay TV services are often bundled with other communications services. For example, several companies provide 'triple-play' services incorporating telephone and broadband services as well as pay TV.

2.37 Pay TV retail service providers may also make content from their channels available to viewers using retail VoD services. For example, Sky allows its Sky Movies channel subscribers to download certain movies to their PC and/or set-top box free of charge. Virgin Media also provides a 'on-demand' service to its subscribers, whereby they can download programmes and films to their set-top box; some programmes are provided free of charge (as a catch up service) and others are charged on a pay-per-view basis.

2.38 Pay TV retail service providers require call centres to manage customer service and billing arrangements; marketing services to promote their TV packages, channels and other communications services; and may also need to provide some or all of the necessary equipment to subscribers to enable them to view encrypted TV channels.

## Wholesale platform service provision

2.39 This layer involves companies which operate wholesale TV broadcasting platforms and companies which provide technical capacity and transmission related services to retail service providers for TV channels and other content to be distributed to viewers/subscribers over those platforms.

2.40 In the UK, there may be considered to be two analogue distribution technologies which are being phased out (analogue terrestrial TV and to a limited extent analogue cable TV) and four digital multi-channel TV distribution technologies:

- Digital Terrestrial Television (DTT)[7];
- Digital satellite (sometimes referred to as DSat);
- Digital cable; and
- Internet Protocol TV (IPTV) (sometimes referred to as broadband TV[8]).

2.41 Two of the four digital distribution technologies may be used to provide FTA retail services to viewers and may therefore be considered to be free-to-air platforms:

- The 'Freeview' branded TV service available on DTT to viewers with compatible television sets and/or set-top boxes; and
- Free-to-air channels may also be broadcast on digital satellite. To receive these channels, viewers require a set-top box and a satellite dish, the most popular of which is the 'Freesat from Sky' branded product that includes a satellite dish and a set top box with a viewing card from Sky.

2.42 On the four digital distribution technologies, five systems to deliver pay TV services have been developed, whereby viewers can access channels or particular programmes/films by paying a monthly subscription fee and/or by paying a fee per programme viewed (known as pay-per-view). These pay TV platforms are as follows:

- The satellite TV platform operated by Sky, whereby viewers can subscribe to TV channel packages and channels retailed by Sky and some third parties (e.g. Setanta Sports);
- The Top Up TV and Top Up TV Anytime subscription services available to DTT viewers with compatible television sets and/or set-top boxes (provides programmes rather than linear TV);

[7] DTT is transmitted on television multiplexes. A multiplex is a term to describe a single broadcast frequency that contains multiple compressed channels. By way of example, the digital channels that are available from Freeview are broadcast in groups of six separate bundles and each bundle of channels is called a multiplex.

[8] The term 'Broadband TV' is also commonly used to refer to 'TV over the internet' services, i.e. streaming of content on websites, podcasts and PC downloads. Examples 'TV over the Internet' include You Tube, 4oD, Sky Anytime to PC, BBC iPlayer, and ITV.com.

- The cable TV platforms operated by Virgin Media (formerly ntl:Telewest), WightCable and Smallworld (formerly WightCable North);
- The IPTV platform operated by Tiscali TV (formerly HomeChoice) (including the 'Sky by Wire' packages of Sky Sports and Sky Movies channels retailed by Sky); and
- The hybrid DTT/IPTV service provided by BT Vision[9].

2.43 Take-up numbers for the various distribution technologies are provided earlier in this annex in Figure 2.

2.44 The main wholesale services which may be required by retail service providers for broadcasting channels on the different TV platforms include:

- playout services (distributing content from a wholesale TV channel provider to a transmission service provider for final transmission to the viewer);
- encoding and compression services (i.e. coding and compressing the channel content using the appropriate technical standard, such as MPEG2);
- access to capacity required for broadcasting over particular platforms (e.g. for satellite TV, capacity for the data pathways in the satellites which orbit the Earth);
- transmission arrangements for closed networks (e.g. cable and DSL networks);
- access to the masts and antennas used for analogue and DTT broadcasts;
- satellite uplink services: the transmission of data for satellite TV from a ground station (i.e. large satellite dish) up to an orbiting satellite;
- Conditional Access (i.e. used for encrypting TV channels), Access Control (used for interactive 'red button' services) and Electronic Programming Guide (EPG) services (collectively these three services are commonly referred to as 'Technical Platform Services' or 'TPS').

[9] This service utilises the 'Freeview' service to give subscribers access to linear channels and an IPTV platform to give subscribers access to VoD content on a subscription and pay-per-view basis.

**Table 2: Arrangement for key wholesale services by distribution technology**

| Activity | Distribution technology | | | |
|---|---|---|---|---|
| | **Digital cable (Virgin Media)** | **Digital satellite** | **DTT** | **IPTV (Tiscali TV)** |
| Playout | Provided by third parties such as Arqiva, Red Bee Media, and Siemens Business Services | Provided by Sky and third parties such as Arqiva, Red Bee Media, and Siemens Business Services. | Provided by third parties such as Arqiva, Red Bee Media, and Siemens Business Services. | Provided by third parties such as Arqiva, Red Bee Media, and Siemens Business Services. |
| TPS | Third party channels can only be wholesaled to Virgin Media and therefore channel owners do not need to procure TPS related services.<br>Encryption and EPG related services are provided by Virgin Media for its vertically integrated retail service provision business. | If required, third party channels have to procure access control, conditional access and EPG services from Sky.<br>Sky also provides these TPS services to its vertically integrated retail service provision business. | Access to encryption services is currently only available from the pay TV retail service provider Top Up TV.<br>EPG listing allocations are controlled by DTT Multiplex Operators Limited. | N/A |
| Transmission | Third party channels can only be wholesaled to Virgin Media and therefore channel owners do not need to procure TPS related services<br>Transmission services are provided by Virgin Media for its vertically integrated retail service provision business. | Uplinking and compression services are provided by Sky and third parties (e.g. Arqiva).<br>Satellite transponder capacity may be available directly from satellite operators or via a sub-lease for capacity from Sky or third parties such as BT.<br>Satellites with UK coverage are operated by SES Astra and Eutelsat. | The UK's network of sites, masts and antennas are operated by Arqiva and National Grid Wireless.<br>Multiplex capacity is controlled by the six multiplex operators. | N/A |

*Source: Company reports and websites*

## Channel wholesaling and retailing

2.45 A variety of specific commercial arrangements have been adopted for the wholesaling and/or retailing of channels. The term 'channel wholesaling' is used to describe arrangements whereby a channel owner contracts with a retail service provider to include their channel(s) in one or more pay TV packages. The retail TV service provider arranges for transmission of the channel(s) and will have a direct relationship with the subscriber. The retail service provider will normally pay for the arrangements relating to pay TV (i.e. charges for encryption, EPG services, transmission arrangements, customer service and billing) and will receive the subscription revenue for the channel. The channel owner will normally be paid a proportion of the subscription revenue (commonly based on the actual or envisaged success of the channel) and may also receive revenue from advertising and sponsorship[10].

2.46 There also appear to be hybrid 'wholesale' arrangements, whereby channel owners receive all the subscription revenue for their channels, but contract with vertically-integrated platform operators and retail service providers to manage some or all the

[10] In some cases, a channel owner may not receive any payments for wholesaling their pay TV channels, but will not normally have to pay for transmission, technical platform services, customer service and billing. In such cases, the channel owner will normally derive their revenues from advertising and sponsorship services, and possibly from premium rate telephone numbers.

pay TV arrangements for the channels. For example, Sky retails certain Sky Sports and Sky Movies channels directly to Tiscali TV subscribers and receives all the subscription revenue. However, Sky pays Tiscali a fixed monthly fee per subscriber for customer management, billing and sales agency services.

2.47 Instead of wholesaling their channels, some channel owners may choose to retail a small number of channels directly to subscribers (or in the case of FTA channels, viewers). This arrangement is sometimes referred to as the 'direct retail model' and is commonly used for FTA channels, and pay TV channels with adult or specialist content (e.g. Adult/pornographic and Asian channels). Channel owners which retail their own channels directly to subscribers/viewers operate at the retail service provision layer of the supply chain.

2.48 Table 3 below give examples of wholesale and retail arrangements for distributing channels.

### Table 3: Examples of wholesale/retail arrangements by platform

| Example channels | Examples of pay TV platforms which carry the channels | Non-confidential summary of wholesale / retail arrangements |
|---|---|---|
| Virgin Media Television wholly owned channels (e.g. Bravo, Living) and UKTV joint venture channels (e.g. UKTV Gold, UKTV Drama) | Sky Digital<br>Tiscali TV<br>Top Up TV<br>Virgin Media | The Virgin Media Television wholly owned and UKTV joint venture channels are wholesaled to Sky, and the majority of the channels are included in Sky's pay TV packages.<br>UKTV joint venture channels are wholesaled to Tiscali for inclusion in it pay TV packages.<br>Some of the wholesaled pay TV channels obtain revenue based on either the number of customers subscribing to pay TV packages or a fixed monthly fee.<br>Virgin Media is a vertically-integrated wholesale channel provider and retail service provider, and therefore retails its wholly owned channels as part of its digital cable pay TV packages.<br>All the Virgin Media Television wholly owned and joint venture (i.e. UKTV) channels generate revenue from advertising and sponsorship. |
| Sky Movies and Sky Sports channels | Sky Digital<br>Tiscali TV<br>Virgin Media | Sky Movies and Sky Sports channels are wholesaled to Virgin Media for inclusion in pay TV packages. Virgin Media pays Sky a monthly per subscriber fee per channel package.<br>Sky retails certain Sky Sports and Sky Movies channels directly to Tiscali TV subscribers and receives all the subscription revenue. However, Sky pays Tiscali a fixed monthly fee per subscriber for customer management, billing and sales agency services<br>Sky is a vertically integrated wholesale channel provider and retail service provider, and therefore retails its wholly owned channels as part of its digital satellite pay TV packages. |

| Example channels | Examples of pay TV platforms which carry the channels | Non-confidential summary of wholesale / retail arrangements |
|---|---|---|
| Setanta Sports | BT Vision<br>Sky Digital<br>Tiscali TV<br>Virgin Media | Setanta Sports channels are wholesaled to Virgin Media for inclusion in pay TV packages.<br>On the digital satellite platform, Setanta retails the Setanta Sports channels directly to Sky Digital subscribers and 'Freesat from Sky' viewers. Setanta procures Conditional Access (encryption) and EPG services from Sky.<br>Setanta Sports content is wholesaled to BT Vision for inclusion in its subscription VoD packages and/or pay-per-view services. |

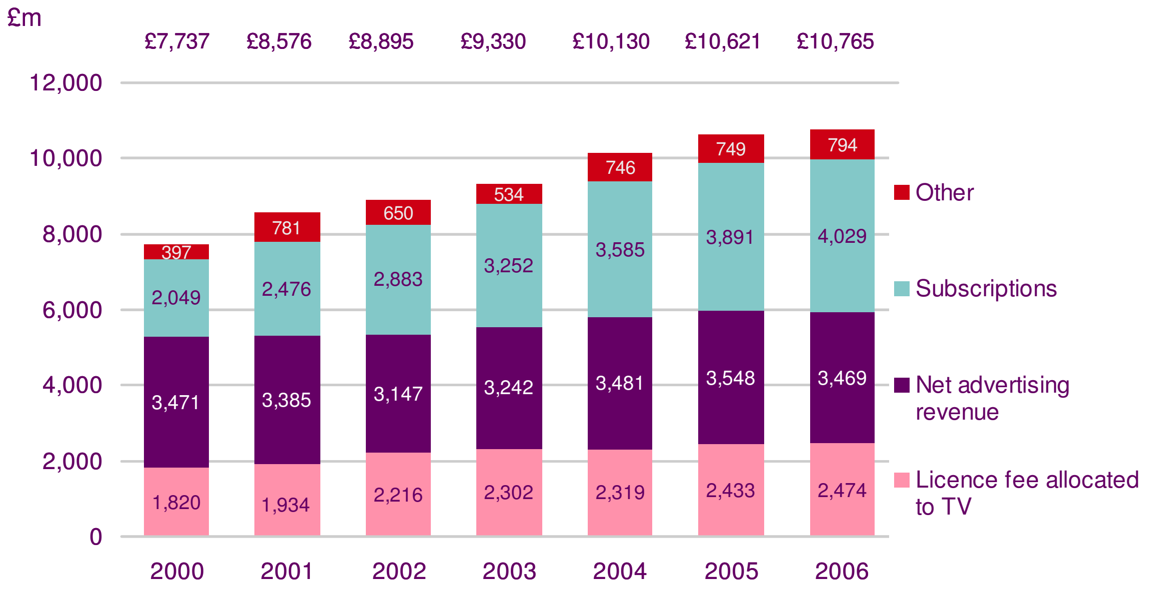
*Source: Company reports and websites*

## Sources and flows of revenue in UK pay TV

2.49 There are three key sources of revenue for the broadcast sector: public funding (the BBC licence fee), advertising revenues (combined commercial multi-channel and commercial analogue channels), and retail service provider revenues from pay TV (subscriptions). Figure 7 below illustrates the increasing importance of pay TV subscription revenue over recent years: in 2000 it accounted for around a quarter (26%) of total revenue and in 2006 for more than a third (38%).

2.50 Since 2003, subscriptions have made up the largest revenue stream within total TV industry revenue. In 2006, subscriptions totalled just over £4 billion, exceeding the revenue generated by TV advertising (£3.5 billion) and the level of public funding (£2.5 billion).

### Figure 7 Total TV industry revenue by sector




*Source: Ofcom estimates and broadcasters*
*NB Net advertising revenue includes both commercial analogue and multi-channel channel revenue*

2.51 In the above chart, 'other revenue' comes from interactive services, TV shopping, PPV, sponsorship, S4C grants and programme sales; the largest amounts came from sponsorship at £162 million, TV shopping at £159 million and interactive services at £123 million.

2.52 Pay TV is still a relatively small market in revenue terms compared to other communications markets. The fixed retail telecoms market accounted for £38.5 billion and the retail mobile market £13.9 billion in 2006. In revenue terms, pay TV represents about 6% of the total UK communications market.

## Flow of funds

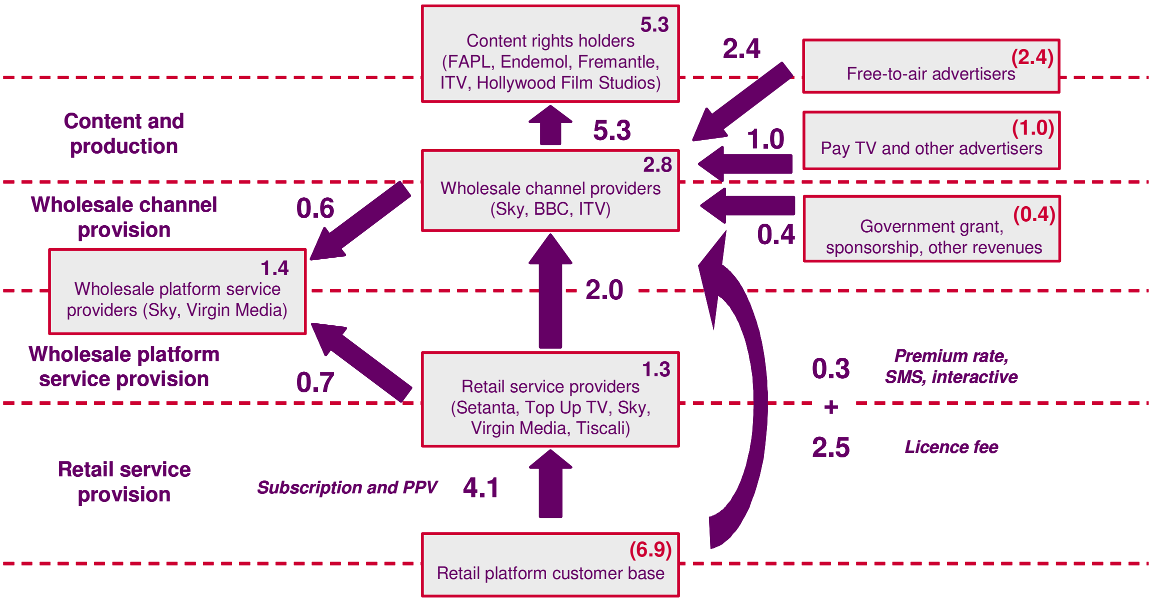
2.53 We have used various sources of data to estimate the way in which revenues generated by the broadcast industry flow through the value chain. The results of any such analysis should be regarded as indicative rather than definitive, but are nevertheless of interest. The results are summarised in Figure 8, which shows revenue flowing through the value chain, from the retail customer base up to content rights owners. It also shows the revenue retained at different points in the value chain.

2.54 This analysis suggests that a relatively small amount of total broadcast revenues (£1.3 billion) are retained at the retail level. Most of the revenue generated by the industry flows through either to content rights holders (£5.3 billion), wholesale channel providers (£2.8 billion) or wholesale platform services (£1.4 billion). The analysis also illustrates the two-sided nature of wholesale channel markets, revenue from both viewers and advertisers being combined to pay for content.

2.55 Note that the retail revenues shown here for pay TV include a significant contribution from commercial subscribers (offices, retail outlets, hotels, pubs and clubs) as well as from residential subscribers. Many pubs, for example, purchase a premium sports service from Sky for viewing by their customers. The significance of this commercial revenue stream is illustrated by the fact that over 45,000 commercial premises of various sorts subscribe to Sky services, and pubs and clubs for example pay anything from £89 per month to £2,790 per month for each viewing card, depending on the rateable value of the premises[11].

[11] Information from Sky's website – correct at 4 December 2007.

## Figure 8 2006 UK broadcasting sector flow of funds




*Source: the figures in the diagram are derived from a combination of publicly available sources, such as annual reports of market players, revenue and cost data provided to Ofcom for the purpose of calculating qualifying revenues together with licence returns and Ofcom data on regulated conditional access and EPG charges.*

*Note: all figures in GBP billions. Figures inside boxes represent the net flows in or out of each area of the value chain.*

## A history of UK pay TV providers

2.56 The growth of pay TV markets have principally been driven by cable and satellite platforms in the last 20 years, although with varying degrees of success over this period. Table 4 and Table 5 set out a history of UK television platforms in more detail.

### Table 4: A history of pay TV platforms (1992-1996)

| Date | Platforms and distribution | Channels & content |
|---|---|---|
| 1982 | News International takes control of the Satellite Television UK and rebrands the service as the 'Sky Channel'. | Channel 4 and S4C begin broadcasting |
| 1984 | The Home Office grants the first Cable TV service licence to Swindon Cable on 13 January.<br><br>Rediffusion launches a four-channel cable television service on 29 March (this includes the Sky Channel).<br><br>Swindon Cable launches its Cable TV service on 17 September. | |
| 1986 | The IBA awards British Satellite Broadcasting (BSB) the franchise licence to operate three channels of direct broadcasting by satellite (DBS) on December 11 | |
| 1987 | | MTV Europe satellite/cable channel launched from UK on 1 August. |
| 1988 | Astra 1A satellite is launched | |

| Date | Platforms and distribution | Channels & content |
|---|---|---|
| 1989 | Sky Television launches UK 4 channel direct-to-home satellite service via the Astra 1A satellite.<br><br>British Satellite Broadcasting (BSB) launches the Marcopolo 1 satellite. | |
| 1990 | British Satellite Broadcasting (BSB) launches direct-to-home (DTH) satellite service.<br><br>Sky Television merges with BSB to form British Sky Broadcasting (Sky). | |
| 1991 | Sky relaunches as a five channel service | |
| 1992 | Sky signs exclusive live television rights deal with the FA Premier League. | UK Gold channel launches on 1 November. |
| 1993 | Sky launches multi-channel subscription package (including some non Sky channels) on 1 September. | The Channel 4 Corporation is created on 1 January<br><br>UK Living channel launches on cable and satellite on 1 September.<br><br>The Nickelodeon channel (a joint venture between Sky and MTV Networks) launches on cable & satellite.<br><br>QVC channel launches on cable & satellite. |
| 1995 | | Paramount channel launches in UK<br><br>UK version of Disney channel launches as subscription service available on Satellite and cable. |
| 1996 | | Men & Motors launches as JV between Granada TV (now ITV plc) and Sky. |

## Table 5: A history of pay TV platforms (1997-2007)

| Date | Satellite platforms and distribution | Cable platforms and distribution | DTT platforms and distribution | Other TV platforms and distribution | Channels & content |
|---|---|---|---|---|---|
| 1997 | On 7 May British Interactive Broadcasting (BIB) is formed as a joint venture between BT (32.5 per cent), Sky (32.5 per cent), Midland Bank (20 per cent) and Matsushita (15 per cent) to develop interactive digital satellite services that become available from autumn 1998. | | On 27 June British Digital Broadcasting (BDB) consortium wins the licence for digital terrestrial television (DTT), beating one other contender, DTN. | | Channel 5 (later renamed Five) begins broadcasting on Easter Sunday, 30 March.<br>MTV UK channel launches on 1 July.<br>FilmFour launches on 1 November.<br>BBC News 24 channel launches on 9 November. |
| 1998 | Sky launches Sky Digital, its digital satellite television service. | | Three DTT multiplexes are gifted to the analogue terrestrial broadcasters and Teletext. The remaining three DTT multiplexes (B, C, and D) are auctioned off and won by the British Digital Broadcasting consortium (later rebranded as ONdigital).<br>DTT broadcasting begins on 15 November. ONdigital offers a 40 channel DTT service (a mixture of pay TV and FTA channels). | | ITV2 channel launches on 7 December.<br>BBC launches BBC Choice (later to be replaced by BBC3) and BBC Parliament digital channels on 23 September. |
| 1999 | By the end of 1999 there are an estimated 2 million Sky digital subscribers.<br>Interactive TV service 'Open...' launches on Sky Digital (later renamed Sky Active).<br>On 22 August Sky broadcasts first interactive football match on Sky Sport Xtra. | Telewest launches digital cable TV. | | KIT, Kingston's interactive television service, is launched in Kingston upon Hull, offering customers digital television, video-on-demand, internet & e-mail and web-based local information via their television sets. | TCM channel launches in Europe. |
| 2000 | | Telewest acquires Flextech | | Wight Cable launches Cable TV service in Isle of Wight.<br>Homechoice launches in London (including VoD service) on 26 September. | |

| Date | Satellite platforms and distribution | Cable platforms and distribution | DTT platforms and distribution | Other TV platforms and distribution | Channels & content |
|---|---|---|---|---|---|
| 2001 | Eutelsat launches Eurobird 1 satellite.<br>Sky turns off analogue Satellite TV service on 27 September.<br>Sky+ DVR service is launched. | NTL launches digital cable TV service on 29 August. | ONdigital reaches 1m subscribers and is renamed ITV Digital. | Wight Cable North launches Cable TV service in North West of England covering the Borders, Carlisle, Morecambe and Lancaster. | E4 channel launches on 18 January. |
| 2002 | OFT publishes conclusions on Sky Competition Act Investigation | NTL enters Chapter 11 protection | ITV Digital is placed into administration on 27 March.<br>ITV Digital pay TV service ends on 1 May (but a few pay TV channels, such as E4, continue to broadcast).<br>Freeview DTT service launches on 30 October to replace ITV Digital. | | CBeebies and CBBC channels are launched on 11 February.<br>BBC4 channel launches on 2 March. |
| 2003 | | NTL re-emerges from Chapter 11 | | | BBC3 channel launches on 9 February. |
| 2004 | | NTL acquires remaining shares in virgin.net<br>Telewest restructures financially | Top Up TV launches DTT pay TV service on 31 March. | BT announces plans to launch new broadband TV service 'BT Vision'. | ITV3 channel launches on 1 November.<br>Carlton-Granada merges to create ITV plc on 2 February. |
| 2005 | OFT approves acquisition of Easynet Group by Sky | Telewest start to provide a HDTV service.<br>NTL and Telewest start providing VoD services.<br>On 30 December the OFT approves the merger of cable operators NTL and Telewest | ITV PLC acquires SDN Limited (the operator of DTT multiplex A) from United Business Media plc and S4C Digital Media Limited.<br>RTL Group announces on 18 November that Five has agreed to buy a stake in Top Up TV. | Sky and Vodafone launch Sky mobile TV service on 1 November.<br>O2 Mobile TV trials begin in Oxford on 22 September. | More 4 channel launches on 10 October. |

| Date | Satellite platforms and distribution | Cable platforms and distribution | DTT platforms and distribution | Other TV platforms and distribution | Channels & content |
|---|---|---|---|---|---|
| 2006 | Sky launches a broadband download service for sports programmes and films, using a peer-to-peer infrastructure.<br>Sky launches HDTV service on digital satellite platform.<br>Sky wins rights to 96 Premier League Matches including most sought after 'A' package.<br>In July Sky offers free 2MB broadband service to Sky digital subscribers (faster broadband speeds are also available at additional fees).<br>Sky acquires a 17.9% stake in ITV plc on 17 November. | Telewest launch DVR service TV Drive with HD capacity on 10 March.<br>On 3 March NTL and Telewest complete merger.<br>NTL:Telewest completes acquisition of Virgin Mobile.<br>NTL:Telewest launches a free TV service to new and existing landline customers on 1 September.<br>NTL:Telewest launches first quad play package on 28 September<br>NTL:Telewest rebrands as Virgin Media | On 31 August Top Up TV announces planned launch of new 'Top Up TV Anytime' service.<br>In October Top Up TV's Anytime pay TV service is launched on DTT. | Kingston Interactive TV (KIT) service ends on 1 April.<br>Setanta wins rights to 46 Premier League matches.<br>On 1 June Orange announces plans to offer broadband TV service including VoD.<br>Tiscali buys Homechoice in August 2006<br>Launch of BT Vision in December 2006 | Five announces plans to launch 2 digital channels in Autumn 2006: Five US and Five Life.<br>FilmFour channel moves to Freeview on 23 July and rebrands as Film4. Film4 Weekly ceases broadcasting on 19 July. Channel 4 also announces plans to launch Film4 VoD service.<br>Five US and Five Life channels are launched on Monday 16 October. |
| 2007 | Sky purchases set-top box manufacturer, Amstrad, for a reported £125m | Virgin Media decides not to carry Sky Basic channels following breakdown in negotiations over price rises, launches high court action against Sky | Sky announces plans to launch Picnic offering on DTT, makes request with NGW for licence variations | Homechoice renamed Tiscali TV | Virgin 1 replaces ftn.<br>ABC1 closes<br>UKTV G2 is rebranded Dave and moves to Freeview.<br>Nuts.tv launches on Freeview |

## Section 3

# Television offerings available in the UK

## Introduction

3.1 This section provides details of a selection of the main multi-channel offerings in the UK. The offerings covered are:

1. Digital Terrestrial Television
   - Freeview
   - Top Up TV
2. Digital Satellite
   - Sky Digital
   - FTA on digital satellite and freesat from Sky
3. Digital Cable
   - Virgin Media
4. IPTV
   - BT Vision
   - Tiscali TV
5. Cross-platform retailer
   - Setanta

3.2 For each of these, we provide profiles of the history of each of the offerings, an overview of their current business operations, and details of current television and associated offerings that each company provides. Details are correct as of 7 December 2007.

3.3 To end, we have also outlined examples of pay TV offerings that are no longer offered.

## 1. Digital Terrestrial Television

## Freeview

### History

3.4 Freeview was launched on DTT in October 2002, following the collapse of ITV Digital in March 2002

3.5 It is operated by DTV Services Limited, a company owned and run by its five shareholders, BBC, Sky, Channel 4, ITV and National Grid Wireless

## Business overview

3.6 Freeview offers around 40 digital television channels and around 30 digital radio channels in the UK.

3.7 There are no subscription fees for Freeview, with viewers requiring only a compatible set-top box, which can be purchased from around £20.

### UK coverage details

3.8 Freeview is receivable in areas covered by DTT. At least 73% of UK homes have access to DTT[12].

### Geographical issues

3.9 Freeview has regional variations for some of the channels broadcast, as described in Table 6 (this does not cover radio channels). It should also be noted that Freeview viewers in parts of Northern Ireland and Wales may also be able to receive DTT channels from the Republic of Ireland.

**Table 6: Regional variations for Freeview TV channels**

| Channel Name | Regional Availability | Notes |
|---|---|---|
| BBC1 | Different versions of BBC1 are broadcast in England, Wales, Scotland, and Northern Ireland | |
| BBC2 | Different versions of BBC2 are broadcast in England, Wales, Scotland, and Northern Ireland | |
| BBC 2W | Wales only | BBC 2W focuses on the stories which affect the people in Wales. It screens some of the major BBC Wales series before other terrestrial channels.<br><br>BBC 2W is usually on air between 8.30 and 10pm each weeknight. At other times the channel is the same service as BBC Two Wales. |
| ITV1 | Some programming on ITV1 (e.g. news) is broadcast differently across the 15 ITV franchise regions of the UK, Isle of Man and Channel Islands | ITV1 is branded as 'STV' in Central and Northern Scotland and 'UTV' in Northern Ireland. |
| Channel 4 | England, Scotland and Northern Ireland | |
| S4C | Wales only | The Welsh equivalent to Channel 4 which broadcast a mixture of Channel 4 and Welsh language programmes. Provides over 80 hours of Welsh language programmes every week, from sport, music, live events and children's programming to news, documentaries and major drama. |
| S4C2 | Wales only | Provides uninterrupted coverage from the Welsh Assembly on Tuesdays, Wednesdays and Thursdays when the Assembly is in session. |
| TeleG | Scotland only | Gaelic TV service available 18:00 - 19:00 everyday. |
| QVC | Reduced broadcasting hours in Wales (not broadcast 0900-1700 Tuesday-Thursday) | Broadcasts 24-hours a day in England, Scotland and Northern Ireland. |
| BidTV | Reduced broadcasting hours in Wales (only broadcasts 0600-1900) | Broadcasts 08:00 - 01:00 each day in England, Scotland and Northern Ireland. |

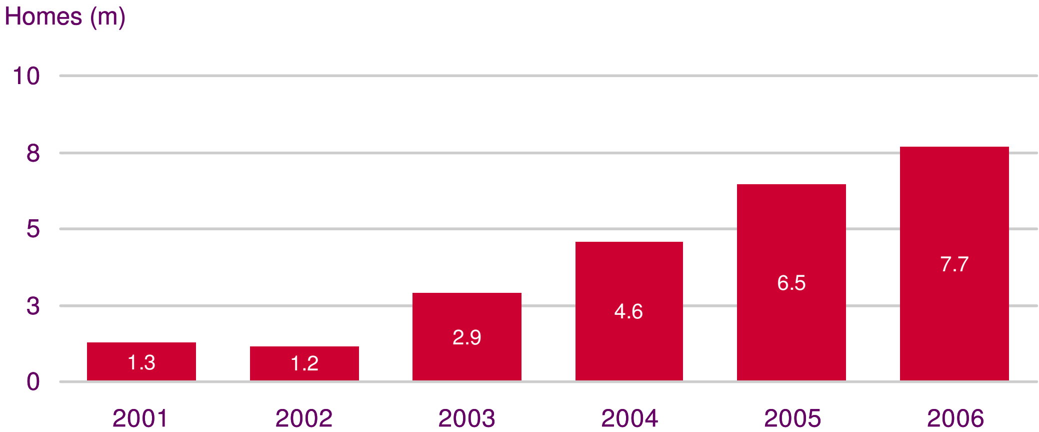
*Source: Freeview website*

[12] See http://www.ofcom.org.uk/research/cm/nations/nations_regions/nations_regions.pdf

Number of DTT-only households

3.10 Figure highlights the number of DTT-only households over time.

**Figure 9: DTT-only households**




*Source: Ofcom Digital Television Updates, figures for Q4 of each year*

## TV packages and other communications services provided

Freeview Channels

3.11 Freeview broadcasts c. 40 FTA television channels and c. 30 radio channels from a variety of channel owners. Table 7 sets out the television channels available on Freeview.

**Table 7: Television channels available on Freeview**

| Company | Channels | Notes |
|---|---|---|
| BBC | BBC1, BBC2, BBC3, BBC4, CBBC, CBeebies, BBC Parliament, BBC News 24 | |
| ITV plc | ITV1, ITV2, ITV2+1, ITV3, ITV4 | ITV1 replaced by STV and UTV in Scotland and Northern Ireland |
| Channel 4 | Channel 4, Channel 4+1, E4, E4+1, More4, Film4 | |
| S4C | S4C Digidol, S4C2 | Wales only |
| Sky | Sky Three, Sky News, Sky Sports News | |
| Five | Five, Five Life, Five US | |
| Virgin Media | Virgin 1, bid tv, pricedrop tv | |
| UKTV | UKTV History, Dave | |
| QVC | QVC | |
| Emap | The Hits* | |
| MTV | TMF | |
| Other | Ideal World, Smile TV, Nuts TV, Gems TV, Jewellery Channel, Community Channel, Teachers' TV | |

*Note: Does not include additional interactive streams; some channels are not available in some regions.*

Interactive Services

3.12 Red-button interactivity is available on certain channels as produced by the individual channels. Given bandwidth limitations of DTT relative to DSat, many of the interactive functions offered by channels on Freeview are more limited than on DSat for the same channel

DVR Services

3.13 Whilst Freeview does not manufacture equipment or retail equipment directly to the consumer, it has created a consumer brand, Freeview Playback, in May 2007 aimed at raising the awareness of Freeview capable DVRs.

HD Services

3.14 There are currently no HD services on Freeview.

Broadband and telephony products

3.15 Freeview does not offer any broadband or telephony products.

## Top Up TV

### History

3.16 Top Up TV was created in 2004, originally as a pay TV service to carry up to 11 linear channels on DTT.

3.17 In August 2006, Top Up TV launched a new "push-VoD" service in which programmes are downloaded overnight to allow the viewer to watch the content at a later time.

### Business overview

3.18 Top Up TV offers pay TV services via digital terrestrial television in the UK. It operates alongside the Freeview service, but is otherwise unconnected with Freeview. Top Up TV originally entered the pay TV market on 31 March 2004 with a package of 10 channels[13].

3.19 Its main pay TV service 'Top Up TV Anytime' is a Push-Video on Demand service offering programming from a range of UK television channels that are downloaded daily onto a specialist digital video recorder. Top Up TV also retails a limited number of linear pay TV channels which are being phased out. It also operates the pay-per-view adult service 'Television X' via Xtraview technology.

3.20 Top Up TV was the first pay television service to launch on DTT after the collapse of ITV Digital in 2002. The original Top Up TV service was available through ONdigital and ITV Digital boxes, set-top boxes with card slots, and integrated digital television sets (IDTVs) with a conditional access module (CAM).

[13] UKTV Gold, UKTV Style, UKTV Food, Bloomberg, Boomerang, Cartoon Network, E4, Discovery Channel, Discovery Home and Leisure, TCM.

3.21 Top Up TV is a vertically integrated platform service operator and retail service provider. Top Up TV currently provides conditional access services to Setanta on DTT.

3.22 Top Up TV does not provide any broadband or telephony products.

UK coverage details

3.23 Top Up TV is receivable in areas covered by DTT. At least 73% of UK homes have access to DTT[14].

Geographical issues

3.24 It would appear that there are no regional variations for the pay TV channels/content available to Top Up TV Anytime subscribers.

Total subscribers per year and homes passed

3.25 Information on the number of Top Up TV subscribers is not publicly available

Equipment and installation costs

3.26 Table 8 below shows the equipment, installation and monthly costs of new and existing Top Up TV customers.

**Table 8: Equipment and installation costs for Top Up TV**

| Product / Service | Freeview | Existing Top Up TV customers | | | New customers |
|---|---|---|---|---|---|
| | | Original service* | Anytime Opt. A | Anytime Opt. B | Anytime Opt. C |
| STB & connection | From £40 | From £39.99 for STB, £20 connection fee | £49.99 | £99.99 | £99.99 |
| Monthly subscription | Free | £7.99 per month | £9.99 per month | £9.99 per month | £9.99 per month |
| Contract | None | Monthly | 12 months | Monthly | Monthly |

*Notes: *The original service is no longer available to new customers.*
*Source: Top Up TV website (August 2007)*

## TV packages and other communications services provided

3.27 In late 2006, Top Up TV launched their new 'Anytime' pay TV subscription service on DTT for a monthly subscription fee of £9.99. In addition to Freeview channels, it provides customers with access to over 100 hours of programming per week pushed to the set-top box.

3.28 Top Up TV Anytime customers can subscribe to Setanta Sports for £9.99 per month. Customers who do not have the Anytime DVR can purchase a Setanta Sports ready STB from £39.99. This means that customers do not have to subscribe to the Anytime service to be able to subscribe to Setanta Sports.

3.29 In spring 2007, Top Up TV stopped signing up customers to their original pay TV service. From April 2007 existing customers have only been able to receive three additional channels for a £7.99 monthly fee: British Eurosport (broadcast 7:30-10am), UKTV Gold (broadcast 4pm-1am), UKTV Style (broadcast 1pm-4pm).

[14] See http://www.ofcom.org.uk/research/cm/nations/nations_regions/nations_regions.pdf

Existing Top Up TV customers can purchase the ‘Anytime’ set-top box at a discounted price.

Sky Channels

3.30 There are three Sky joint venture channels included in the Top Up TV Anytime pay TV bundle: The History Channel, Nickelodeon and Paramount Comedy.

Virgin Channels

3.31 Top Up TV carries one channel fully owned by Virgin Media (Living) as well as three UKTV channels in the Top Up TV Anytime pay TV bundle: UKTV Gold, UKTV Style and UKTV Food.

VoD Services

3.32 As part of the new Anytime service Top Up TV launched the ‘Picture Box’ download-to-rent movie service (library films from Universal Studios). We understand that 1 movie is made available to subscribers each day (i.e. in total 7 movies can be accessed each week).

3.33 Anytime TV subscribers (i.e. customers who own an Anytime DVR set-top box and take a £9.99 month-by-month TV subscription) can subscribe to the Picture Box service for a £5 month-by-month fee.

3.34 Alternatively, owners of an Anytime DVR set-top box can just subscribe to the Picture Box service (i.e. without an Anytime TV subscription) for a £7 month-by-month fee (plus a one-off £20 connection fee).

DVR Services

3.35 Customers who purchase a Top Up TV Anytime box will have standard DVR functionality allowing them to record (1 programme and watch another), pause, forward and rewind programmes.

HD Services

3.36 There are no HD services available from Top Up TV and the Anytime STB is not HD ready.

Broadband and telephony products

3.37 No broadband or telephony services are available from Top Up TV.

## Sky Picnic

3.38 In February and October 2007[15], Sky announced that it intended to launch a new pay TV service on DTT, Picnic. Sky has suggested that Picnic would initially offer three video streams at any one time and would carry Sky Sports 1, Sky Movies and Sky One, Disney Playhouse and Discovery

[15] See: http://phx.corporate-ir.net/phoenix.zhtml?c=104016&p=irol-newsArticle_Print&ID=1057024&highlight=

3.39 Ofcom launched a consultation on the proposed Sky digital terrestrial television services[16] that closed on 14 December 2007.

## 2. Digital Satellite

## Sky Digital

### History

3.40 British Sky Broadcasting plc (Sky) was created in 1990 following the merger of British Satellite Broadcasting (BSB) and Sky Television plc (Sky).

3.41 Previously, BSB was created in 1986 by Granada, Pearson, Virgin and Amstrad, providing three satellite pay TV channels in the UK. Virgin and Amstrad subsequently withdrew from the consortium around the time of the licence awards. However, it wasn't until March 1990 that BSB launched its offerings, due to technical difficulties.

3.42 BSB eventually launched with five channels, The Movie Channel (which would later become one of Sky's movie channels after the merger), The Sports Channel (later Sky Sports 1), Galaxy (later, part of Sky One), The Power Station (later withdrawn) and Now (later, part of Sky News)

3.43 Sky Television originated in 1982 when News International took control of one of the earliest satellite television channels, Satellite Television UK (SATV) and renamed it "Sky Channel".

3.44 In 1988, the channel was re-launched as Sky Television on the Astra satellite system, which is still used for Sky's pay TV services today (although from different satellites).

3.45 In February 1989, Sky launched a four channel television package with Sky One, Sky News, Sky Movies and Eurosport (which was later withdrawn post-merger). Originally these channels were FTA, with Sky relying on advertising revenue.

3.46 Following heavy losses at BSB and Sky, a merger was agreed to form Sky in 1990.

3.47 In 1992, Sky signed exclusive live television rights with the FA Premier League. This marked a phase of significant growth in the company with eleven channels added to their portfolio in 1994-5, and led to a further extension to the Premier League rights in 1996.

3.48 Following the launch of Astra's new satellites, Sky launched its digital service in October 1998.

3.49 In 2001, Sky launched its new Sky+ set-top box, incorporating DVR functionality.

3.50 In 2002, Sky launched a joint bid with the BBC and Crown Castle (now National Grid Wireless) as a shareholder in the Freeview consortium for the DTT spectrum vacated by ITV Digital. The ITC awarded the spectrum to Freeview, but on condition that Sky did not control a DTT multiplex.

[16] See: http://www.ofcom.org.uk/consult/condocs/dtv/

3.51 In 2005, Sky acquired LLU broadband provider, Easynet, for £211m and launched Sky broadband.

3.52 In 2006, Sky launched its high definition (HD) services with 10 HD channels.

## Business overview

3.53 Sky and its subsidiaries provide the main pay TV and free-to-air (FTA) satellite offerings in the UK and Ireland, as well as a number of channels which are broadcast on the satellite platform on a FTA and pay TV basis. (Further details of Sky's "freesat from Sky" FTA product follow in the next section below).

3.54 Certain Sky pay TV channels are also supplied to cable operators for inclusion in their pay TV packages. Sky also retails some of its channels directly to Tiscali TV DSL subscribers. In addition, Sky currently makes three of its channels available FTA via the UK DTT platform (Freeview).

3.55 In October 2005, Sky acquired the broadband service provider Easynet and also launched Sky by Broadband, offering existing subscribers access to downloadable films and sports news clips over a broadband connection. The company has since launched a free broadband access service that is available to subscribers who are located in Sky's network area[17].

3.56 Sky is a vertically-integrated wholesale channel provider, platform service provider and retail service provider. Sky provides technical platform services (condition access, access control and EPG services) to its retail service business and third parties. NDS provides the encryption technology for the service is owned by News Corp, who also own c.39% of Sky[18].

3.57 The number of Sky subscribers and its financial performance is provided in Table 9.

**Table 9: Sky subscriber numbers and financial performance**

| Item | Year ending 30 June | | |
|---|---|---|---|
| | 2005 | 2006 | 2007 |
| Total number of DTH subscribers*<br>(DTH subscribers in Republic of Ireland) | 7,787,000<br>(363,000) | 8,176,000<br>(427,000) | 8,582,000<br>(497,000) |
| DTH Subscription revenues from the UK and Ireland | £2,968 m | £3,157 m | £3,406 m |
| Total revenues | £3,842 m | £4,148 m | £4,551 m |
| Programming expenses | £1,635 m | £1,599 m | £1,539 m |
| Total expenses | £3,020 m | £3,271 m | £3,736 m |
| Operating profit | £822 m | £877 m | £815 m |
| Annualised average revenue per DTH subscriber (for quarter 4 of each year) | Not available | £388 | £412 |

*Notes: *The Total DTH subscriber numbers cover subscribers in the UK and the Republic of Ireland, and Tiscali TV customers who subscribe to Sky Movies and Sky Sports channels.*
*Source: Sky 2007 and 2006 press releases on final results*

[17] Customers located outside of Sky's network area may still subscribe to broadband services.
[18] http://news.independent.co.uk/business/news/article2308440.ece

## UK coverage details

3.58 Around 98% of UK homes fall within the footprint of the Astra 2A satellite signal and therefore in theory can access satellite services via a rooftop dish, although some homes are unable to receive services due to specific local factors. Some homes may be unable to receive services due to planning restrictions (e.g. conservation areas, national parks, the Norfolk and Suffolk Broads, areas of outstanding natural beauty, listed buildings, some flats, and buildings over 15 metres high), however, it is difficult to estimate the impact of this as it depends on an application process to determine if issues exist for particular potential customers.

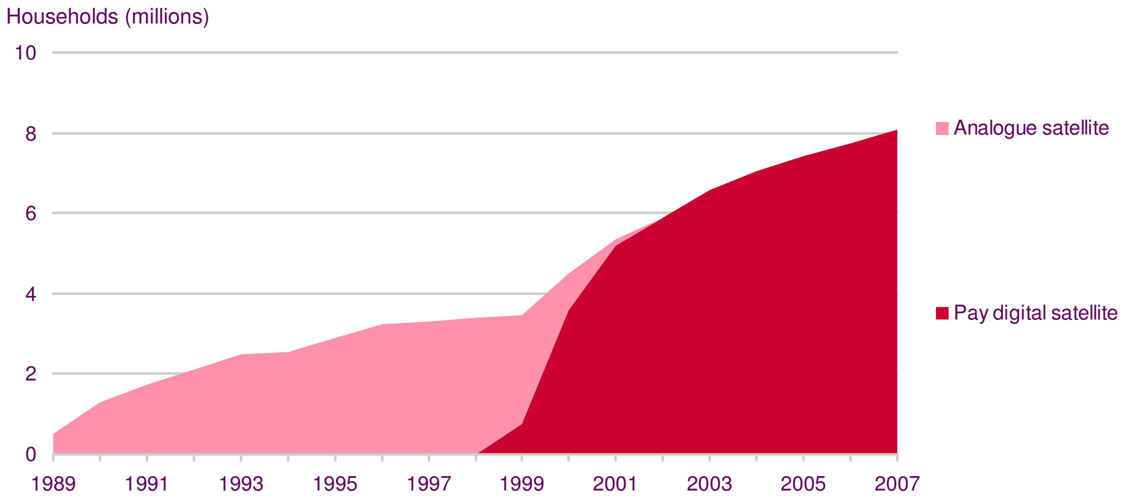
## Geographical issues

3.59 There are a wide range of FTA channels which have regional variants and all of these can be accessed by Sky Digital and Sky Freesat viewers. However, the RTE One, RTE Two and TG4 (Irish language) channels are included in Sky's Variety Mix but are only available to Sky Digital subscribers in Northern Ireland[19].

## Total subscribers per year

3.60 As at 30 June 2007 there were 8,085,000 Sky Digital subscribers in the UK (this data excludes Freesat customers, but includes Tiscali TV (formerly HomeChoice) customers). The total including Republic of Ireland is 8,582,000. Also by this date there were 3,406,000 cable subscribers in the UK taking Sky's channels[20]. Figure 10 below shows the number of Sky Digital and Freesat customer over time.

**Figure 10: Sky subscribers by year**




** These figures are for the UK exclude Sky's subscribers in the Republic of Ireland.*
*Source: Digital Television Updates, Ofcom.*

## Number of subscribers by package

3.61 Precise information on the number of subscribers to basic and premium pay TV packages is not publicly available.

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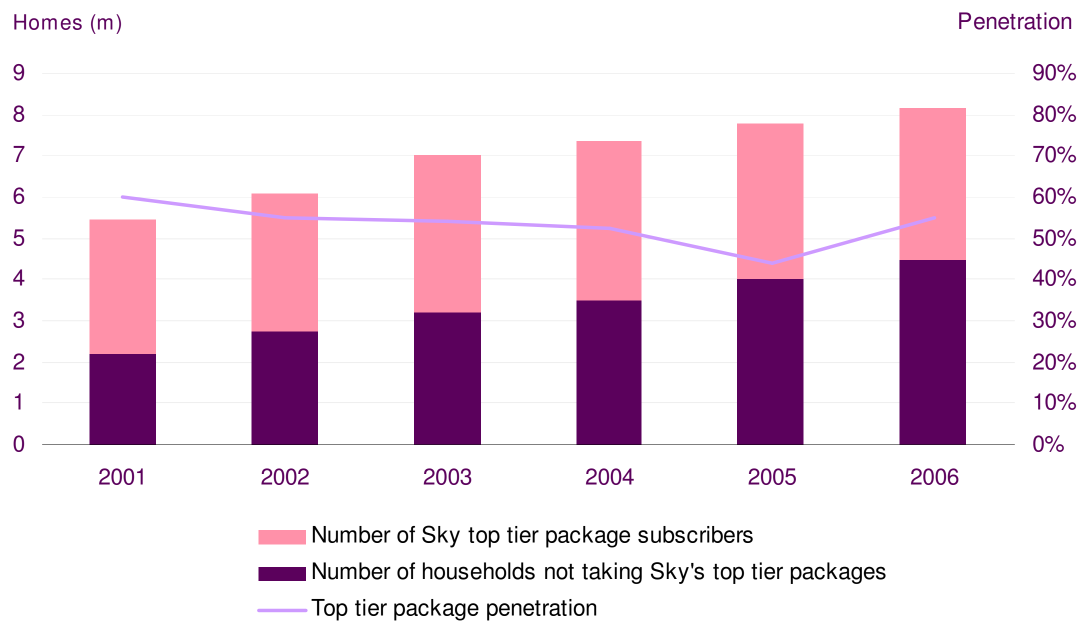
[19] Source: http://www.sky.com/portal/site/skycom/products/packages/variety.
[20] The source for the data is the published Sky results for the nine months ended 31 March 2007.

3.62 Figure 11 below shows the subscription levels for Sky's top tier pay TV channel package over time (i.e. all 6 basic pay TV channel package mixes, plus the Sky Sports and Sky Movies premium channel package mixes). It is apparent from Table 9 that the subscription levels for Sky's top tier pay TV channel package has been declining since 2003. In 2003, approximately 54% of Sky subscribers subscribed to the top tier package, yet in 2006 it was approximately 45%.

**Figure 11: Sky top tier[21] package subscription levels**




*Source: Sky US Securities and Exchange Commission Reports 2001 to 2006*

3.63 Table 10 shows the number of Sky Movie and Sports subscribers in UK and Ireland (including HomeChoice subscribers) over time. It is apparent from these tables that the number of Sky Movies subscribers has been relatively consistent since 2004 and Sky Sports has maintained growth each year since 2002. The proportion of subscribers taking both Sky Movies 1 and 2 has been over 95% since 2001; and the number taking both Sky Sports 1 and 2 has also been over 95%.

**Table 10: Number of Sky Movies and Sky Sports subscribers over time**

| As at 30 June | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|---|---|
| Number of subscribers to Sky Movies 1 or 2 [22] | 4.7m | 4.6m | n/a | 5.1m | 4.9m | 5m | 4,459,000 (Taking both 'Sky Movies') |
| Number of subscribers to Sky Sports 1 or 2 | 5.0 m | 4.8 m | 5.2 m | 5.5 m | 5.7 m | 5.8 m | 5,05m (Taking both 'Sky Sports') |

*Note: data relates to UK and Irish DSat and cable subscribers.*
*Source: Sky Securities and Exchange Commission reports 2001-2007.*

[21] By 'top tier' we mean the take up of Sky's 6 mix basic pay TV package (or historic equivalent) plus the premium packages containing all the Sky Movies and Sky Sports channels.
[22] Prior to 2003 the equivalent channels were Sky Movies Max and Sky Movies Premier.

## TV packages and other communication services provided

3.64 New customers subscribing to Sky's pay TV packages and choosing the standard STB will receive the box and installation for £30 when they sign on. New and existing customers can choose the Sky+[23] STB for £99 with installation of £30, or free installation if they subscribe to multiroom[24]. New and existing customers can choose the Sky HD box for £299 with installation of £30, or free installation if they subscribe to multiroom.

### Sky Digital Packages

3.65 Sky currently offers 6 mixes of basic pay TV channels which can be purchased in any combination. Once customers purchase a basic package, they have the ability to add on Sky's premium channel mixes. Table 11 below shows the monthly prices for the main combinations of Sky's basic and premium channel package mixes.

3.66 Table 12 below shows the number of basic pay TV channels and premium movies and sports channels available to Sky Digital subscribers.

3.67 Additionally, Sky retails a small number of non-Sky stand alone premium channels (e.g. MUTV). Third parties (such as Setanta and Zee TV also retail channels and packages to Sky Digital and Sky Freesat customers). When customers subscribe to a Sky pay TV package, they automatically receive all of the FTA channels also available on the DSat platform.

**Table 11: Monthly prices for Sky's basic and premium channel package mixes**

| Basic pay TV channel package mixes | Monthly fee | | | |
|---|---|---|---|---|
| | *Basic Mix* | *+ Sports Mix** | *+ Movies Mix** | *+ Sports and Movies Mix* |
| Any 1 mix | **£16** | + £18<br>= **£34** total | + £18<br>= **£34** total | + £25<br>= **£41** total |
| Any 2 mixes | **£17** | + £18<br>= **£35** total | + £18<br>= **£35** total | + £25<br>= **£42** total |
| Any 3 mixes | **£18** | + £18<br>= **£36** total | + £18<br>= **£36** total | + £25<br>= **£43** total |
| Any 4 mixes | **£19** | + £17<br>= **£36** total | + £17<br>= **£36** total | + £24<br>= **£43** total |
| Any 5 mixes | **£20** | + £17<br>= **£37** total | + £17<br>= **£37** total | + £24<br>= **£44** total |
| All 6 mixes | **£21** | + £17<br>= **£38** total | + £17<br>= **£38** total | + £24<br>= **£45** total |

*Source: Sky*
*Notes: *Smaller Premium Sports and Movies Packages are also available but the prices are not normally advertised by Sky.*

[23] Sky+ is a set-top box that has DVR functionality.
[24] Multiroom is where customers have additional STBs and duplicate pay TV subscriptions for other rooms in their house.

**Table 12: Number of channels available on Sky DSat by package**

| Sky channel package mixes | Channel count / package* |
|---|---|
| Variety** | 35 |
| Kids | 19 |
| Style & Culture | 21 |
| Knowledge | 22 |
| Music | 18 |
| News & Events*** | 12 |
| Sky Movies (Premium Movies^) | 16 |
| Sky Sports (Premium Sports^) | 6 |

***Source:*** *Sky website.*
**Includes HD and time-shifted channels and channels only available in Northern Ireland.*
*** Variety mix includes Sky Three which is available on a FTV basis.*
**** News & Events mix includes Sky News which is available on a FTA basis.*
*^ Premium refers to Sky premium channels only and the figures are inclusive of HD and simulcast channels. Figures exclude PPV, Adult, Ethnic and add-on channels.*

## Broadband and telephony products

3.68 From July 2006, Sky has offered broadband and telephony services to current and new subscribers. Customers can elect to take any of the basic TV package mixes and bundle this with Sky Talk (‘Freetime’ is free evening and weekend calls and/or ‘Unlimited’ which is free unlimited calls and free international calls to 10 destinations) and/or Sky Broadband (up to 2Mb is free, up to 8Mb at £5 per month and up to 16Mb at £10 per month). Customers still need a BT line at approximately £11 per month.

3.69 Sky TV package subscribers can also obtain broadband services separately from telephony services.

## Sky Broadband Products

3.70 As at 30 June 2007, Sky’s broadband network had reached 70% coverage of UK households. Sky has 716,000 active broadband customers (81% on Sky’s broadband network, i.e. ‘on-net customers’) and around 71% of the on-net customers are taking a paid-for product. Table 13 below outlines the broadband options available to Sky Digital subscribers.

**Table 13: Sky Broadband packages**

| Product | Download speed | Monthly usage cap | Activation fee | Monthly fee* |
|---|---|---|---|---|
| **Base** | Up to 2Mb | 2GB | £40 | Free |
| **Mid** | Up to 8Mb | 40GB | £20 | £5 |
| **Max** | Up to 16Mb | Unlimited (subject to fair use policy) | Free | £10 |
| **Connect** (for customers outside network area) | Up to 8Mb | 40GB | £40 | £17 |

** Customers must also pay BT for line rental*
*Source: Sky*

## Sky Talk Products

3.71 As at 30 June 2007, there were 526,000 Sky Talk customers. Table 14 below outlines the fixed-line telephone options available to Sky Digital subscribers.

### Table 14: Sky fixed-line phone packages

| Product | Service | Activation fee | Monthly fee* |
|---|---|---|---|
| **Sky Talk Freetime** | Free evening and weekend calls | N/A | Free |
| **Sky Talk Unlimited** | Free daytime, evening and weekend calls | N/A | £5 |

** Customers must also pay BT for line rental*
*Source: Sky*

## Channel ownership

3.72 Sky owns and also has significant shareholding interests in a number of channels. Table 15 below shows Sky's wholly owned and joint venture channels and their availability on the DSat platform.

### Table 15: Availability of Sky channels on DSat

| Channels | Genres | FTV/FTA | Basic Channels | | | | | | Premium | PPV |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Variety | Know. | Style & Culture | Kids | Music | News & Events | | |
| **Wholly Owned Sky Channels** | | | | | | | | | | |
| Sky Box Office | Movies | | | | | | | | | ✓ |
| Sky Movies Premiere | Movies | | | | | | | | ✓ | |
| Sky Movies Premiere +1 | Movies | | | | | | | | ✓ | |
| Sky Comedy | Movies | | | | | | | | ✓ | |
| Sky Action / Thriller | Movies | | | | | | | | ✓ | |
| Sky Family | Movies | | | | | | | | ✓ | |
| Sky SciFi / Horror | Movies | | | | | | | | ✓ | |
| Sky Classics | Movies | | | | | | | | ✓ | |
| Sky Indie | Movies | | | | | | | | ✓ | |
| Sky Modern Greats | Movies | | | | | | | | ✓ | |
| Sky Drama | Movies | | | | | | | | ✓ | |
| Sky Movies HD1 / SD1 | Movies | | | | | | | | ✓ | |
| Sky Movies HD2 / SD1 | Movies | | | | | | | | ✓ | |
| Sky News | News | ✓ | | | | | | ✓ | | |
| Sky One | Ent. | | ✓ | | | | | | | |
| Sky Sports 1 / HD1 | Sport | | | | | | | | ✓ | |
| Sky Sports 2 / HD2 | Sport | | | | | | | | ✓ | |
| Sky Sports 3 | Sport | | | | | | | | ✓ | |
| Sky Sports News | News | ✓ | | | | | | ✓ | | |
| Sky Sports Xtra | Sport | | | | | | | | ✓ | |
| Sky Three | Ent. | ✓ | ✓ | | | | | | | |
| Sky Travel | Lifestyle | | | | ✓ | | | | | |
| Sky Travel +1 | Lifestyle | | | | ✓ | | | | | |
| Sky Travel Extra | Lifestyle | | | | ✓ | | | | | |
| Sky Travel Shop | T/shopping | | | | ✓ | | | | | |
| Sky Two (formerly Sky One Mix) | Ent. | | ✓ | | | | | | | |
| Sky Vegas (formerly Sky Vegas 845) | Gambling / Quiz | | ✓ | | | | | | | |
| Skypoker.com (formerly Sky Vegas Live 2) | Gambling / Quiz | ✓ | | | | | | | | |
| Sky Arts (formerly Artsworld) | Specialist | | | | ✓ | | | | | |
| **Sky Joint Venture Channels (25% or greater interest)** | | | | | | | | | | |
| The History Channel / HD | Factual | | | ✓ | | | | | | |
| The History Channel +1 | Factual | | | ✓ | | | | | | |
| The Biography Channel | Factual | | | ✓ | | | | | | |
| Crime and Investigation Network | Factual | | | ✓ | | | | | | |
| National Geographic /HD | Factual | | | ✓ | | | | | | |
| National Geographic +1 | Factual | | | ✓ | | | | | | |
| Nat Geo Wild | Factual | | | ✓ | | | | | | |
| Attheraces | Sport | | | | | | | ✓ | | |
| Nickelodeon | Kids | | | | | ✓ | | | | |
| Nick Replay | Kids | | | | | ✓ | | | | |
| Nick JR | Kids | | | | | ✓ | | | | |

| Channels | Genres | FTV/FTA | Basic Channels | | | | | | Premium | PPV |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Variety | Know. | Style & Culture | Kids | Music | News & Events | | |
| Nick JR2 | Kids | | | | | ✓ | | | | |
| Nicktoons | Kids | | | | | ✓ | | | | |
| Chelsea TV | Sport | | | | | | | | ✓ | |
| MUTV | Sport | | | | | | | | ✓ | |
| Paramount Comedy 1 | Ent. | | ✓ | | | | | | | |
| Paramount +1 | Ent. | | ✓ | | | | | | | |
| Paramount Comedy 2 | Ent. | | ✓ | | | | | | | |

*Source: Sky website*

## Availability of Virgin Media TV channels

3.73 Table 16 below shows the availability of Virgin Media TV's channels on Sky Digital. This information includes the Sit-up teleshopping channels which are wholly owned by Virgin Media TV and the UKTV joint venture channels. All of Virgin Media's wholly owned and almost all joint venture channels are available on Sky Digital.

### Table 16: Availability of Virgin Media TV channels on Sky Digital

| Channels | Sky Basic Mixes | | | | | | FTA DSat |
|---|---|---|---|---|---|---|---|
| | Variety | Kids | Style & Culture | Know-ledge | Music | News & Events | |
| **Virgin Media TV** (these channels were previously branded under Flextech) | | | | | | | |
| Trouble | | ✓ | | | | | |
| Trouble +1 | | ✓ | | | | | |
| Bravo | ✓ | | | | | | |
| Bravo 2 | ✓ | | | | | | |
| Bravo +1 | ✓ | | | | | | |
| Living | ✓ | | | | | | |
| Living +1 | ✓ | | | | | | |
| Living 2 | ✓ | | | | | | |
| Challenge | ✓ | | | | | | |
| Challenge +1 | ✓ | | | | | | |
| Virgin 1( formerly Ftn) | ✓ | | | | | | |
| Virgin 1 +1 | ✓ | | | | | | |
| **Sit-up channels (A Virgin Media Company)** | | | | | | | |
| bid tv | | | | | | | ✓ |
| price-drop tv | | | | | | | ✓ |
| speed auction tv | | | | | | | ✓ |
| **Joint venture channels with BBC** | | | | | | | |
| UKTV Gold | ✓ | | | | | | |
| UKTV Gold +1 | ✓ | | | | | | |
| Dave (formerly UKTV G2) | ✓ | | | | | | |
| Dave +1 (formerly UKTV G2+1) | ✓ | | | | | | |
| UKTV Drama | ✓ | | | | | | |
| UKTV Drama +1 | ✓ | | | | | | |
| UKTV Documentary | | | | ✓ | | | |
| UKTV Documentary +1 | | | | ✓ | | | |
| UKTV People | | | | ✓ | | | |
| UKTV History | | | | ✓ | | | |
| UKTV History +1 | | | | ✓ | | | |
| UKTV Style | | | ✓ | | | | |
| UKTV Style +1 | | | ✓ | | | | |
| UKTV Style Gardens | | | ✓ | | | | |
| UKTV Food | | | ✓ | | | | |
| UKTV Food +1 | | | ✓ | | | | |

*Source: Sky website*

## Sky+

3.74 Sky+ is a specialist STB with an integrated personal video recorder (DVR) that allows customers to store up to 40 hours of recorded programmes and movies. Sky+ allows viewers to pause and rewind live TV, record entire series of programmes and remote record. Sky+ requires customers to purchase a Sky+ STB. At present, Sky Digital TV package subscribers don't have to pay a subscription fee for the Sky+ service (prior to 1 July 2007 customers had to pay a £10 per monthly Sky+ fee, unless they subscribed to Sky Sports and/or Sky Movies).

3.75 As at 30 June 2007, Sky reported that there are 2,374,000 Sky+ households (including HD subscribers).

## Video on Demand

### *Sky Box Office*

3.76 Sky Box Office (SBO) is a near video on demand pay-per-view service that offers access to a variety of movies, sporting events and concerts. Costs vary depending on the content purchased. According to Sky's published terms and conditions[25], Sky Box Office is only available to Sky Digital subscribers.

### *Sky Anytime*

3.77 Sky Anytime is a service available to Sky Digital subscribers and allows them to access content, pre-selected by Sky, via their TV, PC or Mobile. To access Sky Anytime from a TV, customers require a Sky TV subscription and Sky+ or Sky HD box. The content can then be accessed via the TV Guide button. To access Sky Anytime from a PC, customers need to download the application from the Sky website.

3.78 Since late 2005, Sky has provided a free broadband VoD service (originally branded as 'Sky by Broadband') to its Sky Sports and Sky Movies channel subscribers, whereby subscribers could download free Sky Sports and/or Movies content to their PC. In late 2006, Sky re-launched this PC download service[26] under the new 'Sky Anytime' brand and extended it to non-Sky Sports and Sky Movies channel subscribers on a download to rent and download to own basis.

3.79 With the new *'Sky Anytime on PC'* service, Sky Movies channel subscribers can download a large selection of movies to their PC for free, but some movies are only available on a rental basis (£3.95 per movie). Non-Sky Movies channel subscribers can only download movies to their PC on a rental basis (£3.95 per movie). All Sky Digital channel package subscribers can download television programmes to their PC on a download to rent (£0.50 to £1.50 per programme) and download to own (£2.50 per programme) basis. Non-Sky Sports channel subscribers can also access

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[25] "To purchase any Event, you must be a current subscriber under a Sky digital Subscription Contract."

[26] At the same time Sky re-launched their '*Sky By Mobile'* service under the *'Sky Anytime' brand.* The *'Sky Anytime on Mobile'* service allows Sky Movies 1&2 and/or Sky Sports 1&2 subscribers (Sky Bet customers can also access the service) to download certain content to a compatible 3G or GPRS mobile phone for free. This service should not be confused with the 'Sky Mobile TV' service which is provided via Vodafone and Orange (and there is no requirement to be a 'Sky Mobile TV' customer to receive the service). The content made available depends on the TV channels the customer subscribes to, e.g. only Sky Movies 1&2 subscribers can download movie content (i.e. film trailers and news about new film releases, but not actual films).

Sports content via their PC by paying a £5 monthly subscription fee (this content is available free to Sport Sports channel subscribers).

3.80 On 27 March 2007, Sky launched an additional Sky Anytime service ('Sky Anytime on TV') to Sky Digital subscribers with a Sky HD or Sky+[27] set-top box. With the 'Sky Anytime on TV' service a compatible set-top box will automatically record (over a number of days) up to 40 hours of content (a selection of TV programmes and certain films). Access to the recorded content is free, but the content made available is dependant on the packages the customer subscribes to. For example, only Sky Movies subscribers can get free access to films.

## Interactive services

3.81 Sky offers enhanced broadcast applications behind a number of Sky Channels, including Sky Movies Active (behind the movie channels), Sky Sports Active (behind the sports channels), Sky News Active (behind Sky News) and the interactive betting service available behind Sky Vegas 845 and Sky Vegas 846. In 2006, Sky reported to earn £91 million in Sky Active revenues (2005: £92 million).

3.82 Sky provides an interactive television platform which is used to deliver the interactive services of third parties in addition to their own. They currently own and operate five stand alone interactive portals on the DSat platform (including the main Sky Active portal). Sky Digital viewers can access these interactive services by means of either stand-alone portals (the Sky Active portal being one of them) or in conjunction with certain broadcast channels. Sky Active (in common with other stand alone interactive portals) is currently offered free of charge.

3.83 Sky derives revenues through interactive services principally from:

- premium rate telephone charges in connection with viewers' usage of services (such as pay-per-play games, voting and entries to quizzes);
- revenue sharing in e-commerce transactions (e.g. retailing or betting) completed on the platform;
- advertising; and
- tenancy and technology fees charged to content providers who offer services by means of the platform.

3.84 Third party channels (and third party stand alone interactive portals such as PlayJam, Teletext Holidays, Directgov, PlayMonteCarlo & Roulette and NHS Direct Interactive) make use of the interactive potential of the DSat platform. Third party broadcasters such as the BBC, ITV, Channel 4, five, Flextech, UK TV, Discovery, MTV, Nickelodeon, QVC, Cartoon Network, TV-X and the Disney Channel have launched interactive services on the Sky Digital, as have a number of third party providers of stand alone interactive services (which are separate from those offered in conjunction with any television channel). Third party channels may offer such interactivity in conjunction with Sky Interactive or provide their interactive services independently, including making use of competing interactive infrastructures connected to Sky Digital.

[27] The service is only compatible with the latest version of the Sky+ set-top box.

High Definition

3.85 Sky HD requires customers to purchase a Sky HD box and pay a monthly subscription of £10 per month to access the HD channels. The channels currently available on Sky HD are: Sky One HD, Sky Arts HD, National Geographic HD, Discovery HD, The History Channel HD, Sky Box Office HD, Sky Sports HD, Sky Movies HD (Movies and Sports only available to those who have a subscription to the channels). BBC HD is also available without a subscription and therefore can be received by Sky Freesat viewers that have purchased a HD set-top box (and have an HD TV).

- As at 30 June 2007, there are 292,000 Sky HD homes. Sky reports that its HD service has been their fastest-selling additional TV product to date.

## FTA on digital satellite and Freesat from Sky

3.86 FTA services on the digital satellite platform in the UK can generally be received by viewers using a compatible satellite dish and STB. This enables those viewers to receive over 200 FTA television channels and nearly 100 FTA radio stations.

3.87 Currently, the most popular way to purchase FTA digital satellite services in the UK is through Freesat from Sky, although dishes and STBs can also be purchased from other manufacturers and/or distributors.

3.88 Former Sky Digital subscribers who have retained their STBs and those households who have previously taken advantage of Sky's free "digibox" offer without also taking a Sky Digital subscription are also able receive the same FTA and FTV channels as Freesat from Sky customers.

### Freesat from Sky

3.89 New customers wishing to take-up Freesat from Sky only need to purchase a Freesat set-top box (STB) for £150 (including installation and viewing card for free-to-view (FTV) channels) from Sky. There is no ongoing monthly subscription.

3.90 All FTA channels are available to purchasers of a STB. The channel listing also includes a number of FTV channels. These channels are those that are broadcast free-to-air on DTT and do not require a subscription on DSat, but the channel has chosen to encrypt their channels on DSat using Sky's Conditional Access. These channels include Channel 4, Channel 4 +1, Five, Five US, Five US +1, Five Life, Five Life +1 and Sky Three.

3.91 There are also a number of additional channels available to customers that are not contained on the channel listing or EPG, but can be accessed manually by tuning the box. However, this requires consumers knowing how to complete this process.

### Additional services available to DSat FTA-only households

3.92 DSat FTA-only households can receive the Sky+ service if they purchase a Sky+ STB (currently costing £199) and pay a £10 monthly Sky+ subscription fee. Churners from Sky Digital who already have a Sky+ STB may also continue to use the Sky+ functionality for FTA satellite services by paying a £10 monthly subscription fee to Sky.

3.93 DSat FTA-only households with a Sky STB can access Sky Active, which is primarily a vehicle to provide customers with information on Sky packages, products, services and competitions; Sky Gamestar, which has a variety of games, quizzes and skills tests; and The Betting Zone, which offers consumers the opportunity to monitor sports news and results, and place bets. Access to these services is free, although there may be costs associated with some services.

3.94 DSat FTA-only households may purchase a Sky HD STB for £399, excluding installation and the cost of a viewing card (£20) where relevant. However, currently only the BBC HD and the Luxe TV HD services are FTA. Sky's subscription HD service is not available to Freesat from Sky customers or churners from Sky Digital, even if they have purchased a Sky HD set-top box and have an HD-compatible TV set. To receive these subscription HD channels (i.e. HD channels excluding the BBC HD and Luxe TV HD broadcasts) consumers must be (or become) a Sky Digital TV package subscriber, have the necessary equipment and pay the monthly HD service subscription fee.

## Comparison of DSat FTA and Sky Digital services

3.95 The section on Sky concludes with a summary and comparison of all the services available to Sky Digital customers. The information provided in Table 17 includes descriptions of the services and explains buy through conditions.

### Table 17: Summary of services available to Freesat from Sky and Sky Digital customers

| Services available | Household Type | |
|---|---|---|
| | DSat FTA-only households | Sky Digital subscriber |
| FTA and FTV channels | Over 200 FTA channels are available as well as FTV channels which require a viewing card, including *Channel 4, Five, Five Life, Five US and Sky Three.* | Over 200 FTA channels are available as well as FTV channels which require a viewing card, including *Channel 4, Five, Five Life, Five US and Sky Three.* |
| Basic pay TV channels | Sky News and Sky Three are marketed as being included in Sky's basic pay TV channel package mixes but Sky News is also available on a FTA basis, and Sky Three on a FTV basis to those with Sky viewing cards.<br><br>No other basic pay TV channels are available to DSat FTA-only households. | Up to 127 basic pay TV channels are available with Sky's Digital subscribers, including the Sky News and Sky Sports channels (i.e. a total of 127 basic pay TV channels are available to DSat subscribers taking all six of Sky's basic pay TV channel mixes). |
| Sky Premium Channels (i.e. Sky Sports and Sky Movies channels) | Not available | Yes, but extra cost per month per package.<br><br>Customers must subscribe to Sky's basic channel mixes to be eligible to subscribe to premium channels. |
| Other premium channels (i.e. MUTV, Chelsea TV, Disney Cinemagic, Music Choice Extra) | Not available | Yes, but extra cost per month per channel.<br><br>Customers must subscribe to Sky's basic channel mixes to be eligible to subscribe to premium channels. |
| Non-Sky pay TV channels and packages | Yes, households can contract directly with other retailers such as Setanta and Asia TV channels and must pay monthly subscription fee.<br><br>The viewing card for 'regionally encrypted' channels is used to view the encrypted Setanta and Asia TV channels. | Yes, but extra cost per month per channel or package. |
| Sky Box Office (near video on demand service on a PPV basis) | Not available | Yes, on pay-per-view basis.<br><br>Customers must subscribe to Sky's basic channel mixes to be eligible to use SBO. |

| Services available | Household Type | |
|---|---|---|
| | **DSat FTA-only households** | **Sky Digital subscriber** |
| Sky Anytime TV | Not available | At present, this service is only available to Sky Digital subscribers that have a HD set-top box. Must have HD subscription to receive any Sky Anytime HD content. |
| Sky Anytime PC | Not available | Access to content depends on the Sky Digital package the customer subscribes to:<br>- Sky Movies channel subscribers can download a large selection of movies to their PC for free, but some movies are only available on a rental basis (£3.95 per movie).<br>- Non-Sky Movies channel subscribers can only download movies to their PC on a rental basis (£3.95 per movie).<br>- All Sky Digital channel package subscribers can download television programmes to their PC on a download to rent (£0.50 to £1.50 per programme) and download to own (£2.50 per programme) basis.<br>- Non-Sky Sports channel subscribers can access sports content via their PC by paying a £5 monthly subscription fee<br>- Sky Sports channel subscribers can access sports for free. |
| Sky Anytime Mobile | Not available | The Sky Anytime Mobile service is only available to customers who subscribe to Sky Movies 1&2, Sky Sports or Sky Bet. To be able to receive the service subscribers must have a compatible 3G or GPRS mobile phone (but do not have to be a Sky Mobile TV customer).<br><br>Access to content is dependent on the Sky Digital package the customer subscribes to. For example, only Sky Movies subscribers can access movie content. |
| Basic set-top box | Freesat From Sky customers can purchase a STB for £150, and includes a mini dish, a remote control and an initial viewing card*. Standard installation of equipment is also included.<br><br>Other FTA satellite kits are available.<br><br>*A viewing card (which is some times referred to as a 'Solus' or 'Smart' card) is required to view regionally encrypted channels. At present a viewing card is needed to view the following channels: Channel 4, Five, Five Life, Five US and Sky Three. A replacement viewing card costs £20. | Equipment is free, but there is a one-off installation fee of £30. |
| Sky+ (personal video recorder service) | Can buy set-top box for £199 and must pay £120 for installation.<br><br>A £10 a month Sky+ subscription is required to use DVR features | Sky+ service is free.<br><br>Sky+ STB costs £99 and must pay a £30 installation fee (installation is free if a Sky “multiroom” subscription is taken). |
| Sky HD (high definition TV and personal video recorder service) | Can buy set-top box for £399 and must pay £120 for installation.<br><br>Only able to access FTA HD broadcasts "Sky digital and Sky HD subscriptions required for Sky HD programming".<br><br>A £10 a month Sky+ subscription is required to use DVR features | STB costs £299 and must pay £10 month HD service fee. Sky Digital and Sky HD are subscriptions required for Sky HD programming.<br><br>Must pay a £30 installation fee (installation is free if a Sky “multiroom” subscription is taken).<br><br>Sky+ service is free. |

| Services available | Household Type | |
|---|---|---|
| | **DSat FTA-only households** | **Sky Digital subscriber** |
| Sky Talk | Not available unless a Sky Digital subscriber | Sky Digital subscribers are able to obtain free evening and weekend calls. There is no activation fee or monthly fee for this service, but customers must have a BT landline and pay BT line rental at £11 per month.<br><br>Sky Digital subscribers can also obtain free daytime, evening and weekend calls. There is no activation fee for this service, but customers pay Sky a £5 fee per month. Customers must also have a BT landline and pay BT line rental at £11 per month. |
| Sky Broadband | Not available unless a Sky Digital subscriber | Sky Digital customers in Sky's network area can obtain free broadband service by paying a one-off activation fee of £40. Customers must have a BT landline and pay BT line rental at £11 per month. Services with faster broadband speeds are available from £5 to £10 per month.<br><br>Sky Digital customers outside Sky's network area can obtain an 'up to 8Mb' service by paying a one-off activation fee of £40 and a £17 fee per month. Customers must also have a BT landline and pay BT line rental at £11 per month. |
| Sky Multiroom (i.e. duplicate subscription and additional set-top box for the same household) | Not available unless a Sky Digital subscriber | £10 per month fee, plus additional equipment costs. |
| Sky Active (i.e. interactive services) | Not all services are available to DSat FTA-only households; some services require a Sky Digital subscription and/or a Sky box connection to phone line. | Access to content is dependent on the Sky DSat package the customer subscribes to. For example, only Sky Sports subscribers can access Sky Sports interactive services. |
| Sky Mobile TV (i.e. TV service via mobile phone) | Vodafone and Orange customers with compatible 3G mobile phones can subscribe to 'Sky Mobile TV' packages without subscribing to Sky Digital. However, the Sky Anytime Mobile service is only available to 'Sky Mobile TV' subscribers who also subscribe to Sky Movies 1&2, Sky Sports or Sky Bet. | Vodafone and Orange customers with compatible 3G mobile phones can subscribe to 'Sky Mobile TV' packages without subscribing to Sky Digital. However, the Sky Anytime Mobile service is only available to 'Sky Mobile TV' subscribers who also subscribe to Sky Movies 1&2, Sky Sports or Sky Bet. |
| Sky Bet (interactive gambling services via TV) | Not available. However, separate on-line gambling services are available anyone aged over 18. | Available to Sky Digital subscribers. |

*Notes: Prices are for the UK*
*Source: Analysis of terms and conditions for relevant Sky products. Terms and conditions are available at: http://mysky.sky.com/portal/site/skycom/home*

## 3. Digital Cable

### Virgin Media

### History

3.96 Although forms of cable television have been available since the 1930s, modern cable pay TV networks were created in the UK in the 1980s.

3.97 The first cable television licence was awarded in 1984 to Swindon Cable, which saw regional cable franchises be set up around the UK, including Croydon Cable, which later developed through consolidation into Telewest.

3.98 In 1991, cable television companies were permitted to offer telephony as part of their offerings alongside their television packages. However, it wasn't until the development of broadband cables and consolidation in the cable market in the mid-90s that cable companies could expand their coverage to compete with Sky.

- In 1993, International CableTel was set up after acquiring local franchises in the UK. Three years later, CableTel acquired National Transcommunications network (NTL) and adopted their new name.

- In 1999, NTL acquired Cable & Wireless's UK cable operations.

- Both NTL and Telewest launched digital television services in 1998.

- Telewest acquired content producer, Flextech in April 2000.

- In 2005, majority shareholder, Telewest acquires sit-up tv, which owned several auction channels including bid tv and price-drop tv

3.99 However, following the collapse of world telecommunications markets in 2000, both NTL and Telewest experienced financial problems.

- NTL sought Chapter 11 bankruptcy protection in the US in April 2002, only re-emerging from protection in January 2003.

- Having accrued large debts as a result of its network construction and acquisitions, Telewest restructured itself through a debt-for-equity swap in 2004.

3.100 Following the restructuring of both companies, NTL announced the acquisition of Telewest for US$6 billion in October 2005. The merger completed in March 2006, creating ntl:Telewest.

3.101 Not long after, ntl:Telewest announced the acquisition of Virgin Mobile in April 2006, the merger completing in July 2006. This created the UK's first 'quadruple play' media company, offering television, broadband, fixed and mobile telecoms services.

3.102 Following the merger, ntl:Telewest agreed terms with Virgin Group to license the Virgin brand, and renamed itself Virgin Media from November 2006

3.103 In November 2006, Virgin Media announced it was in talks to acquire ITV plc. It withdrew the bid following Sky's acquisition of 17.9% of ITV.

### Business overview

3.104 When ntl:Telewest acquired Virgin Mobile, this provided customers in the UK with their first opportunity to buy a quadruple-play product of TV, internet, and fixed and mobile telephony services from a single operator. In February 2007, ntl:Telewest re-branded as 'Virgin Media' and existing customers of ntl:Telewest were transferred to Virgin Media packages.

3.105 Virgin Media is a vertically integrated wholesale channel provider, platform service provider and retail service provider. Data on the company's financial performance is provided in Table 18 below.

**Table 18: Virgin Media's financial performance**

| Item | Year ending 31 December | |
|---|---|---|
| | 2005 | 2006 |
| Cable segment revenues* | £1,948m | £3,007m |
| Total revenues | £1,948m | £3,602m |
| Total expenses | £1,967m | £3,592m |
| Operating profit / loss | £(19.7)m | £9.8m |
| ARPU (monthly cable average revenue per user) | £38.96 | £42.82 |

*Notes: *includes the distribution of television programming over the cable network and the provision of broadband services and fixed telephone services to consumers, business and public sector organisations, both on and off the cable network.*
*Source: Virgin Media Annual Report 2006*

## UK coverage details

3.106 Virgin Media's digital cable network is estimated to have 47% coverage of UK homes (mainly within urban areas). A further 3% of UK homes are able to receive analogue cable.

3.107 Virgin Media controls the majority of the UK's cable network areas. The areas outside of its control are the Isle of Wight (which is controlled by Wight Cable) and the West of Scotland and the North West of England (which are controlled by Smallworld, formerly Wight Cable North).

3.108 In April 2007, Virgin Media launched a 'free TV' service to UK consumers in non-cable areas. With this service, consumers are provided with a DTT set- top-box which is capable of receiving all of the Freeview channels and is programmed with a Virgin Media branded EPG menu. The DTT set-top box is provided free to non-cable customers who subscribe to the Virgin Media 8Mb broadband and Talk Anytime bundle at £19.99 per month. However, non-cable customers who only subscribe to a Virgin Media broadband service have to pay a one-off fee of £40 for the set-top box.

3.109 Table 19 below highlights the Virgin Media channels which are subject to regional availability. Precise details of the regional restrictions are not known.

**Table 19: Virgin Media channels subject to regional availability**

| Channel name | Package | | |
|---|---|---|---|
| | M | L | XL |
| Bliss | | | ✓ |
| Bloomberg | | | ✓ |
| Challenge+1 | | ✓ | ✓ |
| Classic FM TV | | | ✓ |
| Deutsche Welle | | | ✓ |
| Extreme Sports | | | ✓ |
| Flaunt | | | ✓ |
| History Channel+1 | | | ✓ |
| Leonardo | | | ✓ |
| More4+1 | | ✓ | ✓ |
| Motors TV | | | ✓ |
| National Geographic+1 | | | ✓ |
| Scuzz | | | ✓ |
| UKTV Documentary+1 | | ✓ | ✓ |
| UKTV Food+1 | | ✓ | ✓ |
| UKTV History+1 | | ✓ | ✓ |

*Source: http://allyours.virginmedia.com/html/sorter/channels_sizexl.html*

## Total subscribers per year and homes passed

3.110 Table 20 below shows the total number of Virgin Media subscribers and homes capable of receiving cable TV over time.

**Table 20: Virgin Media total subscribers per year and homes passed**

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|
| Subscribers | 3.6 | 3.4 | 3.3 | 3.3 | 3.2 | 3.3 |
| Homes passed | 12.4 | 12.4 | 12.5 | 12.6 | 12.6 | 12.5 |

*Note: Figures represent millions of homes*
*Source: Virgin Media and ntl:Telewest Annual Reports*

3.111 As of 31 December 2006 Virgin Media provided cable television services to approximately 3.3 million residential customers. Approximately 0.3 million of these customers are receiving analogue services.

## Number of subscribers by package

3.112 Precise information on the number of subscribers to basic and premium pay TV packages is not publicly available.

3.113 However, according to Virgin Media's 2006 annual report, as at December 31 2006, more than 75% of Virgin Media's residential on-net customers received multiple services and approximately 41% of the on-net customers received "triple-play'' services.

# TV packages and other communications services provided

## Digital cable

3.114 Virgin Media currently offers three pay TV packages: Size:M, Size:L and Size:XL. In order to receive TV services from Virgin Media, consumers must also take broadband and/or land line telephony services. The Size:M TV package is free when a consumer takes the minimum phone package at £11 per month (includes free weekend calls). Excluding Virgin Media's compulsory land line rental costs of £11 per month, the Size:L TV package is £11.50 per month and the Size:XL TV package is £20.50 per month. Customers receive a free set-top box when they subscribe to a pay TV service (but must pay a £25 installation fee) and have the option to upgrade to a V+ STB.

3.115 Virgin Media customers can subscribe to the range of Sky Sports and Movie premium channels and other individual or packaged channels including Asian, Sports, Kids and Adult. Prices for Sky Movies and Sports channel packages vary depending on which Virgin Media package customers subscribe to. Other individual channel prices range from £3.50 to £17 per month.

3.116 Table 21 below outlines the main TV, broadband and telephony bundles available from Virgin Media.

**Table 21: Virgin Media TV, broadband and telephony package fees**

| Virgin Media package | Standard installation fee | Monthly subscription fee | Monthly landline rental fee |
|---|---|---|---|
| Size:M TV, 2Mb broadband and free weekend calls (2 for £20 + free TV bundle) | £25 | £20 | Included in monthly subscription fee |
| Size:L TV and free weekend calls (2 for £20 bundle) | £25 | £20 | Included in monthly subscription fee |
| Size:L TV and 2Mb broadband (2 for £25 bundle) | £25 | £25 | Not included |
| Size:L TV, 2Mb broadband and free weekend calls (3 for £30 bundle) | £25 | £30 | Included in monthly subscription fee |
| Size:L TV, 2Mb broadband, free weekend calls and Virgin Mobile SIM (4 for £40 bundle) | £25 | £40 | Included in monthly subscription fee |

*Notes: prices shown are for product bundles and exclude on-line discounts*
*Source: Virgin Media website*

3.117 Table 22 below outlines the equipment and installation costs for consumers subscribing to a Virgin Media digital pay TV package.

**Table 22: Equipment and installation costs**

| | Virgin Media equipment costs | |
|---|---|---|
| | **V Set-top Box** | **V + Set-top Box**[28] |
| **One off cost** | N/A* | N/A* |
| **Installation** | £25 | £150 |
| **Subscriptions** | Free | £5 per month for Size M and L subscribers<br>No monthly fee for XL subscribers |

**Virgin Media set-top boxes are leased to subscribers*
*Source: Virgin Media website*

## Analogue cable

3.118 Precise details on the TV packages and channels which are available to analogue cable customers are not known. According to Virgin Media's 2006 Annual Report their analogue TV packages offer up to 60 channels and includes the Virgin Media Television channels and the UKTV joint venture channels. According to Sky's 2007 Annual Report, the only Sky channels available to analogue cable customers are the Sky Sports premium channels.

[28] V+ is Virgin Media's equivalent service to Sky+ and Sky+ HD. V+ allows subscribers to record 2 programmes simultaneously and watch a third (Sky+ allows you to record 2 programmes but you must watch one of them) and pause / rewind live TV.

## Availability of Sky's channels

3.119 Due to the current commercial dispute between Virgin Media and Sky over the cost of channel carriage of Sky channels on cable, there are no Sky basic channels contained in the three Virgin Media packages. However, Virgin Media digital pay-TV customers can still subscribe to the Sky Sports and Sky Movies premium channels. Table 23 shows the Sky channels which were previously available in Virgin Media's packages (shown by the ☑ symbol) and the Sky wholly owned and joint venture channels which are still available (shown by the ✓ symbol).

**Table 23: Sky channel availability on Virgin Media (digital cable)**

| Channels | Virgin Media Packages | | | Premium |
|---|---|---|---|---|
| | M | L | XL | |
| Sky Movies 1 | | | | ✓ |
| Sky Movies 2 | | | | ✓ |
| Sky News | ☑ | ☑ | ☑ | |
| Sky One | ☑ | ☑ | ☑ | |
| Sky Sports 1 | | | | ✓ |
| Sky Sports 2 | | | | ✓ |
| Sky Sports 3 | | | | ✓ |
| Sky Sports News | ☑ | ☑ | ☑ | |
| Sky Sports Xtra | | | | ✓ |
| Sky Three | | | | |
| Sky Travel | | ☑ | ☑ | |
| Sky Travel +1 | | | | |
| Sky Travel Extra | | | ☑ | |
| Sky Travel Shop | | | | |
| Sky Two (formerly Sky One Mix) | | ☑ | ☑ | |
| Sky Vegas 845 (formerly Sky Vegas Live) | | | | |
| Sky Vegas 846 (formerly Sky Vegas Live 2) | | | | |
| Artsworld | | | | |
| **Sky joint venture channels (25% or greater interest)** | | | | |
| The History Channel | | | ✓ | |
| The History Channel +1 | | | ✓ | |
| The Biography Channel | | | ✓ | |
| Crime and Investigation Network | | | ✓ | |
| National Geographic | | | ✓ | |
| National Geographic +1 | | | | |
| Nat Geo Wild | | | ✓ | |
| Attheraces | ✓ | ✓ | ✓ | |
| Nickelodeon | | ✓ | ✓ | |
| Nick Replay | | | ✓ | |
| Nick JR | | | ✓ | |
| Nick JR2 | | | | |
| Nicktoons | | | ✓ | |
| Chelsea TV | | | | |
| MUTV | | | | |
| Paramount Comedy 1 | | ✓ | ✓ | |
| Paramount +1 | | | | |
| Paramount Comedy 2 | | | ✓ | |

*Source: Virgin Media website*

## Virgin Media Channels

3.120 Virgin Media owns and also has a 50% shareholding in number of channels. Table 24 below shows Virgin Media's wholly owned and joint venture channels and their availability on the cable platform.

## Table 24: Virgin Media TV channels

| Channel | Virgin Media packages | | |
|---|---|---|---|
| | M | L | XL |
| **Virgin Media TV** | | | |
| Trouble | | ✓ | ✓ |
| Trouble +1 | | ✓ | ✓ |
| Bravo | | ✓ | ✓ |
| Bravo 2 | | ✓ | ✓ |
| Bravo +1 | | ✓ | ✓ |
| Living | | ✓ | ✓ |
| Living +1 | | ✓ | ✓ |
| Living 2 | | ✓ | ✓ |
| Challenge | | ✓ | ✓ |
| Challenge +1 | | ✓ | ✓ |
| Virgin 1(formerly Ftn) | ✓ | ✓ | ✓ |
| Virgin 1 +1 | ✓ | ✓ | ✓ |
| **Sit-up (A Virgin Media Company)** | | | |
| bid tv | ✓ | ✓ | ✓ |
| price-drop tv | ✓ | ✓ | ✓ |
| speed auction tv | ✓ | ✓ | ✓ |
| **UKTV joint venture with BBC** | | | |
| UKTV Gold | | ✓ | ✓ |
| Dave (formerly UKTV G2) | ✓ | ✓ | ✓ |
| Dave +1 (formerly UKTV G2+1) | ✓ | ✓ | ✓ |
| UKTV Gold +1 | | ✓ | ✓ |
| UKTV Drama | | ✓ | ✓ |
| UKTV Drama +1* | | | |
| UKTV Documentary | | ✓ | ✓ |
| UKTV Documentary +1* | | ✓ | ✓ |
| UKTV People | | ✓ | ✓ |
| UKTV History | ✓ | ✓ | ✓ |
| UKTV History +1 | | ✓ | ✓ |
| UKTV Style | | ✓ | ✓ |
| UKTV Style +1 | | ✓ | ✓ |
| UKTV Style Gardens | | ✓ | ✓ |
| UKTV Food | | ✓ | ✓ |
| UKTV Food +1 | | ✓ | ✓ |

*Source: Virgin Media website*

## VoD services

*Virgin TV on demand*

3.121 In February 2007, the ‘ntl:OnDemand’ and ‘Telewest Teleport’ VoD services were rebranded as ‘Virgin TV on demand’. The VoD film service is provided by Filmflex Movies Limited[29].

3.122 The ‘Virgin TV on demand’ service is available to Virgin TV package subscribers in digital cable areas. The VoD fees and content available is highlighted in Table 25 below.

[29] A joint venture between Sony Pictures Television International, Walt Disney Television International and the On Demand Group Limited.

**Table 25: VoD service availability and cost**

| Content Service | Cost | Choice |
|---|---|---|
| Movies on demand | From £1.50 to £3.75 per 24-hour viewing | 500 films |
| Music on demand | From £0.20 per 24-hour viewing | 1000 music videos |
| TV Choice on demand | £5 a month for Size:M and Size:L TV package subscribers<br>Free to Size:XL TV package subscribers | Access to popular TV programmes |
| Catch up TV on demand | Free | Virgin Media's pick of TV programmes from last 7 days |

*Source: Virgin Media website*

*Virgin Central*

3.123 The 'Virgin TV on demand' service should not be confused with the 'Virgin Central' service. 'Virgin Central' is a VoD service that is accessed via the EPG as a channel (currently channel 119) and provides free on-demand access to 6 TV programmes (but not films).

## Interactive Services

3.124 Certain enhancements to Sky's channels available on other platforms are not available on Virgin Media's platform, including HD content and "red button" functionality.

## DVR and HD Services

*V+ Service*

3.125 Virgin Media's V+ set-top box provides DVR functionality and is capable of receiving HD TV services. The DVR functionality allows viewers to pause and rewind live TV, and record two programmes at the same time while watching a third.

3.126 High Definition (HD) programmes and movies are available from the Virgin TV on demand service. However, according to the Virgin Media website, the only linear channel available which broadcasts HD programmes is the BBC.

3.127 There is a £150 installation fee for the V+ set-top box. Size M and L subscribers must pay an additional £5 monthly subscription for the service.

## Broadband and telephony products

3.128 As outlined above, in order to receive TV services from Virgin Media, consumers must subscribe to broadband and/or land line telephony products.

3.129 Table 21 above highlights the main TV, broadband and telephony package options available from Virgin Media.

# 4. IPTV

## BT Vision

### History

3.130 BT Vision was launched in December 2006, providing a hybrid DTT/IPTV/DVR offering.

## Business overview

3.131 BT's hybrid DTT/IPTV digital TV service 'BT Vision' was launched in early December 2006. In addition to being able to view Freeview channels, BT Vision customers can access a variety of content on a VoD rental or subscription basis.

3.132 BT Vision is only available to customers who have or sign up to a BT broadband product. In order to receive the BT Vision VoD service a consumer must buy the specialist set-top box (branded as the 'V-box') that has a Freeview digital receiver and 80 hours storage capacity as a DVR.

UK coverage details

3.133 BT Vision's VoD services are available to all consumers that are able to receive broadband services from BT.

3.134 The availability of Freeview channels depends on whether customers live in an area capable of receiving DTT. At least 73% of UK homes have access to DTT[30].

Geographical issues

3.135 It would appear that there are no regional variations for the VoD and subscription VoD content provided by BT Vision. Information on the regional availability of Freeview channels is provided in Table 6.

Total subscribers per year and homes passed

3.136 BT Vision has reported c.60,000 customers as of 31 October 2007[31].

Number of subscribers by package

3.137 Information on the number of subscribers to BT Vision subscription video on demand packages is not available.

Equipment and installation costs

3.138 Table 26 highlights the equipment and installation costs for the BT Vision service.

[30] See http://www.ofcom.org.uk/research/cm/nations/nations_regions/nations_regions.pdf
[31] http://www.btplc.com/news/articles/showarticle.cfm?articleid=%7b790b87ac-792a-4abc-ab24-9a7bef5620b7%7d#

**Table 26: BT Vision equipment and installation costs**

| **BT broadband customers** | |
|---|---|
| BT Vision V-box (includes free BT Home Hub wireless router for BT Total Broadband Option 2 and 3 customers) | Free |
| BT Home Hub – only required to purchase this if signed up to BT Broadband Option 1 | £30 (internet order) or £50 (phone order) |
| Installation fee | £N/A |
| Connection fee | £30 |

*Source: BT Vision website (August 2007)*

### TV packages and other communications services provided

Sky Channels

3.139 No Sky channels are available to BT Vision customers other than those available through Freeview.

VoD Services

3.140 The TV service provided by BT Vision is an on demand service. In addition to the Freeview channels, customers can access a range of TV shows, films, sports, music and kids content on a pay-per-view basis. Films start from £1.99, music videos from 29p, TV programmes from 79p and kids shows from 49p.

3.141 BT Vision also offers customers several subscription video on demand packs: Kid's shows, Music Videos or TV packs cost £6 per month or TV Show and TV Replay for £9 per month. Customers can take all these subscription packs for £14 per month. Customers can also subscribe to the BT Vision Sports pack (which includes the Setanta Sports DTT channel and near live Premier League football match content) for £12 per month. All subscriptions are on a month-by-month basis.

Interactive Services

3.142 BT Vision offers a range of interactive games.

DVR Services

3.143 The BT Vision STB has DVR functionality with 80 hours of storage available.

HD Services

3.144 The BT Vision box is HD-compatible. However, BT Vision is not currently providing any HD VoD content.

Broadband and telephony products

3.145 In order to obtain TV services from BT Vision customers must obtain land line telephony and broadband services from British Telecom. In order to use the BT Vision on demand services, a minimum broadband speed of 2Mb is required.

3.146 BT does not currently offer packages of TV, broadband and telephony products; each product must be subscribed to individually.

3.147 Table 27 and Table 28 below highlight the main broadband and land line telephony products available from BT.

**Table 27: BT's main broadband products**

| Product name | Broadband speed | Standard monthly fee | Monthly download allowance | Equipment costs |
|---|---|---|---|---|
| Option 1 | Up to 8Mb | £17.99 | 5GB | The BT Home Hub costs £30 if ordered on-line or £50 ordered via the telephone. The BT Home Hub phone costs £49.99. |
| Option 2 | Up to 8Mb | £22.99 | 8GB | The BT Home Hub is free if ordered on-line, but costs £25 if ordered via the telephone. The BT Home Hub phone costs £49.99. |
| Option 3 | Up to 8Mb | £24.99 | Unlimited | The BT Home Hub and Home Hub Phone are free. |

*Source: BT Total Broadband website*

**Table 28: BT's main land line telephony products**

| Product name | Main features | Monthly product fee | Monthly line rental fee |
|---|---|---|---|
| Option 1 Hour Plan | 4.5p for evening and weekend calls of up to an hour. | Free | £10.50 to £12.50 |
| Option 2 Evening and Weekend Plans | Free evening and weekend calls of up to an hour. | £3.45 | £10.50 to £12.50 |
| Option 3 Anytime Plan | Free daytime, evening and weekend calls of up to an hour. | £7.95 | £10.50 to £12.50 |

*Source: BT Together website*

## Tiscali TV (formerly Homechoice) and Sky by Wire

### History

3.148 Homechoice was launched by Video Networks Limited in September 2000, taking advantage of local loop unbundling to offer IPTV (both linear and video on demand), telephony and broadband products to residential customers in certain areas of the UK.

3.149 It was bought by internet service provider, Tiscali UK, in August 2006, and subsequently rebranded Tiscali TV in March 2007 and is currently expanding its coverage across the UK.

### Business overview

3.150 Tiscali is a UK-based telecommunications company, owned by Tiscali SpA. In August 2006, Tiscali acquired Video Networks Limited (VNL), the operator of the

IPTV service originally known as ‘Homechoice’. On 1 March 2007 Homechoice was rebranded as Tiscali TV[32].

3.151 Tiscali is a vertically integrated platform service provider and retail service provider. Tiscali’s main product offerings are fixed line telephony services, broadband internet services and IPTV services.

3.152 Sky has continued its commercial arrangement (previously with Homechoice) with Tiscali TV, whereby certain Sky Sports and Sky Movies channels are retailed to Tiscali subscribers. Sky branded this premium pay TV service as ‘Sky by Wire’.

UK coverage details

3.153 Originally serving parts of London, Surrey and Hertfordshire, Tiscali has been rolling out its offering to other parts of the UK. Parts of central, northern and north east England and Lower Scotland can now also receive Tiscali TV. Tiscali reports it aims to have a reach of over 10 million homes by the end of 2008.

Total subscribers per year and homes passed

3.154 Tiscali TV currently has around 36,000 subscribers[33] and plans to extend its service availability to over 10 million UK homes by the end of 2008[34]. Table 29 below shows the number of Tiscali TV subscribers (and homes capable of receiving the service) over time.

**Table 29: Tiscali TV (formerly HomeChoice) subscribers and homes passed by year**

| | 2004 | 2005 | 2006 |
|---|---|---|---|
| Subscribers (m) | 0.02 | 0.03 | 0.05 |
| Homes Passed (m) | 1.3 | 2.4 | 2.4 |

*Notes:* These figures were for HomeChoice only*
*Source: Digital Spy*

Number of subscribers by package

3.155 Information on the number of Tiscali TV subscribers by pay TV package and by Sky by Wire premium packages is not publicly available.

## TV packages and other communications services provided

3.156 For new customers, Tiscali offers two main TV packages with land line and broadband services: the Variety TV pack and the Variety TV pack plus the Entertainment Xtra Mix. The monthly price of these packages varies depending which broadband option is taken, but ranges from £14.99 per month to £30.99 per month. The cheapest package with the Variety TV pack costs £14.99 per month and includes 2Mb broadband. The cheapest package for the Variety TV pack and the Entertainment Xtra Mix costs £1999 per month and includes 8Mb broadband.

[32] The rebranded HomeChoice TV service should not be confused with the TV service which is streamed by Tiscali over the internet, i.e. the service available at: http://www.tiscali.co.uk/broadband/tv/tiscali_tv.html
[33] See http://investors.tiscali.com/tiscali/uploads/press/pressrelease3Q07_ENG.pdf
[34] See http://www.digitalspy.co.uk/cable/a42437/tiscali-tv-to-launch-march-1.html

3.157 All Tiscali TV customers can choose to subscribe to a range of premium channels including all the Sky Sports channels and some Sky Movies channels. In addition, customers can choose to subscribe to other stand alone channels or packages of channels (i.e. Kids Mix, Music Mix, Zee TV, etc). The prices for premium and other additional channels vary from £6 to £30 per month.

3.158 Some Tiscali customers may still be signed up to former HomeChoice packages. Two TV packages have been offered in combination with broadband: the Base and Big packs. In order to receive TV services from Tiscali consumers must also take broadband services and have a BT or Tiscali land line. The monthly price of Base and Big packs varies depending which broadband option is taken, but ranges from £14.99 per month to £29.99 per month. The most basic package includes 2Mb broadband and the Base TV Pack and costs £14.99 per month and the most expensive package includes Tiscali Max broadband, free weekend talk time (including line rental) and the Big TV pack for £29.99 per month. These packages are no longer available for new supply.

3.159 Table 30(a) and (b) below shows the installation and monthly costs for the main Tiscali TV, broadband and telephony package options.

**Table 30(a): Tiscali TV, broadband and telephony package fees (new customers)**

| Package type | Standard installation fee | Monthly subscription | Landline telephony services offered by Tiscali |
|---|---|---|---|
| 2Mb broadband, landline & Variety pack TV | £30 | £19.99 | Free weekend calls<br><br>Extra £7.99 per month for free unlimited land line calls |
| 8Mb broadband, landline & Variety pack TV | £30 | £24.99 | Free Anytime land line calls |
| 2Mb broadband, landline & Variety pack TV, plus Entertainment Xtra Mix | £30 | £25.99 | Free weekend calls<br><br>Extra £7.99 per month for free unlimited land line calls |
| 2Mb broadband, landline & Variety pack TV, plus Entertainment Xtra Mix | £30 | £30.99 | Free Anytime land line calls |

*Notes: *Free weekend calls included with Tiscali line rental fee. Extra £7.99 per month for free unlimited land line calls.*
*Source: Tiscali website (October 2007)*

**Table 30(b): Tiscali TV, broadband and telephony package fees (legacy HomeChoice packages)**

| Package type | Standard installation fee | Monthly subscription | Monthly landline rental fee* |
|---|---|---|---|
| 2Mb broadband & Base pack TV | £30 | £14.99 | Approx. £11 from BT<br>£10. from Tiscali |
| 2Mb broadband & Big pack TV | £30 | £24.99 | Approx. £11 from BT<br>£10. from Tiscali |
| 8Mb broadband & Base pack TV | £30 | £17.99 | Approx. £11 from BT<br>£10. from Tiscali |
| 8Mb broadband & Big pack TV | £30 | £27.99 | Approx. £11 from BT<br>£10. from Tiscali |
| 8Mb broadband, free weekend calls & Base pack TV | £30 | £19.99 | Tiscali landline rental included |
| 8Mb broadband, free weekend calls & Big pack TV | £30 | £29.99 | Tiscali landline rental included |

*Notes: *Only available when Tiscali is the provider for land line telephony services. Free weekend calls included with Tiscali line rental fee. Extra £7.99 per month for free unlimited land line calls.*
*Source: Tiscali HomeChoice website (August 2007)*

## Tiscali TV's Channels

3.160 Tiscali does not own or operate any linear TV channels, but does operate a range of VoD services. Table 31 below outlines these VoD services and their availability by pay TV package.

**Table 31: VoD service brands owned by Tiscali TV by package**

| VoD services | Package | | | | |
|---|---|---|---|---|---|
| | Base* | Big* | Variety* | Entertainment Xtra* | Other packages |
| C1 | | ✓ | | ✓ | |
| C2 (now part of C1) | | ✓ | | ✓ | |
| Movies Now | | | | | ✓ |
| Screenies | | | | | ✓ |
| Taste V:Mx | ✓ | ✓ | ✓ | ✓ | |
| V:MX collection | | | | | ✓ |
| Scamp | | | | | ✓ |
| Club Zebra | ✓ | ✓ | | | |

*Notes: *Package availability appears to depend on whether the subscriber has a legacy HomeChoice package or a new Tiscali package*
*Source: Tiscali website*

## Other operators' channels

3.161 Table 32 below shows the Sky and Virgin Media channels which are available to Tiscali TV subscribers. The table shows that no wholly owned Virgin Media basic pay TV channels are currently available, but most of Virgin Media's joint venture channels are. All Sky Sports premium channels and a limited number of Sky Movies premium channels are available.

3.162 Newer Tiscali TV boxes contain a DTT receiver, which allows its customers to receive Freeview channels where those channels are not streamed by Tiscali over its network. Reception of these channels is subject to DTT availability in that area.

**Table 32: Sky and Virgin Media TV channels available by package**

| Channels | Former HomeChoice packs* | | New Tiscali TV packages* | | Premium / separate package | PPV |
|---|---|---|---|---|---|---|
| | Base | Big | Variety | Entertainment Xtra | | |
| **Sky wholly owned and joint venture channels** | | | | | | |
| Sky One | | ✓ | ✓ | ✓ | | |
| Sky Two | | ✓ | ✓ | ✓ | | |
| Sky Three | | ✓ | ✓ | ✓ | | |
| Sky Sports News | | ✓ | ✓ | ✓ | | |
| Sky News | | | ✓ | ✓ | | |
| Sky Arts | | ✓ | ✓ | ✓ | | |
| Paramount Comedy | | ✓ | ✓ | ✓ | | |
| Paramount Comedy 2 | | ✓ | ✓ | ✓ | | |
| National Geographic | | ✓ | | ✓ | | |
| National Geographic on demand | | ✓ | | ✓ | | |
| The Biography Channel | | ✓ | ✓ | ✓ | | |
| 4 Sky Sports channels | | | | | ✓ | |
| 4 Sky Movies channels | | | | | ✓ | |
| Chelsea TV | | | | | ✓ | |
| Nickelodeon | | | | | ✓ | |
| Nicktoons | | | | | ✓ | |
| **Virgin Media joint venture channels** | | | | | | |
| UKTV Gold | | ✓ | y | ✓ | | |
| UKTV Style | | ✓ | | ✓ | | |
| Dave (formerly UKTV G2) | | ✓ | | ✓ | | |
| UKTV People | | ✓ | | ✓ | | |
| UKTV Documentary | | ✓ | | ✓ | | |

*Source: Tiscali 'Homechoice' website*

*Notes: *Package availability appears to depend on whether the subscriber is located in a former HomeChoice region or a new Tiscali region.*

## VoD services

3.163 The following PPV and subscription VoD service are available to Tiscali subscribers:

3.164 'Movies Now' an on-demand movies service that offers current films. Pricing structure is £3.49 per rental for new releases and £1.99 for 24 hours for other movies.

3.165 'Screenies' a children's feature film service that holds over 50 films in its library. Pricing structure is £3.49 per rental for new releases and £1.99 for 24 hours for other movies.

3.166 'C1' an on demand general entertainment service that offers popular TV programmes acquired from US and UK content providers, and 'C2, now part of C1,' an on demand service that specialises in documentaries.

3.167 'V:MX' music channels offer customers the ability to select from a library of over 5000 music videos. Customers can watch the standard channel, skip to the next clip or select specific clips from the menu. They can also build their own library by saving their favourites. All V:MX channels are included in the Music Pack which costs £6 per month: V:MX Chart, V:MX hits, V:MX Urban, V:MX: Pop, V:MX Dance, V:MX Easy, V:MX Retro, V:MX The Pit, V:MX alt, V:MX: Search. Also includes broadcast channels such as MTV.

3.168 'Tiscali Replay' an on demand service whereby customers can view some of the popular BBC, Channel 4 and FX programmes on demand for up to 7 days after they're first shown.

3.169 ClubZebra-Fitness, ClubZebra-Health, ClubZebra-Inchpinchers

3.170 ThomsonTV, Disney Travel, CNN on demand, Cartoon Network Now, Scamp, 4OD, HBO On Demand, Free OD, Discovery Factual On-Demand , Discovery Lifestyle On-Demand, National Geographic On-demand

Interactive Services

3.171 Other than Teletext services, there are currently no other interactive services available for Tiscali subscribers.

DVR Services

3.172 While many Tiscali STBs do not include an integrated DVR, it should be noted that viewers can pause and rewind many of the on-demand services listed in paragraph A1.79. Tiscali+ launched in December 2007, offering a PVR so users can record and store programmes and whole series, as well as pause and rewind live TV.

HD Services

3.173 No HD services are currently available.

Broadband and telephony products

3.174 As outlined above, in order to receive TV services from Tiscali consumers must have a landline from either BT or Tiscali, and subscribe to a broadband product.

3.175 Table 30(a) and (b) above highlight the main TV, broadband and telephony package options available from Tiscali.

## Setanta Sports

### History

3.176 Setanta Sports was formed in 1990, initially broadcasting Irish sports to overseas markets.

### Business overview

3.177 In the UK, Setanta Sports is a vertically integrated wholesale channel provider and retail service provider for Setanta Sports ('best of' DTT channel), Setanta Sports 1 & 2, Setanta Ireland, Setanta Golf, Racing UK, Racing World, NASN (until February 2007)[35], Celtic TV, Rangers TV and LFC TV (Liverpool Football Club TV).

3.178 Setanta's channels are available to subscribers on Sky Digital, Virgin Media, Smallworld, WightCable, Tiscali TV, Top Up TV, and BT Vision, as well as to Freeview viewers.

[35] NASN was acquired by Disney owned ESPN in February 2007. However, Setanta still appears to be the retail service provider for this channel

3.179 In January 2007, Setanta started broadcasting all PGA TOUR events and programming including The Players' Championship.

3.180 Since August 2007, Setanta started broadcasting 46 live FA Premier League matches on Setanta Sports.

UK coverage details

3.181 The coverage of Setanta channels in the UK is dependant on the particular TV platform a consumer uses.

Total subscribers per year and homes passed

3.182 During a hearing with the Competition Commission in connection with its Sky/ITV merger inquiry "Setanta said that it had over 200,000 paying subscribers in the UK as at December 2006, the majority of which were through satellite."[36] Setanta recently announced that it has over 1 million premium subscribers in UK and Ireland[37], with an additional 2 million customers through partnerships with Virgin Media in the UK and Chorus in Ireland.

Number of subscribers by package

3.183 Details on the number of Setanta subscribers by package are not in the public domain.

Equipment and installation costs

3.184 The relevant equipment costs depend on the particular TV platform a consumer uses. However, consumers wishing to subscribe to the Setanta DTT channel can purchase a compatible set-top box directly from Setanta for £39.99 or a conditional access module (CAM) for £29.99. In addition to paying a £9.99 monthly subscription fee, consumers also need to purchase a viewing card for a one-off payment of £10.

### TV packages and other communications services provided

Availability of Setanta Sports channels

3.185 Table 33 below outlines the availability and monthly cost of subscribing to Setanta Sports channels by TV platform.

[36] http://www.competition-commission.org.uk/inquiries/ref2007/itv/hearing_summaries.htm
[37] http://www.digitalspy.co.uk/broadcasting/a81027/setanta-signs-millionth-premium-subscriber.html

**Table 33: Availability and cost of Setanta Sports channels by platform**

| Platform | Retail Service provider(s) | Channels available | Monthly subscription fee |
|---|---|---|---|
| DTT | Setanta | Setanta Sports<br>('best of' DTT channel) | £9.99 |
| Virgin Media Cable | Virgin Media | Setanta Sports 1<br>Setanta Sports 2<br>Setanta Golf<br>Racing UK<br>Celtic TV<br>Rangers TV<br>NASN<br>LFC TV | All Setanta Sports channels except NASN are free to Size:XL TV package subscribers (from 26 July 2007).<br><br>Additional £8 per month (£15 per month after first 12 months) for Size:M and Size:L TV package subscribers (all Setanta Sports channels including NASN).<br><br>Size:XL TV package subscribers pay an additional £8 per month (£15 per month after first 12 months) to receive all available Setanta Sports channels (including NASN). |
| Smallworld Media cable | Smallworld Media | Setanta Sports 1<br>Setanta Sports 2<br>Setanta Golf<br>Racing UK<br>Racing World<br>Celtic TV<br>Rangers TV | Additional £15 per month on top of TV subscription. |
| Sky Digital / Freesat from Sky | Setanta | Setanta Sports 1<br>Setanta Sports 2<br>Setanta Golf<br>Racing UK<br>Racing World<br>NASN<br>Celtic TV<br>Rangers TV<br>Setanta Ireland<br>LFC TV | £9.99 |
| BT Vision IPTV/DTT | BT Vision | Setanta Sports ('best off' DTT channel)<br><br>Setanta Sports Replay VoD:<br>- 46 Premier League matches (on demand from 3 days after live showing)<br>- 40 US PGA Tour events | £9.99 |
| Tiscali IPTV (from Sept. 2007) | Tiscali | Setanta Sports 1<br>Setanta Sports 2<br>Setanta Golf | £9.99 |
| Setanta Broadband TV | Setanta | Setanta Sports 1<br>Setanta Sports 2<br>Setanta Golf | £7.99 (or £79.99 for annual subscription) |

*Source: Setanta Sports, Sky, Virgin Media, BT Vision, Tiscali and Smallworld Media websites*

## VoD Services

3.186 As outlined in Table 34 above, Setanta operates a Broadband TV service and Setanta Sports VoD content is available with BT Vision.

## Interactive Services

3.187 Interactive services are not available, although Setanta has an arrangement with Sky for providing Sky Bet for Setanta's channels on DSat.

DVR Services

3.188 Setanta does not retail STBs.

HD Services

3.189 No HD channels or programmes are currently available from Setanta.

Broadband and telephony products

3.190 Setanta only retails its channels and does not retail any broadband or telephony products

## 6. Former services no longer offered

3.191 There have, however, been some unsuccessful attempts to enter the UK pay TV market, including ITV Digital, Kingston Interactive Television and BT Movio.

### ONdigital / ITV Digital

3.192 ONdigital was set up in 1998 by a consortium that included Carlton Television, Granada Television and Sky, and successfully won an ITC auction to provide pay TV channels on DTT. However, Sky was forced to withdraw from the consortium on competition grounds.

3.193 The service launched in November 1998 with a line-up of 18 channels. However, due to poor uptake Carlton and Granada decided to rebrand the service as ITV Digital in 2001.

3.194 It also purchased live television rights to the Football League and launched the ITV Sport Channel. However, the cost of this deal contributed to the failure of ITV Digital, which went into administration in March 2002[38].

### Kingston Interactive Television (KiT)

3.195 Kingston Communications launched Kingston Interactive Television (KiT) in 2000, providing TV and VoD services on its ADSL network. However, following falling subscriber numbers, it closed in April 2006.

### BT Movio on Virgin Mobile

3.196 In 2005, BT launched, BT Movio, a pay-TV service using spectrum normally used by the Digital Audio Broadcasting network. It subsequently wholesaled the service to Virgin Mobile who retailed it to customers. However, BT Movio decided to wind down its service in July 2007, with Virgin Mobile's service to close in January 2008.

[38] Further details of ONDigital and ITV Digital's collapse is outlined in Spectrum's report on Sports Rights in Annex 10

## Section 4

# Technology overview

## Introduction

4.1 Technology innovation is playing an increasingly important role in the development of the digital television markets. Improvements in compression and transmission technologies, increased adoption of higher speed broadband combined with home networks and the falling cost of digital storage are enabling new services to emerge and distribution costs to be reduced. Additionally, while it is still a developing market, high definition TV has the potential to achieve mass market appeal and could be a key reason for consumers deciding to invest in new digital TV equipment and services.

4.2 This section summarises the current trends in consumer demand and considers the resultant technology and service developments which may occur over the next two years.

## Current trends

### Choice and control

4.3 The success of the Sky+ DVR and increasing popularity of VoD services offered by Virgin Media reflects a growing consumer demand for greater control over when they watch their chosen TV programmes and the ability to pause, rewind and fast forward their playback. Meeting this consumer demand is likely to shape the development of digital TV platforms and equipment over the coming years, potentially offering viewers increased choice in where they view programmes in addition to when. For example, delivery of digital TV and on-demand content to multiple TV screens around the home as well as portable media players maybe a key growth area for service operators and equipment manufacturers in the near future.

<u>HDTV</u>

4.4 HDTV services in the UK have reached a relatively niche audience to date (<2% of UK households) but, due to the increasing adoption of large, flat screen “HD Ready” displays, a growing number of consumers may demand a wider range of HD content in the near future.

### Technology developments

4.5 Ongoing developments across the ICT (information and communications technology) sectors have ensured that the cost of computer processors, solid state memory and mass storage have continued to fall while capabilities have increased. These developments have allowed new digital TV technologies and consumer equipment to be developed which have significantly improved performance compared to those developed in the 1990s (when digital TV was first introduced) while maintaining a similar (or reduced) cost. The key technology developments which are set to impact the market in the foreseeable future are improvements in digital compression, digital transmission and the falling cost of digital storage.

## Digital compression technologies

4.6 Since digital TV was introduced in the UK in 1998 the 'MPEG2' video compression standard has formed the basis of the digital satellite, terrestrial and cable platforms. MPEG2 compression allows a standard definition TV service to be transmitted in approximately 3Mbps – thereby allowing multiple digital TV channels to be carried in the same radio spectrum that would be required for one analogue TV channel.

4.7 The last two years has seen the deployment of a new, improved compression technology called MPEG4 AVC/H.264 (commonly referred to as just 'MPEG4'). MPEG4 allows a standard definition TV channel to be transmitted at around 1.5Mbps[39]. While MPEG4 helps to reduce the costs of transmission on existing broadcast networks, the implication for broadband networks are more profound because it allows pre-recorded digital TV services[40] to be distributed across the large majority of existing broadband connections.

4.8 MPEG4 can also be used to compress high definition TV signals. Due to their higher resolution these signals contain a lot more information than standard definition TV and even with the advanced compression algorithms available in MPEG4 HD services are currently encoded at a bit rate of approximately 15Mbps. With improvements in MPEG4 encoder this is expected to reduce down to as little as 8Mbps in the coming years.

## Digital transmission technologies

4.9 While compression technologies determine the bit rate required to transmit a digital TV channel, transmission technologies determine the capacity (bit rate) that can be supported by a particular distribution channel e.g. a satellite transponder or DTT multiplex.

4.10 Transmission standard were developed in the 1990s for distribution of digital TV on satellite (DVB-S), cable (DVB-C) and terrestrial networks (DVB-T). These standards are in the process of being updated and the new standards will increase the capacity of existing networks once deployed. Sky has already implemented the new satellite standard (DVB-S2) in its HD set-top box which has allowed it to minimise the cost of transmitting its HD services. A new standard for DTT (DVB-T2) is currently in development and could be especially important for DTT in the UK which is currently capacity constrained. As discussed in our recent consultation on future technologies on DTT[41], we expect DVB-T2 to be commercially available in the 2009-2010 timescale.

4.11 MPEG4 and the new DVB-x2 transmission technologies are not compatible with existing set-top boxes and integrated digital TVs. Consumers must therefore acquire a new set-top box to receive TV services that are transmitted using these technologies.

## Digital storage

4.12 The cost of the hard disks used in DVRs continues to fall, while capacities are increasing. Ofcom estimates that the cost per megabyte of hard disk storage is

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[39] Microsoft has developed it own compression technology, VC1, which achieves a similar performance to MPEG4

[40] Real time encoding of live programmes currently requires a bit rate in excess of 2Mbps and so the number of broadband connection that could be used to transmit live TV is less than can support pre-recorded TV.

[41] http://www.ofcom.org.uk/consult/condocs/dttfuture/

broadly following Moore's law, i.e. capacity is roughly doubling every 18 months for the same price.

4.13 DTT-based DVRs with 250Gbyte hard disks, which can store around 150 hours of TV programmes, are now retailed for around £140. It is estimated a similar priced DVR in 2010 could store up to 1000 hours of standard definition programmes. This rapid increase in capacity of hard disks has particular implications for the development of video on demand services (see below).

## Future service developments

4.14 Having summarised the trends in consumer demand and the developments in the underlying digital TV technologies, the potential implication for the evolution of digital TV services are now considered.

### HDTV

4.15 While offering consumers improved picture and sound quality, delivery of HD content across existing broadcast networks and emerging broadband networks raises technical challenges and increased costs. Some platforms are better equipped that others to deliver HD and this differential capability may lead to differential rates of adoption.

4.16 Sky and Virgin Media have been offering HD services for over a year and between them have acquired almost half a million subscribers. Standard set-top boxes are unable to decode HD services and so a new HD capable set-top box must be acquired. Sky has taken the opportunity to introduce MPEG4 and DVB-S2 as part of its HD transmission system in order to minimise costs, while Virgin continues to use DVB-C transmission and MPEG2 compression technologies for its HD system.

4.17 Due to the high bit rates required for HD services (currently around 15Mbps) the high capacity satellite and cable networks are better placed to deliver them. DTT is currently capacity constrained and the introduction of HD is therefore more challenging. Ofcom has recently published a consultation[42] setting out its proposals for the introduction of new technologies to DTT, which could enable the introduction of new services such as HD.

4.18 Delivering HD over ADSL based broadband networks is also problematic. With only a very small percentage of ADSL lines supporting speeds in excess of 8Mbps it is not currently possible to deliver HD in real time over ADSL. While other solutions are possible, such as downloading the content to a set-top box hard disk before it is viewed, this is not a viable option for live events such as sport (a genre for which consumers place a particularly high value on viewing in HD).

4.19 For the foreseeable future cable and satellite are likely to continue to have an advantage in the delivery of large numbers of HD channels. Until ADSL networks are upgraded there is likely to be very little delivery of real time HD content over broadband and capacity constraints will mean that only a small number of HD channels will be carried on DTT.

[42] See http://www.ofcom.org.uk/consult/condocs/dttfuture/

## Video on demand

4.20 Video on demand services (VoD) provide consumers with a greater choice of programming and more control over when and how they watch it. While the consumer proposition is similar, the way VoD services are delivered differs between platforms. These differences are due to the different technical characteristics of each platform and it is these differences which are likely to influence the way on-demand services develop in the future.

4.21 When using the VoD service operated by Virgin Media on its cable network, viewers are able to select from a library of programmes stored on a central server and the chosen programme is then streamed across the cable network to their set-top box in real time. A similar solution is employed by IPTV providers such as Tiscali TV and BT Vision, however these operators use ADSL enabled telephone lines rather than a cable network. ‘Push’ VoD is an alternative approach used on one-way, broadcast networks. Sky and Top Up TV, for example, offer DVRs with reserved hard disk capacity to store VoD content. These DVRs automatically record VoD programmes (which are usually broadcast overnight) which viewers can subsequently access at a time that suits them and with full pause, rewind and fast forward control.

4.22 Using the Push VoD solution, the size of the programme library which consumers have access to at any one time is limited by the size of the hard disk within their DVR. The central server system used by Virgin, BT Vision and Tiscali does not have this limitation, but infrastructure costs are higher due to the need to operate a high speed, high quality broadband network.

4.23 As hard disk capacities increase (as described above) the current limitations of Push VoD will reduce and, unless there is a significant demand for niche, “long tail” content from consumers, Push VoD will be able to replicate much of the functionality offered by cable and IPTV operators.

4.24 As described above, capacity constraints in ADSL networks make delivery of HD over broadband unviable at present. However, Push VoD is well suited to delivery of HD content (whether via broadcast or broadband networks) and is likely to be the solution adopted on satellite and broadband operators for the foreseeable future. Virgin Media’s is currently the only operator able to support real time streaming of HD VoD content due to the high capacity and high speed of its network.

4.25 Sky’s HD set-top boxes include an Ethernet connection. While currently unused, it is thought that this connection could allow Sky to deliver VoD content across broadband at some point in the future if the Push VoD approach is unable to meet consumer demand for a wider choice of on-demand programming.

## In home distribution

4.26 As the conversion of primary TV sets within the home reaches saturation consumers and platform operators’ attention will be drawn to enabling second and third sets. Existing services like Sky’s ‘Multiroom’ offering allow consumers to replicate the pay TV package that they have on their primary TV on a second or third set. It is estimated that during January to March 2007 around 37% of Freeview set-top boxes sold were for use with second sets[43]. The DSO process will require all TV sets to be enabled for digital TV and therefore represents a significant market opportunity for operators and manufacturers.

[43] See Digital Television Update – Q1 2007, Ofcom

4.27 As digital TV services become more sophisticated, with HD, DVR and VoD services becoming commonplace, there is likely to be increasing consumer demand to have access to these advanced services on every TV set within the home. As described above, the falling cost of home storage and other ICT technologies, such as home networking, are making technology solutions that meet this demand increasingly possible and affordable.

4.28 While implementations differ, several manufacturers are developing solutions which use a "home media hub" to act as the central storage area for recorded material and the reception point for linear channels and VoD content. Whether based on a PC or a set-top box, these hubs can then feed second and third TV sets either directly or via low cost, low functionality set-top boxes. Connectivity between the different locations in the home can vary. For example, while wireless solutions require minimum installation, wired solutions using Ethernet, coaxial cables or power circuits may provided improve reliability and capacity.

4.29 The development and deployment of central media hubs may also form the basis of solutions for delivering digital TV services to mobile devices (see below).

## Mobile

4.30 Various solutions for extending access to digital TV and VoD content outside the home are likely to emerge in the coming years. In addition to new mobile TV services, existing pay TV operators may wish to provide access to their subscription content to mobile devices. There are two broad technology approaches to delivering to mobile devices, the first is to use broadcast, mobile telephony or wireless broadband networks to deliver directly to the mobile device and the second is to synchronise the content on the device with the hard disks in set-top boxes or PCs.

4.31 Live TV channels and downloadable video clips are already offered by a number of mobile networks. However, current solutions are delivered across the 3G networks on a "one to one" basis and so do not scale well with increased demand. These solutions are therefore unlikely to be viable in the long run if mobile TV achieves mass market appeal.

4.32 The wider deployment of Wi-Fi hot spots and similar technologies may provide sufficient reach to deliver streamed and on demand content to mobile devices. However, high tariffs and limited coverage are likely to limit use of these networks for mobile TV in the short term and in the longer term, if mobile TV services become popular, these networks may face similar capacity issues to the 3G networks.

4.33 Broadcast solutions for mobile TV are already available and scale much better than 'one to one' networks, such as 3G, as usage increases. Technologies such as DVB-H and DAB-IP allow efficient 'one to many' distribution of live TV channels (but are not particularly suited to VoD). Upcoming auctions for L-Band and DDR (UHF) spectrum (among others) will provide an opportunity for operators who wish to build broadcast mobile TV platforms in the UK. Alternatively, 3G operators have the option to implement a part of the 3G UMTS standard called MBMS which introduces a broadcast element to the transmissions from existing mobile sites.

4.34 Solutions which do not rely on mobile broadcast or data networks may represent an alternative for existing digital TV providers to offer mobile TV solution to their customers in the short to mid term. Transferring programmes from a computer or set-top box hard disk to a mobile device (the so called "sync and go" approach) is already a familiar concept to those using portable music players such as the iPod.

One of the challenges to this approach is to ensure content rights acquired by the pay TV operator continue to be enforced as the content is moved between devices. One solution is to use the same (or compatible) Digital Rights Management (or Conditional Access) technology that is used in the set-top box or the PC on the mobile device. While such an approach should ensure content rights are protected, it could lead to increased vertical integration of the value chain, with consumer being required to use mobile devices which are provided by their pay TV operator.

Hybrid devices

4.35 As described above, broadband networks are well place to deliver VoD services but are less capable of delivering live TV (whether standard or high definition). BT's Vision service attempts to address these short falls by including a digital terrestrial tuner and hard disk within it IPTV set-top box. BT Vision customers are thereby able to watch (and record) the live channels broadcast on DTT and supplement them with on-demand content delivered over the broadband connection. Inclusion of the hard disk also gives BT the option to introduce Push VoD service in the future (using broadcast or broadband delivery) – this solution may be particularly suitable for the deliver of non-live HD programming.

4.36 The benefits of hybrid IPTV/broadcast solutions can be achieved at a relatively low incremental cost and it is probable that other IPTV providers will adopt an IPTV/DTT or IPTV/DSat solution in the future.