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Development of Digital TV in Europe

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1 UK Digital TV market overview

1.1 Roll-out of digital services

1.1.1 Satellite digital services

SkyDigital, the service which dominates the UK digital satellite direct-to-home TV market, launched on October 1st 1998. It is operated by BSkyB, the leading payTV service operator in the UK and Ireland. SkyDigital reached 1.27 million subscribers one year after launch. The SkyDigital launch was the most successful launch of any digital service in the world. This compares with a total of 2.3 million analogue satellite subscribers. The size of the analogue segment is declining as households switch to digital. Digital terrestrial was launched a month later and digital cable a year later than digital satellite.

SkyDigital subscribers

End- 98	End-June 99	End-Sep 99
225,000	753,000	1,270,000

A major impetus to the transition to digital is the announcement by BSkyB that it will be switching off its analogue services by the end of 2002. This will save Sky some €80m p.a. in analogue satellite transponder fees. This announcement combined with the release of 'free' set-top boxes will encourage existing analogue satellite customers to make the transition. This presents a significant challenge to the main multi-channel competitors the cable companies, which have only just started converting consumers to digital.

1.1.2 Cable digital services

Cable services were launched on a 'soft' basis in the summer of 1999. However, the continuing uncertainty over the ownership and technology choice of the cable companies prevented a full launch until October 1999 when Telewest launched Active Digital. The initial response of customers has been very positive with take-up rates higher than for analogue cable.

For the past few years, the focus of the cable companies has been on building out their network franchises and in developing the telephony business. The challenge for the cable companies is now to refocus on the television entertainment market – they must convert their customers to digital before they are tempted to satellite. The cable companies are emphasising their advantage in terms of offering not only digital television but also telephony and the internet with high-speed access – the so-called 'triple-play'.

The Irish cable industry looks set to converge with that of the British. NTL bought the largest Republic of Ireland cable group, Cablelink based in Dublin, for €730M in May 1999. Since NTL also possesses the Northern Ireland franchise, it controls cable in Ireland.

1.1.3 Digital terrestrial television

Digital terrestrial television (DTT) in the United Kingdom was launched on 15th November 1998. All the terrestrial broadcasters are using their gifted capacity to offer digital simulcasts and additional new programming. Channel 5, a relatively new broadcaster, decided not to take up the opportunity to offer new services and has instead focused on expanding the audience share. The DTT offering is thus divided into free-to-air TV services (BBC, ITV, C4 and C5, SC4) and pay-TV services under the brand name OnDigital. OnDigital is jointly owned by the media groups Carlton and Granada which operate the two leading C3 private broadcasting franchises.

The growth of DTT has been driven by pay services from Ondigital. The number of people receiving free-to-air services only is not yet measured but is believed to very limited due to the high cost of the unsubsidised set-top box (€500). Pay DTT has had a successful start once OnDigital decided to match SkyDigital and offer the set-top box on a leasing basis – marketed as being a 'free box'. Ondigital had a slow first full quarter, reaching 110,000 new subscribers in the period from launch on 15th November 1998 until March 1999. However, by the end of June 1999, the number of subscribers to OnDigital were 247,000[1] and progressed to 411,000 by the end of September 1999. The monthly subscriber growth rate in subscribers accelerated throughout the year and peaked in advance of Chrismas 1999. This was helped by a pre-pay offer where the box and one year's subscription could be obtained for as little as €160. Ondigital expects to gain two million (8.3% of households) subscribers within three years.

OnDigital subscribers

Launch to Q1 99	June 99	Sep 99
110,000	247,000	411,000

1.1.4 Situation of MMDS

The UK has not adopted MMDS technology as a basic platform for terrestrial television transmission. Given the successful arrival of digital terrestrial the prospects for MMDS appear to be even more limited. The opportunities for domestic telecommunications use of MMDS also suffered a setback when the Ionica fixed wireless project was abandoned.

[1] Only 204,000 of these were paying customers. The balance was made up from those who had ordered but not yet paid for the service and by showroom models. Initiating the payTV smartcard for terrestrial takes longer than for satellite since it is necessary to check the postcode of the viewer.

1.1.5 Situation of ADSL

ADSL technology will be launched by spring 2000. The BT network will be upgraded to reach 6 million homes at launch increasing to 15 million homes (70%) by the end of 2001. This involves converting 400 exchanges in 10 main cities at a cost of €400 million. This timing coincides with the ending of the ban on PTOs offering broadcast services over their own networks. Under the Government's 'Broadband Britain' initiative, PTOs will be able to offer pay-TV services. Consumers wishing to receive high bandwidth switched video-streams will be presented with a choice of using the cable network or else an upgraded BT network.

The prospects for the rapid takeup of ADSL appear good:

- ✓ The prices of ADSL are likely to be pitched at a level which is affordable. ISDN grew rapidly during 1999 because of an attractive pricing package from BT.
- ✓ There are a number of video/multimedia service providers, such as Kingston and Video Networks, which are preparing to offer their services over the BT networks. Microsoft is also known to be very interested in taking advantage of ADSL. This will provide more choice to the consumers.
- ✓ Rival operators will be able to access the BT network from July 2001. This unbundling of the local loop was imposed by Oftel. Although BT resisted this move it has still pressed ahead with its network upgrade. The cable companies are not yet obliged to open up their networks to rivals although this is under discussion with the regulators. Oftel will allow BT to charge rivals €160 p.a. for providing access to a high-speed domestic line. The final cost including video-streaming equipment is expected to be not far short of €500 p.a. per household.

1.1.6 Market development

Digital services have made rapid progress since their launch on satellite and terrestrial. By end September 1999, after a year of operation, there were 1.27 million digital satellite and 0.44 terrestrial subscribers giving a total of 1.71 digital subscribers (7% of TV households). The vast majority of new digital viewers are payTV subscribers. Free-to-air digital television has not yet developed as a market given the high price of set-top boxes and integrated digital TV sets.

In addition to Sky Digital and Ondigital there were also significant numbers of subscribers to FilmFour, (see Table B below) the independent film channel from Channel Four. Carried on all the digital platforms as well as analogue satellite and cable subscribers pay €10 per month. By May 1st 1999 it reached 100,000 subscribers, well on the way to its target of 150,000. Penetration of FilmFour is highest in digital households.

The development of the digital television market must be seen in the context of a high level of consumer awareness of communications technology. There was an explosive growth in the usage of mobile telephones and the internet. There were 24 million mobile telephone subscribers (40% of the population) at the end of 1999. There was also an explosive growth in internet usage following the introduction of free internet service providers led by Freeserve.

Table B: Penetration of Digital Pay Services

Name of the service	Ownership	Date of launch	Subscribers (est 30 June 99)
Sky Digital	BskyB	Oct 1^{st} 1998	753,000
Ondigital	Granada/Carlton	Nov 15^{th} 1998	247,000
FilmFour	Channel Four	Nov 1^{st} 1998	100,000

Sources: BSkyB, Ondigital, Channel 4

Digital satellite

SkyDigital easily beat its target of one million digital subscribers by its anniversary. This was achieved mainly by virtue of the special offer of a ‘free’ Digibox and cheap satellite installation. Digital satellite sales were 75,000 per month prior to the provision of a free set-top box on May 5^{th} 1999 and increased to 225,000 per month thereafter. However, during 1999 the financial performance of BSkyB changed from a healthy profit into a substantial short-term loss due to the cost of converting to digital, subsidising the boxes and the high content costs.

Digital satellite is converting new households to digital. 45% of SkyDigital subscribers are new to satellite and hence new to digital. Even in the launch quarter, one third of customers were new to satellite. The strategy of BSkyB is to migrate consumers from their own analogue satellite services over to higher-value digital. The average increase in the revenue per subscriber is 6%. Furthermore, according to BSkyB, customer satisfaction for digital is much higher than for the analogue service. The results from the first months of trading have shown the economic advantages of digital :– the pay to basic ratio is significantly higher than in analogue; churn is negligible; pay-per-view buy rates are higher and a higher proportion take the family basic package. This reflects the trend towards smaller size ‘entry-level’ packages.

The launch of digital television has increased the size of the pay TV market mainly to the benefit of BSkyB. It had gained 80% of the digital households in the UK by the third quarter of 1999. The SkyDigital service was successful compared with the terrestrial platform for two main reasons – programming and coverage. SkyDigital’s better programme offering includes premium sports and films, whereas DTT offers a limited subset. Furthermore DTT suffers from lack of national coverage pending the completing of the roll-out programme. It is necessary for the retailer to check the address of the customer to confirm whether a signal can be received. The churn rate on the new digital satellite services is reported to be very low (around 10%) which indicates a high degree of customer satisfaction.

Undoubtedly, sports programming has continued to drive the take-up of BSkyB services with two-thirds of BSkyB subscribers taking its sports offerings. More sports have fallen to the financial inducements of BSkyB including English cricket and Scottish football. Exclusive rights to key sports events such as the Ryder Cup for golf and international Rugby Union also stimulate the demand for BSkyB. The cricket World Cup held in England in the summer of 1999 was a very successful event and increased awareness of SkyDigital amongst the ethnic groups from the Indian sub-continent.

The competition between the satellite and terrestrial platforms is such that set-top boxes are now being provided free to digital subscribers. The digital dish and 'Digibox' is provided free by Sky is on the following terms :-

- ✓ signed Interactive Discount Contract
- ✓ digital satellite system must be professionally installed
- ✓ home telephone line must be connected to the Digibox for 12 months
- ✓ viewing card in the Digibox

Note that there is no obligation to subscribe to Sky to receive the free Digibox. However, there is an installation charge. With a Sky Digital subscription the standard installation cost is just €64 provided the above conditions are met. Without a Sky Digital subscription the installation cost becomes €160. In the event that any of the conditions are broken then the subscriber is obliged to pay a penalty of up to £135 to Marketing Contributions Ltd and £153 to BSkyB. Once the first year is complete the household may keep the Digibox without further obligations.

The Interactive Discount Contract is with Marketing Contributions Ltd. This is a member of British Interactive Broadcasting Holdings Ltd (BIB) which also owns Open Interative Broadcasting Ltd. In effect, the Digibox subsidy is being paid by the BIB consortium on the basis of projected revenues from interactive services. BIB investors include BSkyB, BT, Mitsubishi and HSBC.

Digital terrestrial

The launch of DTT has been successful in challenging the public perception that multi-channel television derives from satellite or cable only. The existing terrestrial broadcasters (with the exception of the more recently launched C5) have taken the opportunity to offer additional services beyond digital simulcasting. DTT is being offered as digital television through an aerial to distinguish it from satellite and cable. The marketing emphasis is on familiarity and simplicity with 'plug and play' a major theme. Considerable cross-marketing efforts are being made by both the BBC and the main C3 channels – particularly Carlton and Granada. The DTT offering is set out in Table A.

On Digital spent •179m in the launch of digital terrestrial television up to March 1999. The marketing budget for the first year is •144m. ONdigital has announced that it intends to spend another •320 during 99/00 to enable it to compete with Sky in offering set-top boxes on a free rental. Channel 4 spent •16M on digital transmission and channels in 1998 and is focusing on its Film Four service.

Table A: Channels on digital terrestrial television

Multiplex	Operator	Free to air	Subscription	Coverage by 2000
1	BBC	BBC1 BBC2 BBC Choice BBC News 24 BBC Knowledge BBC Text BBC Parliament (audio only)		91%
2	Digital 3&4	ITV ITV2 Channel 4 Teletext digital	Film Four*	91%
A	SDN	Channel 5 S4C		90%
B	Ondigital		Carlton Cinema Cartoon Network Sky One British Eurosport Sky Sports1* and 3 Sky Premier*	88%
C	Ondigital		Granada Plus Shop!** UK Gold MTV First ONdigital** Sky MovieMax*	77%
D	Ondigital		UK Style UK Horizons (BBC) UK Play Carlton Kids AM Carlton Food Network Granada Breeze Carlton World PM Carlton Select Granada Men & Motors	69%

* Premium channel ** Free bonus channels

Note that this listing is subject to change quite dynamically. For example, Ondigital has been able to include both Sky Sports 2 and Sky Sports 3 following the relaxation of some media concentration rules. In addition, from early 2000 the Carlton channels Carlton Kids and Carlton World are to be replaced by the Discovery Channels, Discovery Kids and Discovery Wings.

Digital Cable

The cable companies suffered many delays in their digital launch. However, the growth of digital cable is expected to be rapid in 2000 once the cable sector consolidates and the 'triple-ply' offers hit the market. The cable companies had already developed a successful market share building strategy by the introduction of smaller TV packages which increased penetration rates of households passed from a stubborn 22% to 25% and above. The smaller packages led to a decline of the average pay-to-basic ratio to 129% in April 1999 compared to 161% a year earlier. However, more households were using the telephony service.

More than half the homes in the UK are now passed by cable. By the end of September 1999, 4.4 million households were connected to at least one cable service – television or telephony. Of these, just over 3 million took the television service compared to 3.57 subscribers to satellite TV. The market share of the cable companies has risen faster than that of satellite every year until 1999 when SkyDigital reversed the trend. The satellite share fell from 15.1% of households at the end of 1997 to14.6% of households at the end of 1998 as more viewers adopted cable. However, with the advent of SkyDigital, the investment bank JP Morgan expects the share of satellite to grow to around 22% of overall households.

BBC

The BBC plays a pivotal role in the introduction of digital television and is found on every delivery system. In the year to March 1999 its output totalled 22,409 hours of digital television compared with the analogue network television total of 8,581 hours. This disparity is increasing rapidly. The BBC launched a third new digital channel, BBC Knowledge, in June 1999 dedicated to learning. It has entered into agreements with the Open University and the newly-formed University for Industry.

BBC digital costs year 98/99

Digital Service	Costs •M	Cost per hour •000	% of channel cost
BBC ONE and TWO Widescreen	48	197, 131	2.6
BBC CHOICE	54	16	100
BBC NEWS 24	80	9	100
BBC PARLIAMENT	3	1	
Digital Radio	10		
BBC ONLINE	37		
Digital development costs	14		
Total	**246**		

The cost of the present analogue BBC licence fee is €162. Given the loss of important sporting rights, especially the soccer cup and the international cricket, there was controversy surrounding the costs of digitisation which was €246m in the year 1998 to March 1999. The BBC has committed not to spend more than 10% of licence fee income across all its digital investments.

The government set up a study committee Review Panel under the economist Gavyn Davies, Deputy Chairman of the Bank of England to consider whether there should be a separate digital licence fee. In summer 1999 it recommended that the licence fee should be increased by €38 for homes which take digital broadcasts. This digital premium over analogue would be reduced gradually over a number of years so that the disincentive to go digital would be minimised. Predictably, the other UK broadcasters opposed this plan since they complain that the BBC uses public money to undertake programming which is better in the domain of the private broadcaster. They also argued that a digital licence fee would delay the switch over to analogue. They have taken the matter for review on the basis that it is illegal under European state aid rules.

According to a NOP survey, the BBC's digital channels carry little weight in the consumers' decisions to buy digital receiving equipment. This evidence was put forward by Sky and Ondigital together with the other main UK broadcasters to the Review Panel on BBC finances. The payTV broadcasters are united in their opposition to the introduction of a digital licence fee. In December 1999 the Parliamentary Select Committee on Media rejected the Davies recommendation of an incremental digital licence fee. It was critical of the level of costs incurred by the BBC for the introduction of digital and cited the case of BBC News 24 which costs over €80 million p.a. Although this reaches up to 6 million viewers including cable viewers, there are only 2.2 million digital viewers.

SDN

The multiplex operator, SDN (S4C Digital Networks – S4C is the Welsh channel) launched its digital services in June 1999. Its coverage (Multiplex A) is high compared with the Ondigital multiplexes but it carries the low-audience Channel 5 and S4C. The SDN multiplex also includes BBC Knowledge. This arose because there was not sufficient room on the BBC multiplex and so additional capacity had to be rented. This is a rare example of a British public service broadcaster paying for the use of spectrum. Unfortunately, due to the terrain of Wales it is not possible to reach more than a quarter of the Welsh population. An identical problem applies to Scotland where the Highlands are not scheduled to be fully covered by DTT for many years. The parliamentary Welsh Affairs Select Committee[2] suggested that Wales might be served via satellite in order to complete coverage.- However, the government replied that more digital capacity could be found with suitable spectrum planning.

The commercial strategy for the SDN service had been to offer a pay per view service independently of Ondigital. However, this has been deferred following the introduction of free DTT set-top boxes from ONdigital. SDN, having less multiplex capacity than Ondigital, was not in the position to finance set-top box subsidies since it could not generate as much revenues as Ondigital from the resulting pay services. Ondigital became a 50% owner of SDN in March 1999 thus extending its control of the entire digital terrestrial platform.

[2] Welsh Affairs select committee second report on 'broadcasting in wales and the national assembly' Hansard 27 April 1999

DTV market revenues

The digital television market is largely driven by subscription revenues. For BSkyB, the largest pay-TV operator, the proportion of revenue attributed to advertising is 13.6%. The commercial terrestrial broadcasters have now entered the digital pay market in order to enhance their revenue streams. However, they expect advertising to remain the most significant revenue stream. Advertisers are prepared to pay more per viewer reached as the TV audience fragments. The prospects for advertising are positive.

Audience profile

The most important broadcaster remains the BBC which has around 40% of all viewing. Its explicit move towards digitisation has raised public awareness. Market research carried out on behalf of the ITC just prior to the launch of digital television showed that the British public had a high awareness (8/10) of digital TV. However, they were not interested in the technology itself (38% not at all interested, 13% not very interested, 29% were undecided). Only 4% were very interested. The survey revealed that there is still considerable resentment (8/10) by the public at having to pay extra to watch sports events and films.

The demographic profile of the digital terrestrial and the satellite customers appear to be quite different. The Ondigital customers tend to be middle-class, include young married couples and many over-50s. These are typically households which did not want a satellite dish on their roof. They wanted a few more channels but without the fuss of a complicated installation. The Ondigital service is unlikely to appeal to existing cable and satellite customers. It is seen as an upgrade by those households which were never attracted to multi-channel television in the first place. According to a survey carried out by Inteco in December 1998 about half the digital terrestrial customers will remain free-to-air. Ondigital has stated that it believes that 40% of the digital terrestrial market will remain free-to-air.

An NOP survey conducted in April 1999 found that the typical demographic profile of digital early adopters was male (57%), young with half in the 15-34 age range, and in higher socio-economic groups than those in analogue multi-channel homes. A third of these 'early adopters' were subscribing to both SkyDigital and Ondigital.

DTT Coverage

The digital terrestrial transmitter build-out programme is expected to reach 92% national coverage by January 2000. At launch the coverage was only 66% on the best multiplex, which partly explains why DTT subscriptions fell behind those of digital satellite. The most significant populated area still to be covered is the South East of England. Its coverage has been delayed due to the need for international frequency co-ordination with Continental Europe. The ITC initiated several frequency planning studies at the beginning of 1999 with the objective of reaching 99.4% of the population i.e. so that digital coverage can match that of analogue prior to analogue closure.

Analogue Closure

In September 1999 the Culture Secretary estimated that analogue closure would likely take place between 2006 and 2010. The government position is that digital coverage of the population must match that of current analogue coverage (99.4%) in order to protect viewers' interests before closure can be considered. In addition, there is a requirement that at least 95% of homes must have a digital receiver. The government is concerned to ensure that the price of digital reception equipment should come down rapidly and is to set up an affordability criterion especially for those on low incomes. The government will review progress towards these criteria twice a year. It is also setting up a Viewers' Panel comprising broadcast consumer groups. The announcement was welcomed by both the commercial broadcasters and the BBC since they wish to move over to digital as soon as possible in order to save the costs of simulcasting.

1.1.7 Barriers to competition or market development

The success of SkyDigital compared with Ondigital has given rise to a number of concerns within the industry and from government. This is partially due to the controlling influence of Rupert Murdoch who has often presented a political threat to the prevailing government. One of the reasons for the UK introducing DTT so rapidly was to create a counter to the power of BSkyB. Unfortunately the result has been the reverse with BSkyB consolidating its lead in the payTV market and securing valuable broadcasting rights. This reinforcing cycle, so characteristic of the new media markets has presented the greatest challenge to regulators concerned to ensure a competitive yet pluralistic media market. The regulators have been very busy during 1999 particularly in the areas of :

- ✓ programme concentration rules
- ✓ programme unbundling
- ✓ television/telephony bundling
- ✓ non-supply of programming to satellite and
- ✓ ownership of sporting rights.

Each of these presented barriers to entry or else distorted the development of the market as discussed in more detail below. In addition to these media policies, there were a large number of corporate mergers and takeovers which also required economic regulation (monopoly, fair trading) which is discussed later.

Programme concentration rules

In the competition to gain subscriber numbers, the need to give away set-top boxes has adversely affected the financial performance of both BSkyB and Ondigital. The fear was that continuing losses at Ondigital would eventually lead to the withdrawal of Carlton and Granada leaving the digital payTV market under control of BSkyB. In order to allay these fears, the ITC consulted the DCMS[3] in spring 1999 regarding relaxing some of the barriers faced by the Ondigital. The chief measure considered was to relax some of the rules regarding programming concentration.

Programme concentration rules were introduced to prevent one company (ie BSkyB) dominating the premium channels. Although originally well-intentioned, there have been a number of perverse effects. The absence of Sky Sports 2 from the Ondigital service line-up was a serious drawback since some of the top sports events were covered on Sky Sports 2 (opening the question of the difference between Sky Sports 1 and 2.) It had become clear that the survival of digital terrestrial depends upon being able to offer BSkyB programming. However, the DCMS was reluctant to allow greater concentration by BSkyB. However ONdigital could not very quickly build up a fresh portfolio of broadcasting rights in areas not already controlled by BSkyB. Eventually, in the autumn of 1999 the regulators permitted ONdigital to take Sky Sports 2 and Sky Sports 3.

The relatively slow growth of the digital terrestrial base compared with satellite may be remedied if BSkyB were permitted to supply more premium programming. This would convert Sky's advantage in market share on one platform into dominance in payTV revenues across all platforms. Regulators face a difficult choice between permitting BSkyB's services on Ondigital in order to roll out the DTT platform, versus a reduction in programme diversity. There is the downside possibility that more BSkyB programming on DTT would reinforce BSkyB's dominant position in terrestrial rather than putting pressure on terrestrials to develop other programming rights.

Programme unbundling

From around 1997, consumers were becoming increasingly resistant to large packages which included channels they did not watch – a process known as bundling. BSkyB's satellite offering was for large bundles. However, the cable company NTL had convincingly demonstrated that smaller bundles led to higher penetration rates. Prior to the launch of digital, the ITC ruled against the large size of the programming packages: digital distributors must allow viewers to purchase any premium channel from every basic package. (There is one exception to this rule. A large package is permitted in order to allow viewers to gain familiarity with the programming during an introductory period which must not exceed 12 months.)

This ruling against large bundles was seen as particularly damaging to those programming companies which survive with small audiences in the payTV market. Their value to the payTV operator is not just in the revenue per channel – but rather in offering a wider choice to the consumer. Usually the cost to the consumer for having many more programmes is very

[3] Department of Culture, Media and Sport

little. This makes the package as a whole more attractive – and partially explains why satellite has been more successful than terrestrial even though the most popular programming on both platforms is very similar. Legal challenges to this ruling from the Flextech and Sc-fi programming companies was unsuccessful. As a result, it is expected that those programming companies that survive must either have a very important niche or else they will be supplanted by offerings from the major programmers, broadcasters and studios. The market prospects for the smaller niche broadcasters appear weak compared with the power of the pay TV operators. They are obliged to seek a slot on one of the multiplexes which are controlled by the payTV operators.

Price transparency followed unbundling. The ITC ruled that any subscriber to a basic package could directly purchase one of the premium packages without having to have also subscribed to a set of other channels they did not want. This upset the existing arrangements which had been built up over a number of years. The ITC was particularly concerned about 'deep discounting'. This refers to the arrangements whereby the price of a premium channel is very cheap if the subscriber upgrades from the basic package. Deep discounting distorts the programme offering in favour of those channels which are included in the basic package. Disney complained that their channel could only be obtained after the viewer had purchased two Sky Movie channels.

The cable companies, which rely upon BSkyB for their premium programming, also complained about the high cost of the first premium channel. The cable companies are already at a price disadvantage compared to satellite since they are obliged to cover the significant costs of building out their networks.

Bundling of television and telephony

Apart from programme bundling there is an associated problem of service bundling which has exercised the regulators. The ITC and OFTEL are jointly considering the issue of the bundling of television and telephony. They are examining whether it is anti-competitive to refuse to supply one of these services separately and also whether the costs are being subsidised. This issue is also under scrutiny at the European Commission level. The fear is that the large telecoms and cable companies would be able to capture payTV subscribers not on the merit of the TV offering but due to cross-subsidies from the profitable telephony operation. Meanwhile the broadcasters are offering telephonys deals to their subscribers. Both Sky and Ondigital promise up to 40% off BT the standard tariff.

The issue has become more urgent with the imminent opening of access of the BT network to its competitors by 2001 and the restrictions against BT offering payTV over its own networks are to be lifted. The corresponding issue of the legal right of network/multiplex operators, particularly the cable companies, to deny access to their networks is under consideration as part of a wider regulatory review.

Non-supply of programming to satellite

In November 1998, BSkyB complained to the ITC about ITV's refusal to supply its digital channel ITV2 to satellite on the grounds that it was anti-competitive and detrimental to the availability of a wide range of services. The ITC did not accept this view given the availability of a large number of services on satellite and the wide distribution of ITV2 on the digital terrestrial and cable networks. If Sky could get ITV channels on to satellite then they would be able to offer the full range of British programming. Conversely, it is not in the interests of the owners of ONdigital, the ITV companies Granada and Carlton, to support an alternative platform. The absence of programmes such as Coronation Street and Champions League football limits the universal appeal of digital satellite.

This problem has clouded relations between Ondigital and Sky throughout the year. It highlights the asymmetric nature of the obligations upon broadcasters and network operators. There is no obligation upon a broadcaster to offer its services to a network and in particular no powers to enforce ITV to make its programmes available to satellite. Conversely network operators may not discriminate between broadcasters. What is clear is that the regulators want to protect Ondigital until it becomes a viable operation. The need to develop a new digital platform may weigh more heavily than enforcing particular programmes to be carried 'in the public interest'.

The situation between the three companies, formerly partners in British Digital Broadcasting, the forerunner to ONdigital, was tense. The ITC had to warn Carlton and Granada about unfair discrimination when they refused to carry adverts for Sky Premiership football in the spring of 1999. In May 1999 BSkyB offered a financial incentive to ITV whereby it would be guaranteed a satellite subscriber base of 2.5 million by the end of 2001 and would be compensated at €27 per subscriber below this threshold. Although ITV rejected this offer, as the autumn of 1999 approached, and the superior market position of SkyDigital became apparent, there were signs that some elements within the ITV federation was prepared to concede the argument to BskyB. ITV, as a commercial company, must always consider the direction of the mass market. Most observers believe that ITV will go on satellite eventually.

Ownership of sporting rights

The ownership of sporting rights has a fundamental influence on the development of the payTV market. Soccer was the primary driver in the initial stages of payTV market growth. In order to secure its future, BSkyB attempted to acquire Manchester United (the 1999 European Champions, the Premier League winners, and the FA Cup winners) for €1.6bn. This was thwarted by the competition regulator, OFT, in April 1999. This was a turning point since the domination strategy of tying up the vertical supply chain from content to subscriber was no longer acceptable. This has led BSkyB and the other main broadcasters and cable companies to seek smaller, investments in a larger number of clubs. In this way, they can ensure not only broadcasting rights, but also be aware of what moves there are in the market. BSkyB has taken an 11% stake in Manchester United as well as stakes in Leeds United and Manchester City. Even this policy has been thrown into doubt by a European court ruling in July 1999 that there is a potential conflict of interest if one company controls both clubs in the same match.

BSkyB's league football broadcasting rights expire in 2001. It is expected that there will be a more concerted attempt by terrestrial, cable and new players to win these rights the next time. Exploratory discussions have been ongoing with total contract figures mentioned for as much as €1.6 billion. It was confirmed in August 1999 that the Premier League can bargain collectively on behalf of the clubs according to an important ruling by the Restrictive Practices Court on the grounds that it is in the public interest.

The continued loss of major sporting events from free-to-air television remains a political issue. The market debate is primarily conducted between Sky - which has the funds to acquire sports rights - and the BBC which seeks to provide programming to as many people as possible. To help resolve some of the issues, and in accordance with Article 3(a) of the revised Television Without Frontiers Directive[4], the government has created two classes of events:

Listed sporting events

'A' list events:	cannot be shown live on payTV unless the rights are also available to free-to-air terrestrial TV
'B' list events:	Can be shown live on payTV provided delayed coverage or edited highlights are available to free-to-air terrestrial TV

The delay will depend upon the time of day – it could be as little as half an hour for a national late evening event. The minimum time allocation is 10% or 30 minutes.

The BBC

There has always been a debate about the extent to which a licence-fee funded organisation distorts the TV market. This debate has been intensified with the publication of the Davies report in July 1999 into the future funding of the BBC. The potential introduction of a digital licence fee would alienate many BBC viewers – particularly the poorest in society. The potential to delay the transition to digital is also seen as distorting what would happen in a commercial environment. The opponents of the BBC argue that the BBC should reduce its costs and focus on fewer channels.

There has been a dispute between the BBC and Sky over the BBC's supply of BBC News 24 free to the cable companies, thus undercutting Sky News, which they had previously carried. This is illustrative of the general concern about the dividing line between public service and commercial roles. This has given rise to a rare public argument between the BBC and the ITC about whether the BBC should provide a 24 hour news service which is a minority channel.

[4] 97/36/EC

Pornography

The Minister for Culture, Media and Sport has continued to ban pornographic channels. The market for pornography in the UK is therefore conducted using illicit means often through other European agents. This is an area which has not been harmonised under the Television Without Frontiers Directive.

1.2 Details of services

All the main digital delivery platforms have secured the main popular channels that increase their audience share with the exception of ITV.Given that the initial cost of reception equipment and installation is very cheap, the only decision facing the viewer is which package to select. SkyDigital provides a more economical method of obtaining multichannel television than does Ondigtial. For similar prices satellite can deliver many more channels than can terrestrial.

Free to air services

Both digital satellite and terrestrial offer as free-to-air the standalone services of six channels from the BBC together with Channels 4 and 5. To obtain these and the other, platform-dependent free services, it is necessary to have a free-to-air (or non-pay) card in order to decrypt the broadcasts. These cards are supplied free by the BBC, provided that the identification number of the receiver is quoted. Only a small proportion of digital viewers have chosen this option.

Pay services

The basic entry level for digital television is €11 for both terrestrial and satellite. This enables viewers to get the free-to-air services together with some ‘free bonus’ channels. Both platforms have divided the channels into categories to facilitate consumer segmentation. The pricing is structured so that the incremental cost of a channel declines rapidly. This gives an incentive for consumers to improve ‘value for money’ by purchasing a higher priced package a practice known as ‘deep discounting’.The resulting pay to basic ratio is high which reflects the popularity of the pricing strategy.

Premium pay services

In order to view the highest priced channels it is necessary to subscribe to the more basic packages. The most valuable payTV broadcasting channels in the UK, appearing on both terrestrial and satellite, are:

- ✓ Sky Sports 1
- ✓ Sky Premier
- ✓ Sky MovieMAX
- ✓ Film Four

Pay per view

SkyDigital offers a Near Video on Demand (NVOD) film service on a pay per view basis together with occasional event programming. ONdigital will offer a PPV event service later. The withdrawal of the Premier League from PPV negotiations removed the most attractive opportunity for developing the service on a regular basis.

Internet

The internet market has developed very rapidly. All of the broadcasters have their own websites which they promote onscreen. The broadcaster websites have developed their own identities and include a variety of material not found on the broadcast services eg interactive shopping, games and competitions. In a parallel development, Freeserve, the free internet service provider was launched in September 1998, just about the same time as Sky Digital, by the electronics retailer Dixons which is the largest retailer of TV sets in the UK. By mid November 1999 it had 1.7 million active internet accounts. The prospects for internet take-up have been enhanced by the announcements by BT and Telewest that they are to offer an ‘unmetered’ tariff early in 2000.

The BBC has one of the worlds’ most popular websites and is the most visited website in Europe. The online news service originates around 300 stories a day and is widely consulted by other news organisations. About a half of those visiting the site are from abroad including one-third from the USA. The BBC is planning to redirect non-UK visitors to national versions of a the domain bbc.com. These national sites will include advertising to help recover the cost of running the public service website. BSkyB also has a very popular website with full details about schedules and programming. The coverage of sports events is very comprehensive. Users of the BSkyB website can receive free email addresses.

Apart from having websites, the major broadcasters have announced that they will be internet service providers.What these will have in common is a ‘walled garden’ approach to ensure that some of the worst excesses of the web are controlled for family access. The BBC is to introduce a free web service hosted on its beeb.com site operated by BBC Worldwide, the commercial arm of the BBC. BSkyB has launched the Open interactive service which includes a ‘walled-garden’ internet service. Ondigital was planning to introduce its internet service at the end of 1999. The cable companies NTL and Telewest are able to offer high-speed internet access on their networks.

TV guide

Each of the digital platforms provides an onscreen TV guide. These are simple to use albeit not very elegant. The guides do not discriminate against information providers. The TV guides are indexed by channel rather than by programme. This means that viewers must first know which broadcaster they want before they can look for a particular programme. This may be seen to reflect the interests of the broadcasters.

Compliance in this area is measured against both governing sets of regulations: the ITC Code of Conduct on Electronic Programme Guides (1997) and the Oftel guidance 'The Regulation of Conditional Access for Digital Television Services' (1997). This regulatory guidance is issued as a result of Oftel's statutory authority, which derives from its regulation of the 1997 Class Licence for the running of telecommunications systems for the provision of Conditional Access Services. The guidelines do not affect the legal scope of either the Class Licence, or the Advanced Television Services Regulations 1996.

1.2.1 Number and type of services

There have been only around six new channels created for digital TV. Most of these were created by the ITV companies for DTT since they did not want to rely upon the Sky stable of channels. Most of the channels being shown on digital satellite already existed in analogue format. Many of the apparently new channels are really re-edited versions of existing channels, or repeats.

Digital Terrestrial

The original free-to-air line-up of channels has been maintained (Table A). Table C below gives a description of the DTT offering according to the type of services. Digital terrestrial offers 30 channels although some channels occupy different day-slots so it is possible to count a few more than this number. Nearly all of these channels are also carried on SkyDigital. The ITV and ITV2 channels, which carry the popular C3 programming such as Coronation Street, are not available on satellite. Interactive services are planned for later in 2000.

All of the channels are British in content. One channel, S4C is dedicated to Welsh programming 12 hours a day. The Eurosport Channel is the British version. The most recent channel to join the line-up is MTV, the leading music television channel.

Table C : Digital Terrestrial Channel Types

Channel type	Number in type	Comments
Free to view	12 (13 incl alternatives)	Based on the existing terrestrial broadcasters. Includes digital teletext.
Free Bonus channels	2	One Home Shopping Channel and one channel for specially commissioned material. Need to be a subscriber to the Primary channels.
Primary channels	12 (16 incl alternatives)	Mainly programmes sourced by Carlton and Granada. A 'best of' BBC adds quality. MTV, Sky One and Cartoon Network extend the range. Eurosport – British version.
Premium channels	5 (Sky Sports 3 is free with Sky Sports 1)	Top sports channel from BSkyB plus two leading BSkyB film channels – Premier and MovieMax. Film Four also.

Digital Satellite

SkyDigital offers the widest array of channels to the UK audience. In total there are 64 separately identified television channels available and 3 audio channels (BBC Parliament, Music Choice and Music Choice Extra). The full list is set out in Table D below. Most of these channels are produced in Europe. BskyB is gradually increasing its ownership of the channels that it includes in its package. However, it remains primarily a packager. A major problem in trying to determine if a channel is primarily European or American is demonstrated by the film channels in which the content is largely American although the channel is controlled by Sky. Around 12 of the Sky channels are produced in America. However, it is difficult to be precise because channels are produced in European versions eg with local languages.

SkyDigital has devoted Premier Widescreen to films with widescreen aspect ratios. There are two home cinema experiences per evening per 'screen'. The Sky Box Office carries occasional events such as a boxing match but the main focus is on frequently starting films. There are 48 'screens' with a choice of up to 30 of the latest films each month. Start times can be as frequent as every 15 minutes. BSkyB also operates the MUTV channel – a joint venture with Manchester United football club and the first channel devoted to one football team. The first made-for-digital channel was also created – Sky Sport News.

In September 1999 the Open interactive service was launched through the SkyDigital box. It has met with immediate popularity. In its first two months it achieved 300,000 email users as well as 73,000 banking users and 60,000 users of its interactive services e.g. games. It provides 'walled garden' internet access. The service is not available to Ondigital users. It is unclear whether the service evenues will justify the full cost of the set-top box subsidy and there is a possibility that the service could be floated independently.

Table D : Digital Satellite Channel Types

Channel type	Number in type	Comments
Non-subscription	9	Based on the existing terrestrial broadcasters. Six channels from the BBC. No ITV (C3). Also includes CNN International. Sky News and QVC are free but packaged separately.
News	4	Sky News (free), Bloomberg, CNBC, Sky Sports News
Entertainment	9	Sky One, Bravo, Challenge TV,Granada Plus, UK Gold 1 & 2, Paramount Comedy Channel, Tara, Sci-fi
Documentaries	9	Six Discovery channels (one repeated offset 1 hour), History, National Geographic, UK Horizons (BBC), [.tv]
Lifestyle	8	Living, Discovery Home & Leisure, UK Style, Sky Travel, UK Arena, Granada Men&Motors, Granada Breeze, QVC (free)
Kids	4	Fox Kids, Nicklekodeon, Cartoon Network (repeated offset 1 hour), Trouble
Music	9 (inc one digital audio)	Four from MTV, two from VH-1, The Box, UK Play, Music Choice (DAB-S)
Premium movies	12	5 Premier channels (inc one widescreen), 4 MovieMAX channels, Free bonus : 2 Sky Cinema (classics), Free bonus : Disney (can also be separately purchased) Sky Box Office (NVOD pay per view).
Stand-alone premium Channels	4	Film Four (€10 per month) MUTV (€8 per month) Music Choice Extra (€8 per month) (Digital Audio) Disney Channel (€8 per month)

1.2.2 Details of the DTV offers

Special offers

Both terrestrial and satellite have special introductory offers for new subscribers as set out below.

Service	Introductory offer
Ondigital	Rental of set-top box included in subscription i.e. box is 'free' All 12 primary channels for price of 6 in first three months - €16 pm Required aerial 'upgrades' at fixed price of €64 No connection charge
SkyDigital	Free 'Digibox' providing Interactive Discount Contract is signed for 12 months requiring connection to telephone. Installation fees of €64 payable. N.B. No obligation to take SkyDigital to benefit from this offer but then installation fee rises to €160.

The SkyDigital set-top box offer is primarily financed by British Interactive Broadcasting which is the consortium formed to offer interactive services under the trading name Open. There is no obligation to use the Open interactive services. The Digibox reverts to the subscriber after 12 months. This contrasts with the 'free' ONdigital set-top box which is conditional on taking out a subscription and is returnable if a subscription lapses after a year. From November 1st 1999, there was a 'prepaid' offer where the box can be obtained for €160 covering a full year subscription. In this case, the consumer installs the box themselves.

Packages

Subscribers are encouraged to commit for a period of time in order to get them familiar with the platform and payTV. The programmes are divided into basic and premium packages. The basic packages are priced competitively. Total cost to the consumer rises considerably once they obtain any of the premium channels. All subscribers have access to any pay-per-view programming.

Digital Terrestrial

There are 12 free-to-view channels.To obtain them it is necessary to obtain a set-top box at an unsubsidised price – which is typically around €550-€650. Since the introduction of the 'free' set-top box, the major retailers have not offered the free-to-air set-top box which is now only available from more specialist retailers. As a result, the take-up of free-to-air digital has been very limited.

Most viewers choose to take one of the basic price packages from the payTV supplier Ondigital (Table E). The set-top box is supplied free and must be returned in the event of ceasing the subscription. Subscribers are free to choose exactly the channels they want to watch. They can change a channel free of charge after viewing it for 30 days.

Table E: Basic price packages from Ondigital

Channels	€ per month
Basic entry : 1 Primary channel Shop !, First Ondigital	11
Any 6 Primary channels	16
All 12 Primary channels	19

Carlton Cinema is the most popular movie channel available in Ondigital. However, to compete with Sky Box Office, Ondigital is looking to launching its own PPV channel on the SDN multiplex. The premium channels may be obtained individually (Table F).

Table F: Digital terrestrial premium pricing scheme

Channels	**€ per month**
Film Four	10
Any 1 Sky Premium channel	19
Any 2 Sky Premium channels	24
All 3 Sky Premium channels	29

There are special pricing arrangements for those viewers who live in areas where they are unable to receive all the terrestrial multiplexes. They cannot receive six primary channels so they receive a combination of primary and premium channels. The top package, which costs €44 per month, includes: Carlton Cinema, Cartoon Network, Sky One, Eurosport; Sky Premier, Sky Sports 1 and Film Four.

Digital Satellite

SkyDigital has continued to simplify the package offerings. The majority of subscribers take those recommended packages which include the Family Pack. The exact line-up varies frequently. In Q3 1999, Sky moved Sky Cinema from the premium channel range to the family basic package in order to increase sales. The main packages are set out in Table G. Note that Ondigital is unable to expand its offering to take on board the new channel since its capacity limit has been reached.

Table G: SkyDigital Pricing

Package	Channels	€ per month
Basic minimum	6channels: Sky One, Sky News, Discovery Home&Leisure, Bloomberg, QVC, Music Choice	11
Value Pack Popular Mix Knowledge Lifestyle Entertainment Kids	The above and 11 more channels taken from one of a themed group.	16
Sky Family Pack (43 TV channels 1 audio channel)	9 Non-subscription 4 News 9 Entertainment 9 Documentaries 8 Lifestyle 4 Kids 9 Music	21
Premium themed package Sky Sports World Sky Movie World	Family Pack above plus : Sky Sports 1, 2, 3 Premier(5), MovieMax(4), Cinema(2), Disney	 43 43
Maximum Sky Offering Sky World	Sky Family pack + Sports + Movies	51

Summary Of Digital Paytv Offers

From the foregoing pricing structures it is apparent that SkyDigital provides a more economical option (Table H) than Ondigital for a household wishing to have multi-channel television. Monthly sales of satellite are running much higher those of terrestrial. It is likely that this satellite advantage would be even greater but for the absence of ITV on satellite.

Table H: Summary on Digital PayTV offers

	Minimum Price €pm	No. channels *	Average price per Channel €pm	Maximum Price €pm	No. Channels	Average price per channel ** €pm
Ondigital	11	14	0.8	58	31	1.9
SkyDigital	11	16	0.7	61	58	1.1

* including free services ** including Film Four, excluding MUTV

However if the amount of time spend viewing each channel is taken into account then the advantage of the main terrestrial channels becomes more visible, see table J below. Including the BBC channels in any digital package brings down the perceived cost of viewing. The same applies to the advertising channels.

Table J: Comparative price per hour of viewing

Service	98/99	97/98
BBC	.08	.07
Sky multichannels	.35	.30
All cable and satellite	.32	.32
Video hire	.99	.96

Source: BBC

According to BSkyB, 98% of its subscribers take the top programme package rather than the cheaper mini-tiers. Ondigital also reports that more than 90% of subscribers are remaining with the top-tier of programming after the introductory promotional offer ends.

1.3 Operators and market structure

The most important operator of digital TV is the BBC. It has the largest expenditure on both digital broadcasting and the internet. The BBC offers five main channels free to air : BBC1, BBC2, BBC Choice, BBC Knowledge and BBC News 24. In addition there is a parliamentary channel which is audio only, and BBC text. These channels are available to all terrestrial and cable viewers in the UK. The BBC has been actively promoting digital on all platforms and has not favoured terrestrial. Its 'BBC Digital' logo has been instrumental in increasing awareness of the technology shift.

For viewers outside the UK there are two main additional BBC channels – BBC Prime and BBC World. These were the first BBC channels to carry advertising. In the US, there is a BBC USA service. These services are intended to bring revenue into the domestic services of the BBC. In addition, the BBC has combined with US companies such as Discovery and Flextech in joint programming ventures.

The BBC finds itself having to increasingly justify the licence fee. This has led to a shift, in the opinion of many analysts, towards more populist programming. The criticism of the BBC has reached new levels with the possibility of a digital licence fee. The BBC has insisted that it can both keep a high quality of programming and appeal to the majority audience. So far the BBC has managed to maintain its audience share – and, after ITV, is still the most popular programming in multi-channel households.

The crisis facing the BBC is the continuing loss of sports programming. It has been unable to satisfactorily keep its full list of sporting events and develop the digital services. The BBC has even suggested to the government that additional funds should be made available for the production of costume dramas, which are very popular.

1.3.1 Concentration of the pay-TV market

The growth of the payTV market has enabled digital television to launch successfully. BSkyB has taken full advantage of this trend with the launch of SkyDigital. However, the monopoly power that BSkyB once enjoyed in payTV is starting to be eroded. This is a medium to long term process because Sky still controls all the most valuable rights. The main new player is ONdigital, the joint-venture of Granada and Carlton which are, in their own right, major players. On the whole, there has been a significant increase in the concentration of the media sector. The major transactions which have transformed the television market in 1999 (though still subject to regulatory review) include:

- ✓ Commercial broadcasting: Carlton/United News & Media
- ✓ Granada/Scottish Media Group
- ✓ Content/distribution: Flextech/Telewest
- ✓ Cable distribution: NTL / CWC
- ✓ Television rental: Granada / Thorn (Radio Rentals)
- ✓ Film/Sports rights: Vivendi stake in BSkyB

In addition there are number of consolidation vehicles in the television production sector e.g. The Television Corporation.

The number of new channels has also been very limited. Most of those available on digital were previously available on analogue. Carlton and Granada have produced some new channels for Ondigital but these are perceived as ‘fillers’ rather than as serious niche channels. Most of the extra capacity on satellite has been devoted to NVOD or Sky’s interactive multi-stream sports programming.

Sport programming rights are remain largely under the control of BskyB and the leading broadcasters. Even the terrestrial companies have been active in securing sports programming (ITV –Formula One Grand Prix; C4 – Test Match Cricket; C5 – European Football). Meanwhile the sports leagues and clubs have been keen to offer exclusive rights to broadcasters.

Each of the delivery systems has seen significant consolidation over the past year. The cable companies have not only combined together but have taken steps to acquire programming directly e.g. through the Front Row project where films are purchased directly from Hollywood. The proportion of cable customers which take the Sky premium movie channels has fallen from over two-thirds to less than half. Similar figures apply to Ondigital. Over 75% of Sky subscribers take premium channels. Around 60% of cable viewers regularly use pay per view.

Television Production

The market for independent production in the UK (estimated to be €2.4 billion) is not as successful as it might be. The advent of digital has not made much difference to the prospects of the independent production sector as far as primary rights are concerned. Firstly, the sector is not very profitable earning only about 19% of industry profits on the programme value chain[5]. Secondly, the UK is still a major net importer of television programming. The independent producers group, PACT, argues that the lack of performance of the sector is because of the oligopoly power of the broadcasters who offer restricted contracts. The expansion in the number of channels has not improved the bargaining power of the producers which remains inferior to the broadcasters.

Channel 4 is the most active in supporting the sector having commissioned 460 independent companies during 1999. ITV commissioned less than 10% of this figure although these were for larger productions. To position themselves for digital, all the broadcasters are building up their archives and export activities and are keen to secure all the follow-on rights to programmes. Therefore the prospects for the independent producers to capture extended programming rights are diminishing rather than increasing.The major broadcasters have used their secondary rights to launch the secondary programme market e.g. channels such as Granada Plus and UK Gold use repeats from Granada and the BBC respectively. Furthermore, a major production company, Planet 24, was purchased by Carlton. The potential consolidation of broadcasters puts more pressure on the independent production sector. Increasingly only the largest television production houses can survive independently and there has been a move to sectoral consolidation e.g. the Television Corporation.

[5] Department of National Heritage study 1997

It is in the area of secondary rights that there has been the most friction between the independent producers and the broadcasters. For example, under its standard production contracts the BBC pays repeat fees for a programme broadcast on BBC1 or BBC2. However, it does not pay repeat fees if that programme is broadcast on BBC Choice, the digital 'repeat' channel. Similarly, if an independently-produced programme is carried on BBC Choice it qualifies as part of the quota for independent production but not if it is repeated on BBC1 or 2. As a result of these types of problems PACT, has raised the matter with the Office of Fair Trading.

The Main Players

The competitive situation of the main players in the British pay-TV market (BSkyB, Ondigital and the cable companies) is discussed below

BSkyB

Sky channels can be received in 7m homes – around 30% of all TV households. The total number of Sky subscribers as at the end of 1998 was as follows:

- ✓ Satellite: 3,458,000
- ✓ Cable: 3,039,000
- ✓ Eire: 576,000

BSkyB controls 80% of premium payTV subscriptions in the UK. Its lead over Ondigital, the second placed operator, is strengthening as the demand for Sky programming increases, especially for Sky Sports 2. The cable companies are still reliant on Sky for their premium programming.

The provision of channels to terrestrial and cable is a profitable activity for BskyB since they do not directly incur the costs of establishing the customers, especially the cost of the set-top boxes. Sky is able to maximise the coverage of its channels over all delivery platforms whilst only needing to control satellite. However, since the cable and terrestrial operators need to pay a large margin to Sky they tend to prefer to promote their own premium channels. Thus, the revenue which Sky gains from satellite is much greater than that from cable and terrestrial. Subscribers to the latter may not take as many of the Sky programmes. Even though the number of cable and satellite subscribers is about the same, the majority of the revenue is from satellite subscribers. This is illustrated below. The turnover (€m) for the half year to the end of 1998 is broken down as follows:-

Satellite subscribers:	€778
Cable subscribers:	€186
Advertising:	€165
Other	€76
Total	€1205

Sky has always taken an active strategy. It buys the most attractive programming rights and then markets them aggressively. This is illustrated by a breakdown of BskyB's total costs of €1.038bn as follows:

Programming	57%
Transmission	7%
Marketing	17%
Subscriber management	11%
Administration	8%

It is clear that BskyB keeps overheads and technology to a minimum and focuses its efforts on programme acquisition, marketing and subscriber management. This makes BskyB a formidable competitor in comparison to the terrestrial broadcasters and telecommunications companies which have traditionally been overstaffed.

Ondigital

ONdigital is a newcomer to payTV and signifies the successful transition of the commercial TV companies from total reliance on advertising revenues to a more diversified revenue base. Although ONdigital has only achieved a modest impression on the market, it does pose a threat to SkyDigital which was obliged to offer some very low prices in response as well as give away the set-top box. The consumers are the main beneficiaries. ONdigital has not yet got fully into its stride and is expected to pick up market share once its transmission coverage is complete. A breakeven level of 2 million subscribers had been set by ONdigital. The start up costs for Ondigital were €48 million. At least another €200m will be spent until the end of 2000 in order to support the marketing campaign and to subsidise the cost of the set-top boxes.

The marketing strategy of Ondigital focused on content which cannot be obtained on satellite

The soccer European Champions league, Coronation Street specials and Emmerdale specials. However, once Ondigital was permitted to offer Sky Sports 1, 2 and 3 from November 1999 it was in a position to boast that it had the best sports offering of any platform combining content from satellite and terrestrial.

Carlton has combined with Retevision of Spain in order to launch digital terrestrial TV in the company Onda Digital in which it has a 7.5% stake.

Cable

Table K:The relative TV shares of the three dominant cable companies

MSO 1st Oct 1999	Homes passed M	Homes connected M	TV penetration rate %	Pay/Basic ratio %
Telewest*	4.236	1.074	25.3	116
CWC	3.970	0.848	21.4	145
NTL	3.782	1.115	29.5	91
Total	11.988	3.037	24.4	114

*including Cable London

The past few years have seen considerable consolidation in the cable sector (Table K). In 1998 the UK was reduced to just four main players : Cable&Wireless Communications (CWC), Telewest NTL and Cable London. 1999 has continued this trend with the merger between CWC and NTL to form an enlarged NTL under Barclay Knapp. This merger is subject to regulatory scrutiny and concessions regarding access to the cable networks may need to be granted if the merger is to be permitted. Telewest absorbed Cable London and tried to get the deal with CWC. The consolidation of the UK cable industry has come about rapidly for financial and commercial reasons:

- ✓ the franchises have not proved very profitable when compared to the huge investments required. Financial consolidation is a way of reducing overheads: too many cable companies had been set up originally on the regional franchise model.
- ✓ the fragmentation of the cable industry had complicated the choice of technology. The companies could not agree to a standard cable box or software. Decisions can now be taken with less risk of incompatibility between the cable companies. The ability to gain economies of scale in purchasing receivers is also significant.
- ✓ the exclusivity of the cable franchises will start to expire from 2001, thus eroding profitability further as competition enters.
- ✓ Cable television is operating in a competitive market with satellite and terrestrial so the regulators felt able to permit consolidation.

The interest from American investors in the UK cable industry has also remained buoyant. Microsoft made a 5% investment in NTL in early1999 and a 29.9% stake in Telewest in May 1999. Since Microsoft is a significant shareholder in both of the main cable groups, there were expectations that eventually NTL and Telewest would combine in some way. However, in late 1999 Telewest, having failed to get a deal with CWC, moved closer to a merger with the programming company Flextech. This move towards vertical integration rather than horizontal integration implied that there are still conflicting views in the UK cable market about the most appropriate technology for set-top boxes. There was no automatic move towards Microsoft solutions (as discussed later).

Whilst the number of cable subscribers is increasing, their share of payTV market remains modest. The cable companies control only about a third of payTV revenues. This figure is likely to decline in the short term as the payTV revenue grows rapidly for digital satellite and terrestrial. The cable companies are seeking the greater part of their revenue from telephony and have more telephony subscribers than TV subscribers.

The dependence on BSkyB for premium programming has begun to be eroded with Front Row, the PPV Film service organised by the cable industry. However, the cable companies could not all agree to support this venture so BSkyB has been able to ‘divide and rule’. But thanks to the positive trend observed in the number of subscribers to cable, the bargaining position of cable operators against BskyB is strengthening. They are poised to become the majority platform for BSkyB subscribers around the beginning of 2000.

1.3.2 Agreements between satellite operators, cable operators and DTT operators

BSkyB has the central role of premium programme provider to satellite, cable and terrestrial. As part of the settlement when it was excluded from the BDB consortium it was obliged to provide sports programming to Ondigital. Ironically, it cannot fulfil this requirement in respect of Sky Sports 2, which shows England football internationals, for regulatory reasons. The DCMS has defined a points system, which restricts the number of Sky channels which can be shown on digital terrestrial. This is intended to promote competition by restricting the influence of BSkyB.

BSkyB has also entered into an agreement with Open, the consortium for interactive television whereby new subscribers receive free set-top boxes. This subsidy is provided on the condition that consumers allow their telephone to be connected to the set-top box. This has proved to be a very successful arrangement and the take-up of the new SkyDigital interactive sports service has been high.

The pricing of BSkyB packages supplied to the cable companies is defined by a ‘rate card’. BskyB suspended this card following the complaint by the cable companies to the competition regulator OFT in respect of ‘deep discounting’. This signalled Sky’s strength in the market for the supply of programming.

The level of vertical integration is less than in the analogue period. The introduction of the generic DVB transmission standard has left less room for proprietary niches. The practice of vertical integration was dealt a severe blow when the competition regulator refused to allow BSkyB to buy Manchester United. BSkyB has been obliged to take measures to protect its supply chain. The clearest example is the way in which it has obtained stakes in less famous Premier League clubs eg Leeds United. NTL took a different route with Newcastle United Football Club by purchasing the media rights having failed to purchase the club.

The market is thus reaching maturity. It is expected that when the rights to the soccer owned by BSkyB begin to unwind in 2001 then the market will make another correction to reduce the market power of the leading payTV operator. Essentially the ‘first mover’ advantage of BSkyB is being eroded.

1.4 Technical issues

The major technical issues regarding the launch of digital television have been resolved. The current issue is the speed of transition to all-digital reception. In effect this is the question whether consumers will be using integrated digital TV sets or set-top boxes for reception on their main TVs. The growth of satellite and cable subscriptions with their ‘free’ set-top boxes has ensured that the analogue TV market is still strong. Furthermore, the policies of Ondigital have favoured the set-top box approach.

Integrated digital TV sets

IDTVs although they have been available since the beginning of 1999 have not achieved significant penetration levels. In summer 1999, cheaper IDTVs priced at around €500 were to become available courtesy of a subsidy from Ondigital conditional on taking out a subscription. However, Ondigital backed away from supporting TV sets in favour of a set-top box campaign. The typical retail price for an IDTV (28” Hitachi widescreen) is €1350 and prices can be much higher. Not surprisingly, this has continued to dampen the take-up of IDTVs. In October 1999, the ITC required Ondigital to commit to a firm timetable for the introduction of the plug-in Common Interface socket [6] on TV sets. A final implementation date of May 2000 has been set. Meanwhile the practical problem faced by most purchasers of IDTVs is that they are only able to receive free-to-air programming.

So far the driving force towards conversion to universal digital reception has come from payTV rather than the expected replacement cycle of the TV set. The consumer acceptance of the ‘free’ set-top box arrangements may delay the IDTV market development. Consumers have less incentive to buy a separate IDTV if they already have a set-top box. Furthermore, the specifications of a set-top box are improving so quickly that any IDTV would need to be upgraded after three years. These considerations have given rise to concern by the ITC about the delays in the transition to an all-digital terrestrial spectrum since consumers may continue to purchase analogue TV sets The problem this poses regulators is that the penetration rate for set-top boxes and IDTVs may never achieve 95% - the government target before considering switch off.

The rental market presents another way forward to complete the transition to digital. The rental sector consolidated (subject to regulatory review) at the end of 1999 when Box Clever was formed from the merger of Granada and Thorn to create a virtual monopoly of the rental sector, accounting for some 7% of TV sales volume. With 1000 outlets and 2.5 million customers it is ideally placed to introduce people to digital television. The most innovative market offering removes the risk of technology change. A Philips 70cm widescreen IDTV may be leased at €56 per month including the subscription cost to Ondigital. This leasing arrangement allows for a good customer service level as well as the option to upgrade to another, more expensive, TV model every two years.

[6] Condition 10(6) of the multiplex service licences requires that Ondigital should do all that it reasonably can to facilitate reception on open-standard digital television sets and not to discriminate against any consumers who purchase these sets.

Decoder issues

Set-top boxes may also be purchased without taking a subscription to one of the payTV services. These are not available from the main electronics retailers. Models from Nokia and Philips cost around €500 from specialist outlets. Neither the main terrestrial broadcasters nor the payTV operators promote these boxes. Therefore consumers are obliged to decide which of the digital platforms they want to choose in order to benefit from a subsidy. Each of the main digital platforms has chosen a different Conditional Access System and API. However, these are compatible to a minimal level defined by the ITC which had published guidelines on interoperability in September 1998 in respect of electronic programme guides and APIs. There was some corporate nervousness about the next stage of software development – interactivity. In June 1999, the News Corporation considered taking a stake in OpenTV (then jointly owned by MIH, Sun and Thomson) which supplies the API used by Sky Digital. This was seen as protecting Sky from losing control of a vital gateway. However, Sky passed over the opportunity and in November 1999 OpenTV was floated very successfully on NASDAQ.

Digital decoder systems

Digital Service	Conditional Access system	Application Programming Interface
SkyDigital	Videoguard (NDS)	Open TV
Ondigital	Mediaguard (SECA)	Mediahighway (SECA)
Telewest	Telewest	Liberate

The cable companies are balanced between going for a common standard set-top box, or having their own proprietary set-top box for their franchise areas. The frequent changes in ownership of the cable companies and their shifting alliances have not helped them to stabilise their strategies. The cable companies have resolved into two groups – NTL/CWC and Telewest. The situation regarding the technology of the cable companies is closer to resolution. There was the possibility that Microsoft, which had built up a substantial equity presence in both NTL and Telewest during the year, would try to infiltrate its own software – TVPAK. Instead, Telewest launched its digital services in October using an interactive television system developed by the Californian based company, Liberate Technologies. The main feature of the approach is the ability to combine digital television with video on demand and telephony.

1.4.1 Widescreen (16:9)

Widescreen has had a promising start with satellite broadcasts, but the situation with terrestrial is mixed. Widescreen has played a role in the marketing of film services. Premier Widescreen from Sky and FilmFour from Channel Four are the two leading ‘authentic’ film channels. In mid 1999 BSkyB increased the number of 16:9 ‘screens’ to two in response to consumer feedback. As the proportion of films viewed in digital expands beyond the current level of 20% it is expected that Widescreen will be one of the ways in which the digital platforms will be differentiated. Pay per view is not currently displayed in Widescreen.

[7] ITC press release 85/98

The format of the digital terrestrial offerings depends upon the time of broadcast, the programme, the channel and even the transmitter. As a general observation, the BBC and Channel 4 are the most advanced in the introduction of Widescreen. The BBC produces about 30% of its output in widescreen and even higher during primetime. C3 and C5 are introducing Widescreen more slowly, perhaps reflecting the preferences of their commercial audiences. Some transmitters have not equipped with the appropriate digital feeds e.g. due to planning permission delays.

There is also a difference between the aspect ratios on digital-only channels and analogue simulcast channels. Whereas the former will often display true 16:9, the latter are generally carried in 14:9 format. There have been aesthetic problems with the Widescreen TV displays due to the programmes switching between one format and another. Much news output is still carried in 4:3. These are seen as transitional problems and are gradually being solved.

The main drawback to Widescreen broadcasting is the relatively low penetration of 16:9 TV sets (estimated 318,000 at the end of 1998). This market is slowly taking off particularly with the entry of cheap integrated digital TV sets expected in 2000. Many of these models are 16:9 which should encourage consumers to take advantage of the opportunities of digital widescreen.

1.4.2 Portable reception

The possibility for portable reception has been an indirect message of the marketing campaign of ONdigital. The marketing slogan is ‘No dish. No cable. Simply an aerial.’ The emphasis is on using a normal TV aerial – whether roof mounted or set-top mounted. Given that there is still subnational coverage of digital terrestrial transmissions, the emphasis of the operators is to complete coverage rather than to increase the density of coverage.

1.5 Conclusion

On the anniversary of its launch in October 1999 digital television has been a great success achieving over 1.7 million subscribers of which 20% are terrestrial. The total for the end of 1999 is expected to be over 2 million digital subscribers. With the Q4 launch of digital cable it is anticipated that the UK will reach a higher proportion of digital TV households during 2000 than any other country in the world.

BSkyB has announced that its analogue satellite services would cease by 2002. The government has targeted terrestrial analogue closure between 2006 and 2010 and has set two main conditions before this can be met: affordable reception equipment must be in 95% of homes and digital coverage must match that of current analogue coverage. There are a number of factors that may slow this process: delays in industry consolidation, a digital licence fee, access disputes and consumer preference for set-top boxes rather than integrated digital TV sets.

There have been an unprecendented number of large takeovers/mergers many of which may be subject to regulatory intervention. If all these transactions go ahead it will involve considerable deregulation of the UK media market and it is likely that the rate of consolidation will continue with larger mergers in 2000. This could lead to one large cable company and one large commercial broadcaster in the market alongside BSkyB and the BBC. On the other hand, regulatory intervention may lead to delays in implementing the digital market as the companies focus on fighting for market share rather than increasing the size of the market.

The Government has not made a decision regarding a digital TV licence for the BBC. If the fee is higher than the analogue licence it would tend to dissuade people from purchasing digital. A decision is expected in early 2000.

Access disputes have led to some consumer dissatisfaction and presented complex challenges to the regulators e.g. the refusal, on commercial grounds, of ITV to supply programming to SkyDigital. Conversely, content restrictions were eased in order to permit Ondigital to carry more sports programming from BSkyB. Nor are the service access issues about television. The ‘Open’ interactive service is not available to terrestrial and cable users – another issue of potential regulatory concern.

The promotion of free set-top boxes from the payTV operators has taken away the integrated digital TV set market. The price of IDTVs for free-to-air viewing remains too expensive for the mass market. The government has expressed fears that the transition to digital is being driven primarily by the marketing push of the payTV operators rather than by equipment replacement.

The introduction of ADSL and video-on-demand services in 2000 is expected to provide another boost for digital television as the major telecommuncations companies enter the market for pay TV and transaction revenues. The advent of unmetered internet access combined with a huge increase in the number of internet users in the UK is also likely to stimulate the market for internet-delivered audio-visual services.

2 Key figures for the UK market

2.1 Country fundamentals

	1993	1994	1995	1996	1997	1998	1999
Population (millions)	58.2	58.4	58.6	58.8	59.0	59.2	
Households (millions)	22.9	23.2	23.9	24.1	24.3	24.5	
GDP (in Euros billions)	996.4	1004.0	1062.2	1096.6	1134.6	1227.4	

2.2 Equipment

As of 31 of December	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
TV households (millions)	22.2	22.4	23.4	23.6	24.0	24.2	
TV households (% of total households)	*96.9%*	*96.6%*	*97.9%*	*97.9%*	*98.3%*	*98.8%*	
TV Households with 2 TV sets or more (millions)	11.5	11.6	12.6	13.5	14.1	15.56	
TV Households with 2 TV sets or more (% of TV Households)	*51.8%*	*51.8%*	*53.8%*	*57.2%*	*58.8%*	*64.3%*	
TV Households with 16:9 Television sets (millions)	0.028	0.053	0.088	0.11	0.25	0.318	
TV Households with 16:9 Television sets (% of TV Households)	*0.1%*	*0.2%*	*0.4%*	*0.5%*	*1.0%*	*1.3%*	
VCR Households (millions)	17.0	17.9	18.6	19.2	19.9	20.2	
VCR Households (% of TV Households)	*76.6%*	*79.9%*	*79.5%*	*81.4%*	*82.9%*	*83.4%*	
Digital STB Households (millions)	0	0	0	0	0	0.3	
Digital STB Households (% of TV Households)	*0%*	*0%*	*0%*	*0%*	*0%*	*1.2%*	
IDTV[8] Households (millions)	0	0	0	0	0	0	
IDTV Households (% of TV households)	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
Digital Households[9] (millions)	0	0	0	0	0	0.3	
Digital Households (% of TV households)	*0%*	*0%*	*0%*	*0%*	*0%*	*1.2%*	

[8] Integrated Digital TV Set

[9] Sum of Digital STB homes and digital IDTV Households

2.3 Access to DTV

Cable

	1993	1994	1995	1996	1997	1998	1999
Home passed (millions)	2.9	3.6	5.6	7.3	10.7	11.9	
of which digital[10] (millions)	0	0	0	0	0	0	
Home passed (% of TV households)	*13.1%*	*16.1%*	*23.9%*	*30.7%*	*44.6%*	*49.2%*	
of which digital	0	0	0	0	0	0	
Analogue Basic Subscribers (millions)[11]	0.7	0.8	1.4	1.7	2.4	2.8	
Digital package subscribers (millions)	0	0	0	0	0	0	
Analogue Basic Subscribers (% of TV households)	*3.2%*	*3.6%*	*6.0%*	*7.2%*	*9.9%*	*11.7%*	
Digital package subscribers (% of TV households)	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	

Satellite

	1993	1994	1995	1996	1997	1998	1999
Satellite households[12] (millions)	2.7	3.1	3.6	4.1	4.2	4.4	
Satellite households (% of TV households)	*12.2%*	*13.8%*	*15.4%*	*17.4%*	*17.5%*	*18.0%*	
Satellite subscribers[13] (millions)	2.400	2.700	3.100	3.400	3.600	3.508	
Satellite subscribers (% of TV households)	10.8%	12.1%	13.2%	14.4%	15.0%	14.5%	
of which digital (millions)						0.225	
of which digital (% of TV households)						*0.9%*	

[10] Homes passed with access to digital services

[11] Subscribers to the lower level of service

[12] Households equipped with a dish

[13] Households subscribing to a pay package

Terrestrial TV

	1993	1994	1995	1996	1997	1998	1999
Analogue Pay-TV services							
Pay-TV subscribers (millions)	0	0	0	0	0	0	
Pay-TV subscribers (% of TV households)	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
Digital TV services							
Homes covered (millions)	0	0	0	0	0	16.0	
Homes covered (% of TV households)	*0%*	*0%*	*0%*	*0%*	*0%*	*66%*	
IDTV households (millions)	0	0	0	0	0	0	
IDTV households (% of TV households)	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
Pay-TV households (millions)	0	0	0	0	0	0.07	
Pay-TV households (% of TV households)	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	

2.4 Television market estimates

Millions Euros	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Analogue TV Market							
Public funding	2526.2	2628.0	2732.0	2875.0	3017.0	3232.5	
Advertising[14]	2849.1	3107.0	3367.0	3598.0	3997.0	4717.4	
Subscription[15]	1003.4	1066.9	1539.3	1990.2	2464.9	2828.9	
Total analogue TV	6378.70	6801.9	7638.3	8463.2	9478.9	10778.8	
Digital TV Market							
Public funding	0	0	0	0	0	0	
Advertising	0	0	0	0	0	15.0	
Subscription	0	0	0	0	0	9.4	
Total digital TV	0	0	0	0	0	24.4	
TV Market							
Public funding	2526.2	2628.0	2732.0	2875.0	3017.0	3232.5	
Advertising	2849.1	3107.0	3367.0	3598.0	3997.0	4732.4	
Subscription	1003.4	1066.9	1539.3	1990.2	2464.9	2838.8	
Total TV market.	6378.70	6801.9	7638.3	8463.2	9478.9	10803.7	

** "**Public funding**" comprise grants and licence fees; "**Advertising**" also includes sponsoring expenditures whereas "**Subscriptions**" cover subscriptions to the basic multi-channel package as well as subscriptions to Premium pay-TV services.*

[14] Including advertising on cable and satellite channels

[15] Subscription to basic cable and pay-TV