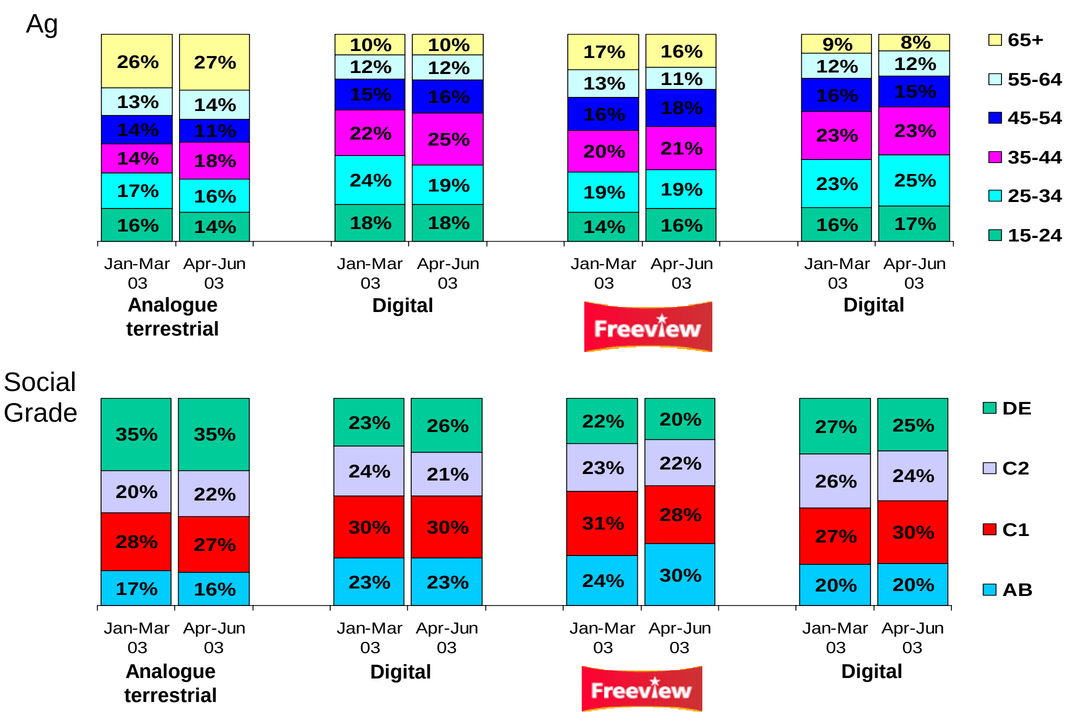
Who does digital TV currently appeal to?

64. Compared to the remaining analogue-only audience, the profile of cable and digital satellite viewers is skewed toward young and mature families and ABC1s. As such, adopters of these platforms are atypical viewers. Fewer than 30 per cent of 10-15 year old children live in an analogue household[6]. When these children leave their parents' homes they will probably take their multichannel habits with them. Over time this will drive digital take-up, but its effect will be negligible by 2010.

65. However, the Freeview profile is largely in line with the general population and, as such, Freeview is bringing a new, older audience into digital.

Fig. 5: Current platform demographics



Source: Pan-BBC Tracking Survey : individuals 15+

[6] Source: BSkyB.

Fig. 6: The different appeal of each platform

	SKY	DTT	CABLE
Respondents	*675*	*1119*	*230*
Special offer / price	35%		
Best subcription package	29%		18%
Greatest number of channels	22%		18%
Better sport	23%		9%
Better film	16%		9%
Recommendation of a friend	23%		9%
Better picture quality	23%	20%	
Wanted more channels		50%	
Wanted more channels but didn't want to pay monthly		54%	
Cheaper to get started		48%	
Didn't want dish / don't like sky or cable		30%	
Couldn't get cable		16%	
Cheaper telephone / one connection			50%
Internet access			9%
Had cable. Wanted digital			35%
	About price and choice	**About choice and no contract**	**About one connection for everything**

Source: GfK, June 2003

66. Achieving switchover within the Government's timescale will require re-focusing from driving voluntary digital take-up for primary TV sets to:

a) addressing the barriers to adoption;
b) persuading digital viewers to convert secondary sets;
c) preparing viewers for switchover.

Barriers to adopting digital TV

67. Barriers which could be addressed fall into two camps:
    - consumer barriers
    - technical barriers

Consumer barriers

68. There are several reasons why analogue-only viewers have not yet adopted digital TV (and the BBC is conducting audience research to better attribute and quantify these characteristics):

    a) they are interested in digital TV, but can't **afford** it
    b) they are **confused** about what digital TV might offer
    c) they believe they know what digital TV could offer them – but still **reject** it
    d) they are interested in digital TV, but are **waiting for Freeview** to reach them
    e) they have **special needs** - digital TV is just too difficult to use.

69. The BBC is carrying out further analysis to get an understanding behind the barriers towards digital TV and how they might be addressed.

70. Those who haven't already got digital will be hopefully persuaded that digital TV is worth having by a combination of continuing, high profile digital marketing, by the BBC and others, and continuing investment by broadcasters in attractive, high quality programming on their digital channels. Premieres, exclusives, new quality programming and programmes to fit around lifestyles are good drivers. There will also need to be continuing cross-promotion from analogue channels - digital programming needs to be well signposted to analogue viewers if it is to drive digital take-up.

71. Those who are already interested, but who still cannot afford it despite the considerable reductions in price of digital boxes to get Freeview, will helpfully either be able to afford digital TV at some point or will be addressed by Government action.

72. Consumer research suggests that the BBC's digital services have played an important rôle in the take-up of free-to-air digital TV and, in particular, the rapid adoption of Freeview, where the BBC services comprise over a quarter of the extra channels available. Evidence suggests that take-up of free-to-air digital TV is being encouraged by the BBC services and is largely additional to the projected pay-TV take-up over the last couple of years rather than being a substitute. BBC FOUR is likely to have the largest proportionate impact on digital take-up and audience research[7] shows that BBC THREE is now the third

[7] Conducted on behalf of the BBC in February-March 2004 by MORPACE International.

most important channel in terms of driving take-up of Freeview. But the two BBC childrens' channels, CBeebies and the CBBC channel, are likely to have the largest absolute impact, appealing to the significant number of ABC1 households with children which were resisting upgrading to digital. The absence of advertising and imported animation on these channels is likely to have been attractive to this group.

73. In addition to cross-promotion and below-the-line marketing by the broadcasters, the fairly widespread perception amongst those who haven't got digital TV that there is little worth watching on digital channels could be further tackled if TV listings gave as much prominence to high quality programming on digital channels as they do to programming on analogue channels. At present, television reviewers often only highlight a programme when it appears on its second run on an analogue channel, even though most viewers now have access to the programme's first run. This discourages consumer adoption of digital TV and investment by commercial broadcasters in first run, high quality programming destined for digital channels.

74. Continued marketing of the benefits should convince many of those who haven't got digital that it is worth upgrading to, and that widespread fears that digital channels will just offer lots of poor quality channels are misplaced. But research suggests that many analogue viewers are, quite simply, satisfied with the four or five channels they can receive. Better picture quality (for some), widescreen or interactive TV are insufficiently attractive to encourage most of these resisters to purchase digital receivers – even at less than £50 each.

75. For as long as many analogue viewers perceive first-run, high-quality originated programming to be almost exclusively available on the analogue channels, then unless the public service broadcasters re-balance the provision of programming between their analogue and digital channels, many of those viewers are likely to see insufficient value in acquiring additional digital channels to warrant incurring any cost to themselves.

Technical barriers

76. There are several technical barriers which need to be addressed:

a) Freeview coverage;
b) Secondary TV sets;
c) Aerial inadequacies;
d) Digital timeshifting
e) Multiple Dwelling Units
f) Ease of use/ consumers with special needs
g) Digital self-helps.

Freeview coverage

77. It is essential that Freeview coverage be considerably improved if switchover is not to be delayed. Freeview particularly appeals to viewers who reject satellite or cable and should be the easiest digital service which could be received on portable TV sets. There are already many analogue viewers willing to upgrade to digital if they could receive Freeview. Greater terrestrial coverage could also enable innovative multimedia mobile services to be introduced at a later date.

78. Once analogue services have been withdrawn, the DTT transmission powers increased and the transmission mode changed on the Digital 3&4 and SDN multiplexes, about 95 per cent of households could be reliably covered from the current 80 transmitters. However for several reasons this would not be a satisfactory outcome:
    - more than 4 per cent of households would have to rely on satellite reception;
    - the 95 per cent Freeview coverage would resemble a "swiss cheese", reducing faith in the service, and switchover generally, from retailers and potential Freeview adopters; and
    - because most relay transmitters would not be converted to digital, many viewers within coverage would only be able to receive Freeview by pointing their aerials to a different transmitter – introducing a serious inconvenience (particularly for the elderly and disabled) and, potentially, additional cost.

79. Consequently, there would be greater support for switchover from viewers, manufacturers and retailers if there was a clear commitment from the public service broadcasters to substantially replicate analogue coverage with DTT coverage.

80. Subject to the points below, the BBC supports this. But the challenges should not be underestimated. A commitment to substantially replicate analogue coverage for the public services, which would require considerable further investment in support of the Government's digital strategy, would require collaboration from the other broadcasters and the relevant multiplex operators.

81. Investment which helps to bring forward switchover, and enable the re-investment by broadcasters of their analogue distribution costs into programming, is worth making. But there would be a considerable degree of risk attached to this investment. Some of this risk would relate to the need to agree acceptable commercial terms with the relevant transmitter providers. That would be a matter for the multiplex operators to take a judgement on, although the current uncertainty surrounding the outcome of OFCOM's proposed changes to the regulation of the broadcasting transmission market does not help.

82. However the majority of the risk of making such a commitment to improving DTT coverage relates to Government decisions.

Consequently the Government could greatly increase the likelihood of the multiplex operators committing to this investment by minimising those risks where it would be within their gift to do so. This could be achieved by the Government, in return for DTT build commitments, providing accompanying commitments on the following key issues:

- a guarantee that digital switchover would be completed to an agreed timetable, with the Government compensating the broadcasters for costs incurred attributable to any Government decision to delay any part of the agreed switchover programme;

- acceptable arrangements in respect of spectrum and licence payments and relevant aspects of the BBC Charter review; and

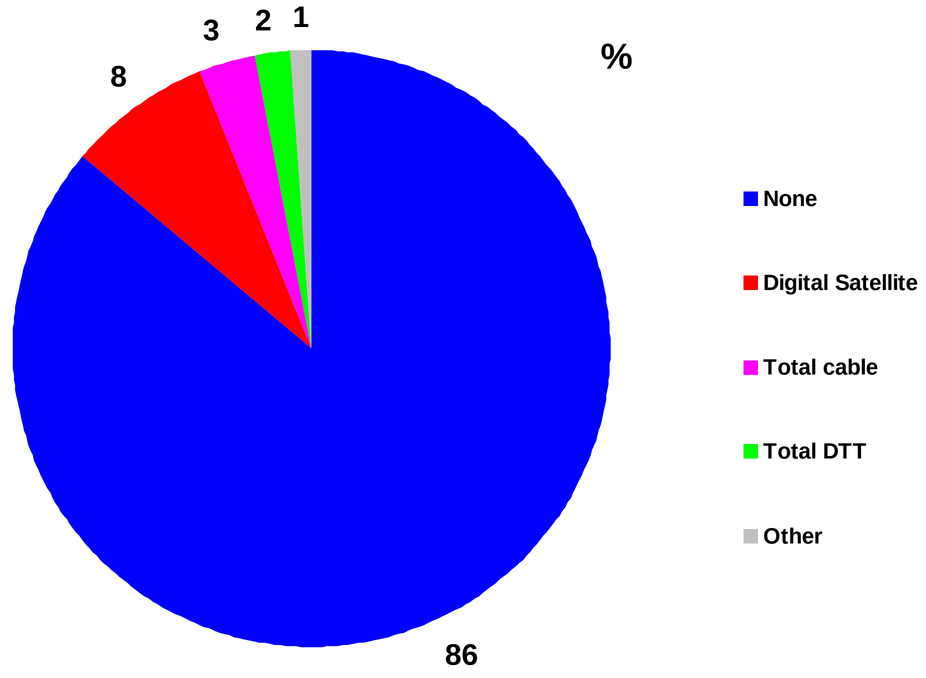
- an implementation plan with clear, respective responsibilities for the Government and broadcasters and which was not dependent upon high power simulcasting of both analogue and digital signals.

Secondary TV sets

83. In addition to persuading analogue viewers to upgrade to digital for the primary TV set it is likely that, unless a significant proportion of secondary TV sets have also been converted by the time that analogue channels start to be withdrawn, there will be considerable consumer resistance. Yet so far, although there is some evidence that digital boxes to get Freeview are being used to convert second sets (even where the primary set is connected to satellite or cable), and BSkyB has had a degree of success selling second subscriptions (to just over 3 per cent of its subscriber base[8], although this is increasing as a result of the success of selling Sky+ for primary TV sets), the vast majority of digital viewers have not converted second sets (see fig. 7 below).

[8] As at 31 December 2003, source: BSkyB.

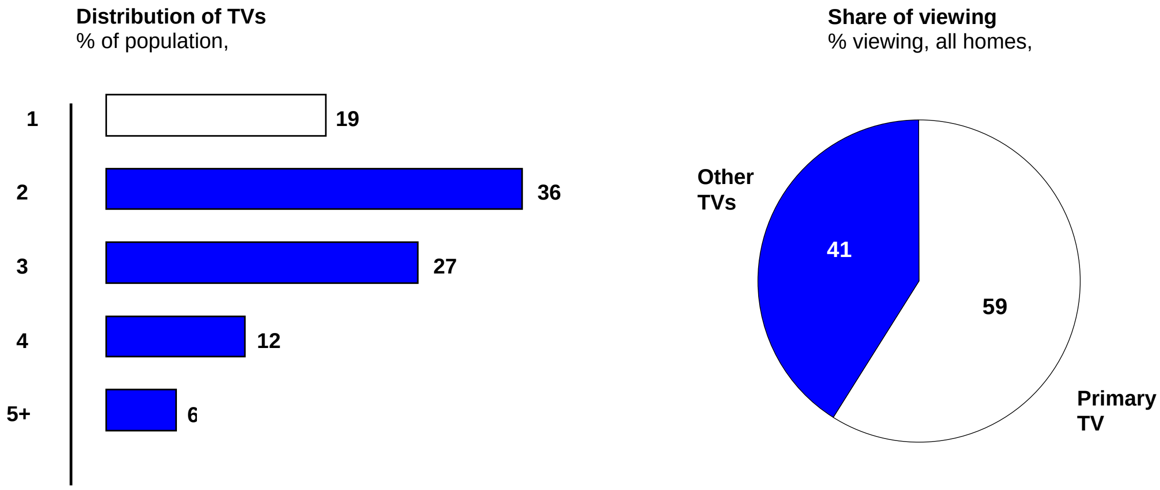
Fig. 7: Second digital sets are only in 14 per cent of homes



Base: All in multichannel homes, Sep-Nov 2003

84. Some non-primary TV sets are probably little used and, faced with the cost of conversion, their owners may simply decide to do without them. Converting non-primary sets in total would matter less as a precursor of switchover if many of them contributed little to household viewing. But as fig. 8 shows, that is not currently the case. And only about 16 million of the estimated 90 million total analogue TV sets have been converted so far.

Fig. 8 : The importance of non-primary TV sets



Source: ITC: "The Public's view, 2002"; Daily Life

Aerial inadequacies

85. Following recent and upcoming consultations, planning regulations for satellite dishes may be relaxed (although it is likely that there will still be some viewers who will be frustrated for this reason in their desire to adopt digital satellite). However, there are still several challenges in respect of roof-top aerials which need to be addressed prior to the start of the switchover process, principally:

a) some viewers will need to invest in wideband aerials in order to have satisfactory reception of "out of group"[9] DTT multiplexes (which, in some cases, may be public service multiplexes). Although this problem is more pronounced pre-switchover, it will probably still exist post-switchover too). Yet house builders are still installing aerials which are not wideband in areas where they would be recommended and it is not currently easy for viewers to identify which aerials are "digital ready";

b) if Digital 3&4 and SDN do not undertake a change of transmission mode (see paragraph 154), there are likely to be many viewers currently relying on set top aerials who will need to come to alternative arrangements . Given the poor state of many domestic roof top aerials, many such viewers may also have to replace these if they wish to receive DTT post-switchover;

c) it is unclear whether the existing number of aerial installers will be up to the task of replacing all of the aerials necessary, especially if

[9] Analogue TV channels were planned in groups of 4 channels using frequencies reasonably close to each other. To save costs, many consumers' TV aerials are not "wideband", but are only suitable for receiving the local group of channels. Pre-switchover, DTT multiplexes have often had to be placed "out of group" such that many consumers would have to replace their aerial to have satisfactory reception of them

millions of consumers leave upgrading their aerials to the last minute.

Digital timeshifting

86. The additional complexity of watching and taping digital TV, in comparison to the familiarity and ease of watching and taping analogue (aided by ubiquitous VIDEO Plus+® codes), does not present a barrier to adoption of digital TV for most viewers as the added complexity does not become apparent to those viewers until after they have upgraded. But where digital households continue to use analogue VCRs to record from analogue broadcasts, that can only increase those households' resistance to the withdrawal of their analogue signals.

87. There are, as yet, no VCRs with digital tuners. However, receivers with twin tuners and integrated hard disks (Personal Video Recorders, PVRs – see paragraph 98) or DVD recorders will go some way to addressing consumers' need for easy timeshifting of digital programming. But because of the challenging switchover timescale, they are unlikely to provide a timely enough panacea. Despite the early success (and very high subscriber approval) for Sky+, and the launch of a growing range of DTT-based PVRs (whose consumer appeal will be considerably helped by the nationwide launch of 7-day service information), it is unlikely that all households which currently use VCRs for recording (as opposed to just playing back pre-recorded tapes) will have acquired such recording technology by 2010[10].

Multiple Dwelling Units

88. It is estimated that about 20 per cent of UK viewers live in blocks of flats (Multiple Dwelling Units, MDUs), either purpose built or converted houses. In many cases such viewers are required to make use of communal television distribution systems due to restrictions (either imposed by the landlord or planning requirements) on the fitting of dedicated aerials or satellite dishes. The majority of these distribution systems would have to be upgraded to allow the distribution of digital services and the DCMS has already published guidance on this[11].

89. An alternative method of ensuring such viewers could receive digital channels would be to improve their likelihood of having reliable DTT reception via set top aerials. To that end adding coverage predictions for urban areas would be a useful enhancement to the postcode database. There are also a range of technical options which broadcasters and manufacturers could implement (see paragraph 150) which would also contribute to this objective pre-switchover.

[10] Datamonitor estimates that by 2007, planned to be the start of the switchover process, up to 25 per cent of households will have acquired PVR technology.

[11] *Digital TV Information for Landlords*, published 10 January 2002.

Ease of use/ consumers with special needs

90. Although millions of viewers have adopted digital TV, and are enthusiastic about what it offers them, there are also millions of viewers who perceive that current equipment designs would make digital TV more difficult for them to use than their existing analogue equipment. Many of these will be viewers with impaired vision or hearing. As the decision to upgrade the primary TV set to digital is sometimes taken by only one member of a household, there may also be many viewers in digital homes who are put off by the complexity and, as a result, continue to rely on analogue signals.

91. Recent research undertaken on behalf of the DTI[12] found that 38 per cent of users saw aspects of setting up digital TV, including connecting up all of their equipment (including VCR) so that it all worked together, as causing problems. Using digital TV , even for simple viewing of linear channels, was seen by many as being too difficult. Attempting to use interactive features, and the need for multiple remote controls, were also found to be confusing. Older viewers were particularly likely to find digital TV difficult to use. Quite simply digital TV, with its greater reliance on remote controls and on-screen menus (even for basic use), was found to be more exclusionary than analogue TV: 7.1 per cent of the population would be unable to use one of today's set top boxes for simple everyday viewing, compared to only 2.7 per cent with analogue TV.

92. If switchover is to be achieved by 2010 these concerns must be addressed. Manufacturers and platform operators could be encouraged to improve instructions for installation and use and to make their on-screen interface and remote controls more intuitive. A simple change such as ensuring that remote controls included a raised “spot” for the number 5, as telephone keypads have done for many years, could aid some viewers considerably. The initiative shown by the VISTA project[13], with project collaboration from BSkyB and the ITC, to develop a “talking EPG” is to be welcomed.

Digital self-helps

93. For areas outside the reach of the broadcasters’ analogue networks, the DCMS operates a scheme supporting over 330 local communities to provide their own analogue television coverage, via small scale

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12 *Digital television for all - a report on usability and accessible design* by The Generics Group, 2003.

13 The VISTA (Virtual Interface for a Set Top box Agent) Project conducted research during 2002-03 towards the development of a complete virtual human interface for digital television. It was intended that a virtual human would be combined with voice input and output systems to create an easy-to-use prototype interaction system for elderly and visually impaired digital television viewers. See http://www.vista-epg.org.uk/

analogue relay stations[14]. Although the scheme is still open to new applicants, in practice no applications have been received for some time, and the number of schemes renewing their quadrennial licences is falling. It is likely that many of these communities have taken the opportunity to close their schemes and affected households have migrated to digital satellite, which has implications for the practicality of building DTT transmitters on some of the analogue relays serving very small communities.

94. Until recently this scheme was also available to commercial operators (e.g. developers and wind-farm operators) whose activities removed access to analogue television from local communities. However the scheme is now closed to commercial applicants since digital alternatives are available in every case.

95. It is not yet clear whether digital self-helps will have a rôle to play in the future, since this will depend in part on the extent to which the public service multiplexes are rolled out[15] - for anything other than universal conversion, self-helps would be an anomaly - and the relative economics for the local community compared to individual direct reception of digital satellite. It is likely that digital satellite would prove to be more economic in virtually every case, although the Government will need to work with BSkyB, and those public service broadcasters which were still encrypted as the switchover process started, to ensure that all of the public service channels were available via satellite to those households which did not wish to pay monthly subscriptions.

[14] OFCOM and the BBC provide technical support (including frequency planning) to these self help groups.
[15] It isn't viable for a local community to feed a DTT transmitter from digital satellite.