

# REPORT OF THE DIGITAL TV PROJECT

## Note

**The Final Report was submitted to DCMS and DTI Ministers on 26 November 2004. Since then, progress has been made on a number of the issues discussed in the report. In particular, cost and benefit figures derived from the cost-benefit analysis model have now been superseded by the revised estimates published by DTI and DCMS Economists on 10 February 2005. This is available on [www.digitaltelevision.gov.uk](http://www.digitaltelevision.gov.uk) along with other key project documents.**

# **REPORT OF THE DIGITAL TV PROJECT**

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## EXECUTIVE SUMMARY

The Digital TV Project's objective is to enable Ministers to decide whether, how and when to proceed to digital switchover – replacing analogue television in the UK with digital transmission – and to help prepare for a successor project to do the job.

The benefits of digital switchover are such that the Government decided to commit to the policy in September 2003, on the strength of the work of the Digital TV Project and following extensive consultation with stakeholders. The Cost Benefit Analysis now indicates that the Net Present Value of completing switchover by the end of 2012 is of the order of £2.3 billion.

The recommended strategy for achieving switchover is through a Managed Migration, in which Government, Ofcom, broadcasters and the reception Supply Chain collaborate – with full information being provided to consumers at each stage. A phase of voluntary switching is essential, as is a substantial period of notice before the transmitter switchover is implemented, region by region. Explaining the benefits and the need for a timetabled switchover is an essential early step.

The Government and Ofcom can regulate the present analogue terrestrial broadcasters, but not the Supply Chain. A Memorandum of Understanding designed to link reception and transmission investments is proposed.

The Report details the practicalities of 'How?' under the headings of transmission and coverage; receivers; aerials; recording; the switchover process; estimated consumer cost; consumer support; marketing & communications; costs and funding; and implementation responsibilities.

The Report analyses, and proposes how best to manage, the potential impact of switchover on consumers; broadcasters and transmission companies; manufacturers, retailers and the rental sector; landlords and tenants; non-domestic TV owners; and the environment.

The Report analyses the major risks, records action already taken to control them, and recommends actions for the future. A DTT Technical Trial in South Wales will make a substantial contribution to risk management.

The Report sets out factors relevant to the timing options for switchover. The connections with the BBC Charter Review process and Ofcom's granting of Digital Replacement Licences are of central importance.

The emerging proposals for a Successor Project rest on (a) a Supervision Board with overall responsibility, including Government and Ofcom as well as stakeholder representation (b) a new implementation body, termed 'Switchco' at present, run by the stakeholders with BBC and other broadcaster funding and Supply Chain involvement. The focus now should be on creating the structure needed to manage implementation.

The Report and related Government and Ofcom work enable DCMS and DTI officials now to make recommendations to Ministers.

## 1. THE ACTION PLAN REMIT

1.1 The Digital Television Action Plan was developed at the end of 2001 to help prepare the UK for digital switchover. Compiled in December after consultation on an earlier draft version, it consisted of 65 Tasks (subsequently expanded), the first of which was its adoption and publication by the Stakeholders. This duly took place in January 2002.

1.2 A joint Government-Stakeholder Digital TV Project was created to undertake the Tasks. Groups were formed to tackle Spectrum Planning, Market Preparation, and Technology & Equipment and these – together with the *Go Digital* pilot (and any other pilots) -- reported to a Project Team. The Project Team in turn reported to a joint Government-Stakeholder Steering Board, chaired by Ministers, and was accountable too to separate Government and Stakeholder meetings. A Cost-Benefit Analysis team of Government economists, and later a Communications Group, were added. The Stakeholders also organised a number of additional meetings for specific groups.

1.3 In the summer of 2002 the Office of Government Commerce (OGC) carried out a review of the Project and concluded, among other findings, that the Project's purpose was unclear. Was its aim to deliver switchover – or not? In January 2003 the Steering Board decided its formal objective:

“To ensure that the criteria set for switchover are met so that Ministers can, if they choose, take the decision to proceed to full switchover by ordering the switching off by 2010 of analogue terrestrial transmissions.”

1.4 This made it clear that the Action Plan was **not** designed to deliver switchover, but rather to pave the way for a Government decision. However, what would constitute meeting the criteria of **accessibility** and **affordability**, set in 1999 by Chris Smith, the then Secretary of State for Culture, Media & Sport, was itself a question. So in July 2003 the Project clarified that the Action Plan should

- enable Ministers to decide *whether* to proceed to switchover and, if so,
- enable Ministers to decide *how and when* to do so, with 2010 an option,
- and then help prepare for a *successor project to do the job*.

1.5 That clarification made it possible to decide the project's duration. The broadcasters and transmission companies explained in early 2003 that the process of switchover would need to take place, region by region, over about four years with a minimum of two years' notice. Simple arithmetic showed that, for 2010 to be an option, the Digital TV Project would therefore need to be completed by the end of 2004.

1.6 Here now is the project's concluding report. The three key questions of *whether, how and when* – and the preparation for a *successor project* -- shape its structure. The report aims to provide the answers, enabling a successor project to prepare for implementation.

## 2. WHETHER?

2.1 Digital television was introduced in the UK in 1998. Its main consumer attractions are additional TV services (both subscription and free-to-view), widescreen pictures, more robust technical quality and interactive features. Digital terrestrial transmission enables at least four times as many services to be carried in two-thirds of the current terrestrial TV spectrum. At the outset digital terrestrial spectrum was allocated for simulcasting the analogue services, with the long term aim that, subject to take-up, the Government would withdraw analogue terrestrial transmission. Digital satellite and digital cable would complement digital terrestrial in replacing analogue.

2.2 When Chris Smith first set out the criteria of **accessibility** and **affordability**, there was a widespread assumption that both full digital terrestrial coverage and the 95% take-up figure which was named as an indicator of affordability were possible prior to switchover. The work of the Digital TV Project established that the consumer market would not produce these outcomes of its own accord, primarily because the continuing use of analogue terrestrial constrains digital terrestrial TV:

- it deprives about 20-25% of the population of digital terrestrial coverage
- across the whole of the 75% coverage area, it restricts the power at which digital terrestrial can be broadcast which affects reception quality and in particular impedes set top reception – and in some areas it requires the use of ‘out of group’ frequencies, obliging households to buy a new wideband aerial.

2.3 By the summer of 2003, the Project was in a position to advise Ministers that full UK access to digital terrestrial television, on a comparable basis to analogue, could be achieved at, but not before, switchover and that this would constrain pre-switchover take-up. Moreover, affordability was not just an issue relating to the conversion of the first TV set: other sets in the home, VCRs, and in some cases aerial installations could also be involved. Against that background, it was important to ask Ministers **whether** they definitely wanted to proceed with switchover, following an analysis of the costs and benefits and consultation with stakeholders.

2.4 The benefits of full digital switchover are that:

- it improves spectrum efficiency – and, more specifically, that
- it will enable the 20-25% without digital terrestrial coverage to have this option (likely to be of special appeal to those not wishing to subscribe to pay TV)
- it will enhance reception in areas of existing coverage
- it will enable the broadcasters to make savings on their transmission costs and, in particular, avoid the need for whole-scale reinvestment in the present analogue transmitters during the period 2010-2015
- 14 frequency channels can be freed for re-use, whether for new broadcasting purposes or, subject to international agreement, more flexibly
- there will also be scope for additional new broadcasting services within the spectrum retained for digital terrestrial television (e.g. on one or two further multiplexes and/or for local television).

2.5 However, full switchover also carries some compulsory costs in that:

- those who do not want digital television at all, but do want their familiar services, will be required to acquire it
- those who are content to have it for one TV set only will be required to adapt all the TV sets which they wish to continue using after analogue switch-off
- those who wish to be able to record a different channel from the one to which their TV receiver is tuned, will need to replace their VCR – and re-plugging will be required in many other VCR households.

2.6 The Cost Benefit Analysis carried out under the Action Plan compared a continuation of the *status quo* of analogue-digital simulcasting with the policy option of a planned digital switchover. In effect it asked whether the UK as a whole had a Business Case for making the switch. It quantified the benefits as far as possible through survey work (inevitably a very inexact science), estimated the costs (again imprecisely but with fuller data available), and selected a period ending in 2026 (when the licences for digital multiplexes granted in 2002 to the BBC and Crown Castle would reach the end of their second period of 12 years). Estimates of costs and benefits were made for different dates for the completion of switchover for each year from 2010 (the earliest date practical) to 2015, making it possible to estimate the Net Present Value of making the switch under various timing options. This work, carried out primarily by Government economists, was reviewed by independent economic auditors.

2.7 In early results published in September 2003 the Cost Benefit Analysis team made a central estimate showing the quantifiable benefits of switchover, for the UK as a whole, in the range £1.5 to £2 billion in Net Present Value terms. Subsequent work refining the costs has increased the central estimate to around £2.3 billion in NPV terms.

2.8 The value of the released spectrum is not judged so great as to warrant a whole-scale publicly financed swap-out of analogue TV equipment (on the North Sea Gas model). So it is essential to look at how the benefits and costs would fall.

2.9 The Present Value of the benefits is estimated at over £6 billion if switchover is achieved by the end of 2012. The benefits do not materialise, of course, until *after switchover has been completed*. The principal beneficiaries, in order, are:

- households in areas which cannot receive digital terrestrial television until the analogue terrestrial transmissions cease
- consumers of whatever new services make use of the capacity provided by the released spectrum
- broadcasters who no longer have to transmit the same services in both analogue and digital formats (though for some commercial broadcasters this benefit is outweighed by the anticipated loss of advertising revenue stemming from a reduced audience share in a more competitive digital market) .

Receiver and recorder manufacturers and retailers can also expect some benefit.

2.10 The Government is not viewed as a major beneficiary financially. The Treasury receipts from analogue commercial television fall during the transition to digital as a result of the ‘digital dividend’ and the extent to which spectrum pricing and/or spectrum auctions will make a contribution to the Treasury is unclear. There might be some policy benefits for Government who could make use of the new capacity for

public services such as health and education. Neither Government financial benefit nor possible Government spectrum use are switchover policy ‘drivers’.

2.11 The Present Value of the corresponding costs is estimated at just under £4 billion. These costs, which need to be *incurred before switchover*, fall primarily on consumers, not all of whom would individually benefit, and on broadcasters investing in additional digital transmission infrastructure. Receiver production investment is also required. The Government does not propose to bear a significant portion of pre-switchover costs.

2.12 An illustrative summary of the main Cost and Benefit headings is set out in the table below. It is in headline terms only, reflecting the imprecision of the estimates and respecting the commercial confidentiality of figures which Stakeholders supplied to the Government economists. The illustration is based on completion by the end of 2012. The figures will continue to be subject to revision and any single figure should be seen as subject to sensitivity analysis.

| <b>Benefits</b>   | <b>£m</b>   |
|---|-------------|
| Consumer benefit in current non-DTT areas                               | 2725        |
| Consumer benefit from additional services in retailed spectrum          | 659         |
| Consumer benefit from re-use of released spectrum                       | 1011        |
| Imputed consumer benefit of compulsory migration                        | 657         |
| Broadcaster benefit from savings on analogue transmission               | <u>1233</u> |
| <b>Total benefits</b>   | <b>6285</b> |
|   |             |
| <b>Costs</b>  |             |
| Compulsory consumer investment in reception                             | 3195        |
| Broadcaster investment in digital infrastructure                        | 619         |
| Marketing & practical support costs (excluding any targeted assistance) | <u>163</u>  |
| <b>Total costs</b>  | <b>3977</b> |
|   |             |
| <b>Total NPV</b>  | <b>2308</b> |

2.13 The alternative to switchover – the ‘do nothing’ option – is to allow digital terrestrial and analogue terrestrial television to co-exist, sharing the same spectrum, as far ahead as the eye can see. It has three main drawbacks:

- incomplete digital terrestrial coverage, restricting terrestrial reception of additional BBC services for which all households have been paying through the licence fee since 1998 (noting, however, the satellite option except where it has coverage/planning/tenure contract restrictions)
- continuing reinvestment in old and expensive transmission technology (analogue TV requires around four times as much spectrum and several times as much power to broadcast a single channel of TV)
- inability to release and re-use the spectrum.

2.14 Following the initial Cost-Benefit Analysis work and extensive dialogue with Stakeholders, the Government rejected the ‘do nothing’ option in September 2003. At

the Royal Television Society's Cambridge Convention on September 18<sup>th</sup>, on the strength of agreement between the DCMS, the DTI and the Treasury, Tessa Jowell, the Secretary of State for Culture, Media & Sport stated:

“The advantages of digital are such that the question is *not whether, but how and when* we will achieve switchover”.

2.15 Following the Government's decision on *whether*, the Digital TV Project has focussed on *how* and on workable options for *when*. The challenge has been to develop a Switchover Plan

- which works with the grain of the market but does not wholly rely on it
- in which the key Stakeholders are willing to invest (without any significant Government investment)
- and which consumers can be persuaded to support -- either for their own benefit or for that of others -- by purchasing the necessary reception equipment.

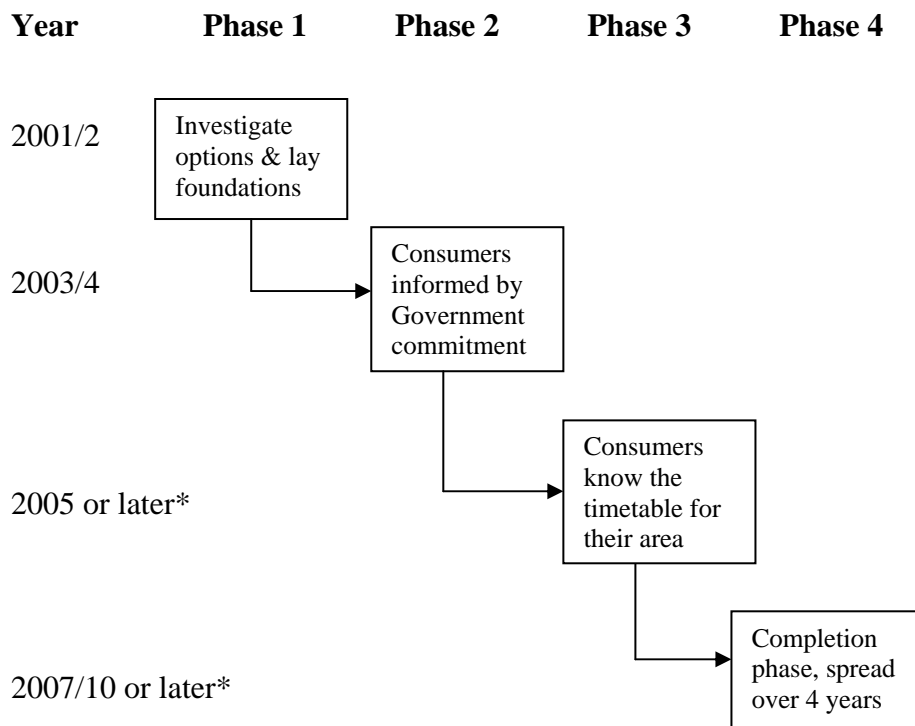
In project terms, this is the feasibility study phase. There is no point in making definitive public commitments about *when* before determining *how* and confirming that the policy is feasible – technically, commercially, practically and in terms of public support.

### 3. HOW? STRATEGY

3.1 Switchover is feasible as a Managed Migration. The change needs to be carried out by willing consumers, using their own money, given plenty of guidance, help and support – with the scale of any unwilling consumer expenditure judged acceptable and justifiable. The analogy is not a close one, but there are some parallels with the Y2K computer campaign in which the owners of equipment were given information and help and expected to take responsibility for ensuring that their own equipment was compliant by the deadline.

3.2 If consumers are expected to spend their own money on switchover, then it follows that they must be given plenty of notice. This will enable those intending to invest in new equipment anyway to make choices which are informed by the Government’s switchover commitment. Transmission investment requires notice – for transmission contracts to be agreed, for transmitter equipment to be procured, and for detailed operational planning. Digital TV receiver manufacturing at significantly increased volumes also requires notice – for silicon production, conversion of existing factory production lines and investment in new production.

3.3 Reducing uncertainty – for consumers, broadcasters and manufacturers -- as soon as possible is conducive to informed investment consistent with the goal. In July 2003 the Digital TV Project therefore agreed a phased strategy, pictured as follows:



*\*dates subject to political decision*

3.4 With the Secretary of State’s commitment in September 2003, the Project moved from Phase 1 to Phase 2 of this strategy. This change made it possible to tell consumers that switchover was definitely coming and needed to be taken into consideration in their buying decisions. In March 2004 Lord McIntosh chaired a chief executive-level meeting of retailers and enlisted their support for communicating this message to consumers. This was followed by the design and registration application of a switchover logo available for use from September 2004 as a certification mark. The DTI licenses its use by trained retailers, the manufacturers of digital receivers and recorders, and others in conjunction with a point-of-sale consumer information leaflet. The importance of this is twofold:

- meeting an obligation to consumers to explain the significance of switchover for equipment they were about to buy and thus helping them to buy wisely
- encouraging receiver manufacturers and retailers to start to shift the balance of their sales towards products with digital tuners.

3.5 Helped by the successful launch of *Freeview* at the end of 2002 and the continuing success of BSkyB’s satellite platform, and with 55% of households able to receive digital television (as at June 2004), the Managed Migration is starting – but analogue sales remain substantial. Sales figures supplied by GfK show the following pattern:

| Sales in 000s       | 2002 | 2003 | Q1 2004 | Q2 2004 | Q3 2004 |
|---------------------|------|------|---------|---------|---------|
| Analogue TVs        | 4661 | 4542 | 1282    | 1091    | 1149    |
| Analogue VCRs       | 3366 | 2597 | 529     | 396     | 383     |
| iDTVs               | 104  | 187  | 72      | 67      | 92      |
| Set top boxes (all) | 1847 | 2516 | 554     | 504     | 636     |

3.6 Having a phase of voluntary switching – when consumers know that switchover is definite and can make informed purchases without the pressure of a compulsory timetable – is fundamental to the strategy. Not only is it more acceptable to consumers but it is also essential logistically. If every household in the country waited to buy and install their digital equipment until the eve of switchover – even with the regional switching pattern spread over four years – neither manufacturing production lines, retailers, aerial installers, nor Call Centre agents could cope.

3.7 Nonetheless, albeit softened by early warning, a compulsory phase will have to follow in order to complete switchover. Fundamental to the strategy is the need to explain this to the public before the timetable starts to bite. Scientific Generics research commissioned by the Digital TV Project indicates that perceived coercion is the main problem that concerns consumers and that the Government’s motives are neither understood nor trusted. The recommendations based on this work were that:

- the Government should clearly communicate to viewers the rationale both for switchover and for the timescale within which it is being pursued
- the current state of public opinion cautions against a timetable announcement until there is greater awareness
- digital television is widely seen as technologically inevitable, but consumers need to understand
  - (a) why analogue needs to be switched off
  - (b) why the pace is not being left to (gradual) market forces.

3.8 Because switchover starts from broadcaster investment in response to technological change, and because understanding the reasons why it will have to be compulsory requires some explanation of broadcasting transmission, it makes strategic sense for switchover to be broadcaster-led. The Government and Ofcom have held discussions with the broadcasters on this approach which informed Ofcom's drafting of the digital licences for Channels 3, 4, 5 and Teletext and the approach taken by both the Government and the BBC to the Charter review. In its *Building Public Value* document published in June 2004, the BBC volunteered to play a leading and coordinating role. BBC funding will play an important part in the next phases of the strategy. Receiver manufacturers and retailers have an explanatory role as well and, of course, it is for the Government fully to explain Government policy.

3.9 Public understanding and acceptance are the essential first steps in any feasible Switchover Plan. It is important that the communication responsibility is not so widely diffused that it is not effectively discharged. The public needs a well-designed, well-timed and well-funded explanation of the need for, and the benefits of, a compulsory policy – led initially by Government and then by the body charged with implementation.

3.10 Against a background of public understanding the Government and Ofcom can incorporate switchover transmission obligations, including the timetable, in regulating the BBC, S4C and the commercial public service broadcasters. The implications can be taken into account in considering public service funding and the financial terms of Channel 3 and Channel 5 licences, provided the switchover policy is platform neutral and respects the constraints on State Aid.

3.11 However, the full collaboration of the receiver and aerial supply chain cannot be converted into a regulatory obligation. It is, however, essential and without it any Government-Ofcom-broadcaster timetable would be at risk. The 'good news' is that what the supply chain most wants is a certain timetable. There is therefore scope for a Memorandum of Understanding (MoU), or equivalent, which could bind the supply chain into the timetable and help 'de-risk' it. This could be signed on an individual company basis by members of the Digital Television Group's Supply Chain sub-group.

3.12 A draft MoU text was discussed in Risk Management workshops in October 2004 and Intellect then put forward the following proposal:

“Provided the Government, Ofcom and the relevant terrestrial broadcasters commit firmly and publicly to implementing a switchover timetable starting in year X and to be completed by year Y, naming the regions which will switch each year, and provided the Supply Chain has been consulted on, and is directly involved in

- the work of the implementation body ('Switchco')
- the planning, development and dissemination of consumer information and advice
- and risk assessment & contingency planning

the Supply Chain will endeavour to make the requisite number of receivers, recorders, aerials and installers available in the market, region by region, on a timely basis.”

3.13 The other major strategic issue – once the current Digital TV Project completes its work and hands over to a Successor Project – is ‘who is in charge?’ If implementation is neither a Government nor an Ofcom responsibility, nor exclusively a public service broadcaster and private sector responsibility, then clarity on a point of senior-level responsibility for the whole programme of implementation strands is an essential prerequisite of a robust programme management structure.

## 4. HOW? PRACTICALITIES

### 4.1 Transmission and coverage

4.1.1 Digital television is transmitted by satellite, cable and terrestrial means (and in some areas by ADSL). Satellite coverage is near-universal, with some limitations on line-of-sight to the satellite and some planning restrictions. Cable largely serves urban areas. The planning of digital terrestrial transmission and coverage has been central to the work of the Action Plan.

4.1.2 The recommended frequency plan for DTT is based on the principle of three analogue conversions -- taking the three best analogue frequencies and using them instead for three digital terrestrial multiplexes carrying the public services. Ofcom has proposed that these public service multiplexes extend DTT to all current analogue transmitters (over 1100), in order to provide equivalent, or substantially the same, coverage as the current analogue network. Frequency planning for the remaining three DTT multiplexes allows for up to 200 transmitters, with the potential for over 90% coverage if desired.

4.1.3 This approach will release 14 frequency channels for alternative use when switchover is complete. While a more radical re-plan could have released more channels, the proposed frequency plan maximises consumers' ability to continue using existing aerials (if in good working order) pointing at existing transmitters.

4.1.4 At present the public services are spread across four terrestrial multiplexes (1, 2, A & B). Grouping them on three requires an agreement between public service broadcasters, multiplex operators, Ofcom and the Government. The working hypothesis is that the multiplexes qualifying for the three analogue conversions should be Multiplex 1 (BBC), Multiplex 2 (D3&4) and Multiplex B (BBC).

4.1.5 With around 1100 transmitters, at – 10dB power, the frequency planners can currently see how to achieve predicted DTT coverage of 98.3% at 16 QAM (or 96.9% at 64 QAM) for fixed aerial reception of the public services, against an analogue terrestrial benchmark assessed at 98.5%, including marginal coverage. Digital satellite is likely to be the only alternative in areas not covered by digital terrestrial.

4.1.6 16QAM offers better set top reception and freedom from impulse noise interference on set top aerials (transmission power and receiver design are also relevant variables). Around 21% of TV sets are connected to set-top aerials (ITC survey of March 2003 for the Technology & Equipment Group) and are especially important for secondary and additional TV sets. They are also important in some rented accommodation. About 4% of primary sets have a set top aerial. Ofcom research into set-top reception is continuing.

4.1.7 The BBC will probably continue to transmit at 16 QAM. D3&4 currently uses 64 QAM, which allows it to carry a larger number of services. Ofcom has stated that a decision on mode will be made after further planning work and consultation.

4.1.8 While current DTT transmissions use the 2k technical standard, the possibility of using 8k at some South Coast locations is under consideration and a migration to 8k is likely at some point for the whole UK. This has implications for receivers.

## 4.2 Receivers

4.2.1 Before the analogue transmitters can be turned off, viewers need to have had every opportunity to purchase, install and begin to use digital receivers. This could be for any platform – satellite, cable or terrestrial (with ADSL also available in some areas) – or for a platform mix.

4.2.2 DTT receivers need to be capable of handling both 16/64 QAM and 2k/8k (as well as requiring MHEG for Teletext).

4.2.3 The scale of the production and sales required for switchover is formidable. While 55% of first TV sets have been converted, the great majority of additional sets are still analogue-only. Ofcom estimates that only 26% of all TV sets have been converted and that **over 35 million further TV sets at present remain to be converted or replaced** (April 2004 report). The number of sets per home is on a rising trend though some sets are of such marginal value in the household that, at switchover, they will probably be discarded or restricted to non-broadcast use.

4.2.4 The size of the task underlines the importance of an extended period of voluntary switching before the compulsory timetable bites. As many households as possible should be persuaded to switch well in advance (and, ideally, to free themselves from dependence on analogue signals). Any households intending to rely fully on either satellite or cable technology to free themselves from analogue terrestrial are in a position to switch now. So are the approximately 75% of households currently served by one of the present 80 DTT transmitters.

4.2.5 The balance between iDTVs and set top boxes (of all platforms) will be decided by how the industry reads the market. The manufacturers' association, Intellect, has undertaken some modelling of the transition from analogue TVs to iDTVs, indicating that sales of digital TV sets could exceed sales of analogue TV sets by 2007.

4.2.6 For the satellite and cable platforms, receivers are specified, tested and guaranteed within a vertically integrated system. Set top boxes which satisfy the requirements of BSkyB, ntl and Telewest can be expected to work through switchover. In the horizontal DTT market, DTT receivers need to be designed and tested to work with the transmitted DTT broadcasts. Interoperability can still be an issue for DTT and requires close technical collaboration between broadcasters and manufacturers. Should a market in free-to-view satellite receivers develop which is independent of BSkyB, similar horizontal market collaboration would be essential.

## 4.3 Aerials

4.3.1 Restrictions on the use of satellite dishes are under review through consultations on planning regulations for England, Wales, Northern Ireland and Scotland.

4.3.2 As mentioned above, the analogue conversion approach should minimise the need for new terrestrial aerials for reception of the public service multiplexes. A small number of households whose current analogue transmitter becomes redundant might need to have their aerials re-aligned. Households with a very poor analogue picture may need a new aerial in order to get a digital picture at all.

4.3.3 Although the requirement for compulsory new terrestrial aerials for post-switchover reception of the public services has been minimised (a figure of 10% was assumed for the Cost Benefit Analysis), additional DTT aerial installations – over and above normal replacement/upgrading – will be needed for several reasons:

- pre-switchover take-up while DTT power levels remain low
- in some areas, pre-switchover, the public services have had to use ‘out of group’ frequencies requiring a wideband aerial
- both pre- and post-switchover, the services on the commercial DTT multiplexes, in some areas, will use ‘out of group’ frequencies requiring a wideband aerial (and this could affect up to 2 million households)
- many current set top reception homes may have to invest in a new fixed aerial or ask their landlord to do so, especially for reception of 64 QAM services
- the need to upgrade the head-end or replace communal aerial systems in the run-up to switchover.

4.3.4 It is important to note that the current level of domestic aerial replacement or upgrading is in the range 1.5 to 2 million p.a. From now on new terrestrial aerials should be ‘digital ready’. This cannot be taken for granted. The industry recommendations here are that

- benchmarked aerials, cabling and other materials should be used (in accordance with the scheme being developed by the Confederation of Aerial Industries)
- aerial installation staff should have a formal training qualification covering key points of digital technology and switchover, as well as health and safety and more general professional knowledge requirements
- a higher level of technical training is required for upgrading or designing communal aerial systems.

4.3.5 A Digital TV Group study for the DTI has estimated that the present aerial installer workforce of about 8000 will need to grow by about 500 in order to handle switchover. More significantly, its authors reported that very few of the existing workforce have any formal training in digital terrestrial television. A related study found that some 500 installers need the higher level training in communal aerial systems to cope with the potential demand (around 5 million flats). There is therefore an urgent training requirement for which the industry is neither organised nor funded.

4.3.6 In conjunction with the Sector Skills Council SEMTA, the DTI is therefore working on the development of a stand-alone VRQ (Vocational Related Qualification) linked to the existing City & Guilds NVQ. Bids are being made for appropriate funding and colleges invited to create the teaching and assessment capacity. These qualifications could form the basis of a two level form of certification for aerial installers which, in conjunction with the industry, SEMTA is also helping to design.

The DTI aims to see this scheme introduced in 2005. A current issue is the restriction on training funding in Scotland and Northern Ireland for trainees over the age of 25.

4.3.7 The Action Plan includes a commitment to license the use of the switchover logo to companies who employ trained staff and use benchmarked materials. Aerial industry advice to consumers along the lines of 'Look for the logo in order to be digital-ready' could then reinforce installers' incentive to undertake formal training.

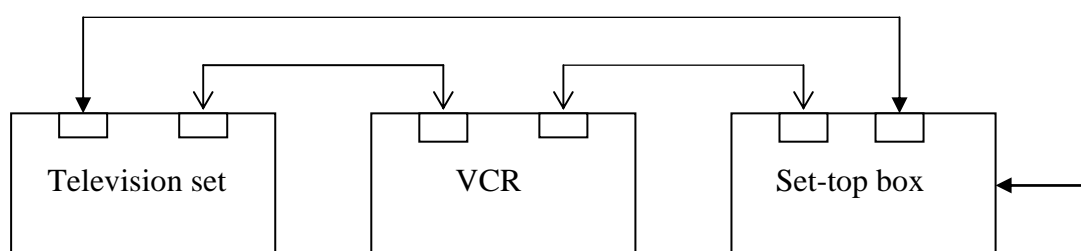
#### 4.4 Recording

4.4.1 VCRs contain an analogue TV tuner, allowing them to record programmes independently from the TV or set top box to which they are connected. This makes it possible to record one programme while watching another or recording two different channels on the timer. When analogue transmissions are switched off, this functionality will cease.

4.4.2 Households for whom this functionality is important will need to purchase new recording equipment incorporating a digital TV tuner. Scientific Generics' research suggests that around half of households fall into this category. The *Go Digital* pilot concluded that extra set top boxes for VCRs were too cumbersome. The market is likely to offer replacement by

- a digital VCR, or
- a twin tuner set top box (one tuner for connection to the VCR), or
- a twin tuner set top box with built-in hard disc recording (PVR).

4.4.3 Households which either use the VCR exclusively for playback or are content to record the channel to which they switch their TV/set-top box need not replace their VCR (until they wish to) provided they can plug and programme their system appropriately. With modern SCART connections, connecting a digital set-top box **with two SCART sockets** to an analogue TV and VCR in readiness for switchover is straightforward. Consumers may need a VCR-conversion Wizard service which they can access, for example, via the Internet, on DVD or on a video-cassette. The illustration below gives a flavour of one of the variants consumers might need to grapple with:



If you have two SCART sockets on both your TV and your VCR, connect as above. TV viewing will be on AV1 and VCR use on AV2. For other set-ups, or in case of difficulty, consult the VCR Wizard...

4.4.4 Consumers who choose to retain their analogue VCRs will, however, lose the current Videoplus system. Ease of recording in future should come through Electronic Programme Guides with advance programme information, used in conjunction with either PVR hard disc recorders or compatible digital receivers and VCRs incorporating P50 (also termed 'Smartlink' etc) technology. Digital satellite recording has been transformed by the Sky+ PVR boxes. Recording technology will continue to develop (e.g. the TV Anytime project's work).

4.4.5 It is in the recording area that the market is least ready for switchover. The UK has over 35 million analogue VCRs. Even if half of these were retained, with a loss of functionality, it is likely that **some 18 million VCRs may need to be replaced.**

## **4.5 The switchover process**

4.5.1 The region-by-region process of switching the terrestrial transmitters means that compulsory switchover will take place in different years for different parts of the UK. At the same time that the compulsory phase of switchover is explained to the public, households will need to be informed of the proposed timetable for their region. ITV regions are likely to be the unit the public will most readily understand.

4.5.2 The order in which the ITV regions are switched must take account of technical, logistical, international frequency planning, and commercial factors. While an early draft has been discussed within the project, the final order is unlikely to be settled until 2005 (following further Ofcom and broadcaster work and Government dialogue with the Isle of Man and the Channel Isles).

4.5.3 The broadcasters have proposed switchover on a staged basis, with relays following the same pattern as the main transmitters within 24 hours wherever practical. The first step would be the withdrawal of one analogue public service and the switch of the digital multiplex carrying it onto its former frequency at high power. After viewers had acclimatised to this, the remaining analogue services would be withdrawn and the other two public service digital multiplexes switched to their new locations. Any frequency changes required for the commercial digital multiplexes would follow.

4.5.4 From the consumer's standpoint, these separate switching operations mean that two or three channel rescans would be required for DTT receivers. In order to shield consumers from this complexity (if they wish to be shielded), the broadcasters and manufacturers have started work to develop Service Information and receiver software which can trigger automatic rescans at switchover. This technology could potentially be brought into use during 2005 as an option for receivers produced thereafter. It is unlikely to be applied to all existing DTT receivers (or communal housing head-ends), many of which will need the rescans to be triggered manually.

## **4.6 Estimated consumer cost**

4.6.1 The cost of converting receivers will vary according to several factors, including

- how much digital equipment the household already has as a 'baseline'

- how much additional equipment the householders wish to continue to be able to use after switch-over
- their platform and equipment choices
- their service choices
- prevailing prices in the year(s) in which they make their purchases.

4.6.2 The market already provides different tiers of pay TV services, a range of iDTVs, new PVR recording devices and at least one flat-screen digital TV model. Switchover will not be a ‘one size fits all’ operation. However, for some people, switchover will not be voluntary and, for most, affordability will be a major consideration. There should be a minimum cost, which does not make an ongoing subscription obligatory, at a level which consumers will find acceptable, especially if they are given plenty of notice.

4.6.3 *If the need for new aerials can be largely avoided*, and if most households have already converted their first receiver before switchover becomes obligatory, the compulsory minimum cost for an average home with two TVs and one VCR would relate to adapting the second TV and replacing the VCR (if full functionality is a requirement). Examples of a DTT conversion **at current prices** are given below, though some prices can be expected to fall and there may well be scope for discount schemes:

| Household type | Assumptions about conversion            | Cost        |
|----------------|---|-------------|
| 1 TV only      | Adapt with DTT box                      | £40-80      |
| 1 TV & 1 VCR   | Adapt with DTT box & re-plug VCR        | £40-80      |
| 2 TVs & 1 VCR  | Adapt with two DTT boxes & re-plug VCR  | £80-160     |
| 2 TVs & 1 VCR  | Adapt with twin tuner PVR and extra box | Around £200 |

4.6.4 A simple installation service (no aerial work) for households in need of help with DTT equipment sold as self-install could cost £50.

4.6.5 A domestic terrestrial aerial installation may cost around £150, though prices vary according to the complexity of the task and local installer rates.

4.6.6 BSkyB has launched its offer of a free-to-view satellite set-top box and dish, with installation, for a single payment of £150.

4.6.7 The cost of converting aerial systems to digital for landlords and other institutions ranges from around £600 for a simple upgrade of a terrestrial system to a yardstick cost in the range of £110-180 per unit for the installation of a new Integrated Reception System (IRS). Landlord costs are likely to be reflected in tenant rents.

4.6.8 It is for the Government to decide whether or not any consumers may need any publicly funded assistance. Advice on this is being sought from the Ofcom Consumer Panel and from charities on the needs of vulnerable groups, prior to a decision.

## **4.7 Consumer support**

4.7.1 For many consumers complexity is likely to be as great an issue as cost. Switchover will not be possible without some new central body – backed by regional Stakeholder ‘networks’ – taking responsibility at the outset for explanation and practical support.

4.7.2 Consumers will need a facility whereby households can check, via a postcode database, whether they live in an area where:

- satellite, cable and digital terrestrial reception are all possible, both now and after switch-over
- satellite and digital terrestrial reception are possible, both now and after switch-over
- satellite (and cable?) reception is possible now, and digital terrestrial will become possible at the point of switch-over, either as a result of the increased transmission power or with the conversion of a relay transmitter
- exceptionally, satellite reception, available now, will be their only post-switchover option.

4.7.3 A source of reliable consumer information, using the switchover logo, will need to publish leaflets, provide training packs and information updates for retailers and installers, ensure access to the VCR-conversion Wizard, manage a web-site and contract a Call Centre (whose agents will be trained to use the web-site material as their information resource). It should also be responsible for coordinating marketing and communications and undertaking directly activity required to complement whatever advertising and publicity Government, broadcasters, manufacturers and retailers undertake in their own names (see 4.8). All this activity will need to be underpinned by authoritative technical advice.

4.7.4 The Call Centre staff will need to understand and explain (and have facilities for explaining to those with impaired hearing):

- how you know whether you already have digital television
- how you know which region you’re in and the date for switchover in your case
- how you find out about your platform options
- how to recognise switchover-compliant reception equipment (look for the logo)
- how to ensure you’re buying ‘digital-ready’ roof-top aerials from a trained installer (look for the logo)
- how you re-plug your VCR (if you want to keep it through switchover)
- how to find installation help to connect different pieces of equipment acquired at different times (where there is no obvious service provider to whom to turn)
- how to find equipment with access features for those with special needs
- how to ‘trouble-shoot’ any problems with channel rescanning.

## **4.8 Marketing & communications**

4.8.1 Having made the commitment in 2003 to switchover, the Government has now

- alerted landlords to the policy commitment, offering advice on converting existing MATV/SMATV systems or installing integrated systems;
- forewarned national and local government bodies which will need to re-equip, advising advance financial planning and discussing the possibility of a Procurement Framework Agreement
- developed a switchover logo, to badge reliable and authoritative information about switchover, which can be used in a variety of ways by a range of users.

4.8.2 The DTI is now licensing the switchover logo for use by trained retailers and on compliant equipment, backed by a point-of-sale leaflet offering the following advice:

If you're buying a new TV for a roof-top aerial, you need to know:

- the UK's television will probably switch to digital within its lifetime
- you can buy either a digital TV set (with extra services) or an analogue one
- if you buy analogue, you'll need to a box to adapt it (DTT, satellite or cable)
- if you opt for DTT now, ask for a postcode check on reception
- think about the number of SCART sockets you need

If you're buying a new recorder

- the UK's television will probably switch to digital within its lifetime
- to record one channel while viewing another after digital switchover, you will need to think about buying a digital recorder

4.8.3 When the timetable and regional order are announced, a major national advertising campaign will be required, with Call Centre support. This could involve providing every household with an explanatory booklet, explaining the process fully in regionally-tailored versions. The boxed text below is illustrative.

- Recap of the reasons for switchover and the benefits (individual and public)
- Switchover in your area is targeted for the year XXXX. This gives you Y years' notice. If you haven't already done so, you'll need to get 'switchover ready'.
- Explanation of platform options and equipment -- and how to check your options You will need to adapt your TV(s) unless you've bought a digital one
- Advice on aerials...
- Advice on your VCR (and how to get step-by-step guidance from the Wizard)...
- Special help schemes and advice on installation from 'Switchco'...
- What will happen 'on the night' (we'll send you a reminder).

4.8.4 As the switchover date nears for each region, a full marketing campaign should be undertaken, with advertising primarily at regional level but with some ongoing national publicity. The message must be supportive, designed to induce good-humoured cooperation, and offering a source of help if required. A further direct mailing to each household may be needed to give a reminder of the date, explain what will happen including channel re-scanning, and provide a point of contact for any problems.

4.8.5 Broadcasters meanwhile will need to inform their audiences of what is planned and the broadcast services should carry captions, reinforcing the advance warning, which become more prominent as the date approaches.

4.8.6 For implementation, explicit targets (e.g. 95% awareness following the announcement and 98% consumer readiness on the eve of switchover) need to be set as a yardstick for deciding the scale of publicity and measuring its effectiveness.

#### **4.9 Costs and funding**

4.9.1 The costs of transmission infrastructure should fall to the relevant broadcasters and the costs of consumer reception equipment, except where the Government decides to provide any special assistance for specific groups, should fall to consumers.

4.9.2 Marketing, communications, and practical support costs – over and above the marketing and publicity which Government, broadcasters and the supply chain could be expected to undertake within their own budgets -- have been estimated at around £200 million, spread over the period from 2005 through to completion. The major areas of cost are advertising, publicity and management of a Call Centre contract. Peak annual expenditure under these headings could be £30-35 million per annum. Targeted special assistance costs have yet to be decided. Taken together these marketing, communications, practical support and targeted assistance costs will constitute **expenditure which is essential as a catalyst** for the wider broadcaster, industry and consumer investment required. Identifying funding for this – a Government responsibility within the Action Plan – is an essential early step and will need to precede the finalisation of a credible timetable. The working assumption is that this expenditure will be channelled through a new organisation (currently termed ‘Switchco’).

#### **4.10 Implementation responsibilities**

4.10.1 So far as possible implementation should be through normal business channels – with broadcasters, manufacturers and retailers ‘playing in position’ and collaborating as appropriate. Broadcasters and transmission companies could manage the transmission infrastructure (though the present TDN arrangements need to be reviewed). Broadcasters should explain how to receive their services in the future. Satellite and cable companies will market their own services and equipment. Retailers will sell receivers and recorders. Installers will market aerial and other installation services. The Government and Ofcom will take appropriate policy and regulatory decisions.

4.10.2 The new tasks which are candidates to become ‘Switchco’ responsibilities are:

- a ‘front-line’ marketing and communications role
- the practical support role outlined in 4.7 above
- the administration of any targeted assistance scheme (this needs further work).

4.10.3 However, a high-level oversight of the full range of activity encompassed in paragraph 4.10.1 and 4.10.2 above is essential. The implementation programme will consist of a complex group of projects and project strands, under different managements both outside and inside Government. It is important that decisions about the composition of ‘Switchco’ as a body do not become muddled with the design of the Successor Project structure. The advice of the Office of Government Commerce (OGC) is timely on this point. The Successor Project is discussed in section 8 below.

## 5. HOW? MANAGING POLICY IMPACTS

### 5.1 Consumers

5.1.1 The evidence suggests that the great majority of consumers can be persuaded to switch to digital, *if the implementation plan is well-judged in terms of timing, explanation and communication, and appropriate targeted support*. Scientific Generics' study on the adoption of digital television for the Digital TV Project initially classified 13% of households as "Unlikely to get DTV and cannot be persuaded", based on a March 2003 survey. However, Scientific Generics' further study on attitudes to switchover, augmented by further survey work in November/December 2003, found that the announcement of a switchover timetable would trigger many people who would not otherwise have converted to do so:

"Around 95% of households would have one or more digital set converted by the announced switchover date."

5.1.2 For some viewers programme content on multi-channel television is an issue. The main barrier for the 5% who told the second Scientific Generics study they would not convert was "the cost and complexity of conversion". Installing digital equipment and preparing for switchover is not straightforward for everyone. Scientific Generics' 2003 research on usability and accessibility indicated that 15% of people would need assistance in installing DTT set-top boxes and that this figure could rise to 50% for those over 75. This underlines the importance of a well-designed targeted assistance scheme and a 'Switchco' able to provide practical help in an effective way.

5.1.3 Scientific Generics research also found that the absolute date of a hypothetical switchover was of little significance compared to the amount of notice given. Plenty of notice (e.g. three years) was important to provide time to save up for the expenditure, time for the practical changes and time to "get used to the idea of digital television". The importance of this last point should not be underestimated in designing a policy involving such widespread involuntary change.

5.1.4 Digital television offers those with impaired sight the advantage of an audio-description service. During the course of the Digital TV Project, stimulated in part by a May 2003 seminar organised by the RNIB, Netgem produced a digital terrestrial receiver capable of handling the DTT broadcast service. Manufacturers of iDTVs are expected to follow. The public service broadcasters have now extended their service to satellite. BSkyB has been broadcasting its service on satellite for several years. Audio-description, sub-titling and signing commitments by the broadcasters are underpinned by Ofcom regulations. The practicalities of switchover for those with disabilities, and the different forms of assistance which may be required in different circumstances, will become an important 'Switchco' responsibility.

5.1.5 The Consumer Expert Group Report to the DCMS, in offering advice to the Government on consumer issues related to switchover, states:

"Put simply, consumers are far from ready for the analogue television signal to be switched off."

The Group details a number of recommendations on what it sees as the remaining consumer barriers, distinguishing those which it believes should be addressed before

the switchover timetable is announced and those which should be addressed before switchover takes place. The Report recognises that:

“There will inevitably be some element of compulsion in any decision about digital switchover, although the proportion of consumers affected depends greatly on the timing of any announcement, the date of switchover itself, and the extent to which a wide range of consumer concerns and needs are addressed before these take place.”

5.1.6 While it is possible to persuade the great majority of consumers to switch, and to provide assistance and practical help in appropriate cases, consumer support has not so far been won. As emphasised in section 3 above, public understanding and acceptance have to be achieved at the start. Ofcom’s April 2004 report stressed the same point:

“Shutting down analogue TV services will only be a realistic possibility if there is support for the objective of switchover itself. Such support is currently limited...Public suspicion might not last long, especially if attitudes are addressed by an effective and well-coordinated public information campaign.”

5.1.7 The Digital TV Project has also received clear advice on how to handle a public information campaign from work commissioned by the Digital TV Project from consultants Stimulating World:

“THE FACTS

- People need to know when, why and what they need to do
- People need simple, clear, authoritative, independent advice

TELLING THE BAD NEWS

- There is no way of ‘spinning’ the bad news as anything other than bad news. This is going to cost many people effort, time and money, if not for their main TV set then for their other TV sets.

THE BETTER NEWS

- It may be quite simple and not cost very much
- Additional BBC and other channels
- It’s the future and it’s better for everyone

WHEN

- The most important aspect: until they hear a date, people ignore the information
- If people are buying a new TV or video recorder/DVD recorder, they need to know **NOW**
- Many people feel that, if the digital change is happening, then ‘non-digital’ TVs and VCRs should not be sold, or only with a clear warning
- On a more general level, people want advance notice so that, when the change does happen, it is not a total surprise

WHAT is happening

- People assume that this is voluntary and has a ‘natural evolution’ (like vinyl to CDs) until they are told that: the analogue signal is going to be switched off and that broadcasting will continue in digital format only

WHO is behind it

- The Government (or possibly the BBC) are the only credible sources of this change. And if it is not ‘official’ people will not believe it or take it seriously.” (Stimulating World, June 2004)

## **5.2 Broadcasters and transmission companies**

5.2.1 The Cost Benefit Analysis team of Government economists expects switchover to increase competition in the broadcasting market by permitting new entrants -- thus  
 “It is likely that, in general, the present high level of concentration in the industry will be reduced as new operators of multiple commercial channels are licensed.”

The impact of switchover on the current analogue terrestrial broadcasters, taking account of market changes and potential savings from ending dual analogue transmissions has been discussed with each broadcaster by Ofcom and the Government, as appropriate in the context of formulating new licences for commercial broadcasters, of public service funding and of the BBC Charter Review process.

5.2.2 While dual transmission produces additional revenue for the terrestrial transmission companies, the full switchover to digital should provide a more sound long-term future for terrestrial transmission.

## **5.3 Manufacturers, retailers, and rental sector**

5.3.1 A commercially confidential survey by consultants, Opta, for the DTI advised that switchover is more likely than not to increase the likelihood of manufacturers’ continuing investment in the UK. Opta also advised that

- provided they have time to prepare, retailers’ revenue from switchover is forecast to increase by £2.4 billion over the transition years, offset slightly by a reduction of £440 million in the immediately following years
- similarly, manufacturers’ revenues are forecast to increase by about £1 billion during the transition period, offset slightly by a reduction of £105 million in the immediately following years
- UK aerial manufacturers could expect additional revenue of £21.6 m.

5.3.2 The Opta work was done against an expectation of a timetable leading to the completion of switchover by 2010, so a later timetable would affect these figures (which can only be indicative). While, in general, there are commercial benefits for manufacturers and retailers from switchover, there are also commercial risks. What this sector wants is as much certainty as possible: it wants to know the timetable and it wants to feel confident that, once announced, the timetable will not be altered.

5.3.3 RETRA advised that the TV rental market is currently in decline and that switchover might slow, but would not reverse, that decline.

## **5.4 Landlords and tenants**

5.4.1 Around 5 million households are in multi-occupation rented housing – estimated at 40% local authority, 20% housing association and 40% private landlord. A common arrangement is for the tenants to be responsible for their own receiver and recording equipment while the landlord is responsible for the aerial and wiring into each flat. Tenants cannot prepare for switchover without the landlord also preparing.

5.4.2 Communal aerial systems may consist of a simple Master Antenna for receiving terrestrial signals and then a distribution system around the building or an Integrated Reception System offering satellite and/or cable service options as well. In preparing for switchover landlords with analogue terrestrial only aerial reception will have a choice between simply converting their existing aerial or upgrading to an Integrated Reception System. Cost estimates were noted in section 4.6 above.

5.4.3 The Government has alerted landlords to switchover in letters from Andrew Ramsay (DCMS) and David Hendon (DTI) sent in June 2004, emphasising especially for local authority and housing association landlords the importance of financial planning. Follow-up communication is taking place through a number of channels and the DCMS is working with the Office of the Deputy Prime Minister on researching and monitoring the extent to which major public sector landlords are prepared.

## **5.5 Non-domestic TV owners**

5.5.1 While switchover will be an issue for every hotel manager and for many offices, the Digital TV Project has focussed at this stage on bodies such as schools, colleges, old people's homes, military barracks, prisons etc where, because of the number of TV sets and the aerial/distribution arrangements, switchover could potentially represent a significant cost. As well as writing to all local authorities in June 2004, Andrew Ramsay and David Hendon wrote in April 2004 to all central Government departments with responsibilities reaching into such institutions, alerting them. Again follow-up communication is taking place.

## **5.6 Environmental issues**

5.6.1 The Action Plan included the task of assessing the impact of switchover on the UK's energy usage. This work has been informed by the Government's Market Transformation Programme (MTP), which publishes detailed projections of energy-using products, and by separate policy impact studies carried out by the DTI. At present the DTI's best estimate is that, over and above the increase in usage which would happen without switchover, the switchover policy could result, at the receiver end, in an increase in electricity usage of around 1450 Gigawatt (Gigawatt = billion watt) hours p.a., partially offset by a reduction in transmitter power usage of 185 Gigawatt hours p.a. This is not an exact science – much depends, for example, on what mix of iDTVs, set top boxes and twin tuners the market delivers.

5.6.2 Greater adherence to the EU Code of Conduct on Energy Efficiency of Digital TV Service Systems is important in controlling this impact. If conformance to the

Code were the norm, the resultant electricity savings would dramatically improve the NPV of switchover calculated by the Cost Benefit Analysis team. The Government announced in February 2003 that it was committed to making digital TV equipment more energy efficient and that the Government Digital TV Group would

- agree best practice standards and minimum energy efficient requirements for new technologies and services
- publish a list of all products that meet these standards, encouraging consumers to choose the most efficient products and services
- work with retailers, manufacturers and broadcasters to adopt and promote these standards, encouraging innovation and competition
- support the adoption of these standards into appropriate EU policy measures, including industry self-commitments.

Assessment of a number of digital terrestrial set top boxes on the market indicates that the EU Code is not being satisfactorily met.

5.6.3 The DTI has also made an initial assessment of the waste implications of discarded TV sets. Scientific Generics work indicates that perhaps 10% of TV sets will be “destined for disposal” at switchover. The Waste Electrical and Electronic Equipment (WEEE) Directive will place the costs of treating and recycling electrical and electronic equipment, including televisions, on producers of that equipment. The WEEE Directive covers ‘historic’ waste as well as new products. The detail of how this might work in practice in the UK has yet to be determined. The Government is currently consulting on draft implementing Regulations and accompanying non-statutory Guidance with a view to transposing the Directive in early 2005. Local authorities do not have obligations under the WEEE Directive and will be able to pass any WEEE they separately collect to producers for treatment and recycling.

## 6. HOW? MANAGING RISKS

### 6.1 The major risks

#### A. Risks associated with transition from Digital TV Project to Implementation

|   |   |
|---|---|
| <p><b>A1. Investor &amp; Government/regulatory coordination</b><br/>           Inadequate coordination of transmission investment and reception investment.<br/>           Inadequate coordination of both with Government and Ofcom policy &amp; decisions.</p>  | <p><b>Action already taken by Project</b><br/>           Ofcom view that external intervention required to ensure sufficient coordination. Draft Memorandum of Understanding. Consultation with stakeholders about structure for the Successor Project and role of 'Switchco'.</p>  |
| <p><b>Probability (1-3): 2</b><br/> <b>Consequence:</b> delays and increased costs for stakeholder investors<br/> <b>Impact (1-3): 3</b><br/> <b>Risk score (probability x impact): 6</b><br/> <b>Owner:</b> Andrew Ramsay &amp; David Hendon, with Barry Cox</p>   | <p><b>Further action recommended</b><br/>           Government to appoint programme manager responsible for overseeing the full implementation activity, including Government and Ofcom elements. Set up 'Switchco' with clearly defined role within wider framework.</p>   |
| <p><b>A2. Leadership uncertain</b><br/>           Ambiguity, when the current Digital TV project ends, about who is in charge of the Successor Project.</p>   | <p><b>Action already taken by Project</b><br/>           Consultation with stakeholders about structure for the Successor Project and role of 'Switchco'.</p>   |
| <p><b>Probability (1-3): 2</b><br/> <b>Consequence:</b> confusion and disagreement<br/> <b>Impact (1-3): 3</b><br/> <b>Risk score (probability x impact): 6</b><br/> <b>Owner:</b> Andrew Ramsay &amp; David Hendon, with Barry Cox</p>   | <p><b>Further action recommended</b><br/>           Major investors outside of Government &amp; Ofcom to help shape 'Switchco' but a Government-chaired Supervision Board is desirable, to integrate Government, Ofcom and 'Switchco' work.</p>   |
| <p><b>A3. Funding for marketing, communications &amp; practical support</b><br/>           Both 'Switchco' and Government communications inadequately funded, and therefore poorly designed/managed</p>   | <p><b>Action already taken by Project</b><br/>           Preliminary costings.<br/>           Advice on public information campaign from Stimulating World.</p>   |
| <p><b>Probability (1-3): 2</b><br/> <b>Consequence:</b> Failure to persuade consumers, landlords and others to prepare to spend on switchover. Delay could increase costs for investors<br/> <b>Impact (1-3): 3</b><br/> <b>Risk score (probability x impact): 6</b><br/> <b>Owner:</b> Andrew Ramsay</p> | <p><b>Further action recommended</b><br/>           Set up 'Switchco' urgently.<br/>           'Switchco' to review preliminary costings and develop its own view.<br/>           Government and BBC to ensure that funding is adequate not just to make consumers, landlords, public bodies, hotels etc aware of switchover, but to stimulate them to take action.</p> |

|   |  |
|---|--|
| <p><b>A4. Consumer reluctance</b><br/>Consumers unwilling to purchase and install the required equipment on a widespread basis</p>  | <p><b>Action already taken by Project</b><br/>Extended voluntary take-up phase before compulsory timetable to be announced. Report of Consumer Expert Group.</p>   |
| <p><b>Probability (1-3): 3</b><br/><b>Consequence:</b> could undermine or delay switchover with adverse financial consequences for stakeholder investors<br/><b>Impact (1-3): 3</b><br/><b>Risk score (probability x impact): 9</b><br/><b>Owner:</b> Andrew Ramsay</p> | <p><b>Further action recommended</b><br/>Well-judged communications to win understanding of the need and benefits, and acceptance, ahead of finalising the compulsory timetable is <i>essential</i>. For specific groups, targeted assistance.</p> |

|  |  |
|--|--|
| <p><b>A5. Panic-inducing publicity</b><br/>Mismanaged communications, or a communications vacuum, allows the development of press 'scare stories'</p>  | <p><b>Action already taken by the Project</b><br/>Making information available steadily, e.g. based on Statements to Parliament, speeches and Ofcom consultation</p>   |
| <p><b>Probability (1-3): 2</b><br/><b>Consequence:</b> could cause misplaced consumer alarm and stiffen consumer resistance<br/><b>Impact (1-3): 3</b><br/><b>Risk score (probability x impact): 6</b><br/><b>Owner:</b> Vickie Sheriff, chair of Govt. Communications Group with 'Switchco'</p> | <p><b>Further action recommended</b><br/>More proactive explanation as<br/>(a) policy crystallises<br/>(b) public interest grows<br/>Announcing the regional order of switching will create major interest. Need to have the ability to handle telephone &amp; e-mail queries from the public by then.</p> |

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| <p><b>A6. Risk of loss of momentum</b><br/>Preoccupation with setting up new project structure means that implementation and communication slow</p>   | <p><b>Action already taken by Project</b><br/>Handover of project 'as a going concern' to 'Switchco' Working Group</p>   |
| <p><b>Probability (1-3): 1</b><br/><b>Consequence:</b> could add a further year to the timetable and leave consumers in the dark when communication is essential<br/><b>Impact (1-3): 2</b><br/><b>Risk score (probability x impact) 2</b><br/><b>Owner:</b> Jane Humphreys &amp; Catherine Smadja, with Barry Cox &amp; Andy Townend</p> | <p><b>Further action recommended</b><br/>Appointment of a programme manager and agreement to a timetable of consumer-facing actions for 2005, to be carried out in parallel with creation of new project structure</p> |

|   |   |
|---|---|
| <p><b>A7. Risks of S.Wales Technical Trial</b><br/>Having initially consented to the Trial, the local community doesn't take to digital and reacts against switch-off</p>   | <p><b>Action already taken by Project</b><br/>Reception equipment carefully chosen &amp; tested. Flexibility for those who wish to make their own arrangements. Advice &amp; support from local retailer. BBC-2 Wales issue flagged for early resolution.</p> |
| <p><b>Probability (1-3): 1</b><br/><b>Consequence:</b> adverse publicity and increased costs for the Trial funders<br/><b>Impact (1-3): 2</b><br/><b>Risk score (probability x impact): 2</b><br/><b>Owner:</b> Jane Humphreys &amp; Catherine Smadja</p> | <p><b>Further action recommended</b><br/>House-by-house check that each household is happy with its 'kit' and can free itself from analogue well ahead of projected switch-off date.</p>  |

**B. Risks associated with Implementation: for 'Switchco' to manage (and with appropriate Government & Ofcom involvement in handling consequences)**

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| <p><b>B1. Technical complexity for consumers</b><br/>Consumers, assuming they are persuaded of the policy justification, find the whole experience of plugging up combinations of boxes, having multiple remote controls and the prospect of three rescans for digital terrestrial receivers far too complex. Complaints widespread with adverse publicity.</p> | <p><b>Action already taken by Project</b><br/>Scientific Generics study on usability. ITC's (now Ofcom's) Easy TV work. Technology &amp; Equipment Group (TEG) work on remote controls. Mastercare Call Centre intranet for giving connectivity advice over the phone. Automatic rescanning for DTT receivers: technical work commissioned. DTT technical trial in Wales (see 6.2 below)</p> |
| <p><b>Probability (1-3): 3</b><br/><b>Consequence:</b> delays and increased costs for stakeholder investors<br/><b>Impact (1-3): 3</b><br/><b>Risk score (probability x impact): 9</b><br/><b>Owners:</b> Barry Cox, Andy Townend &amp; Supply Chain</p>  | <p><b>Further action recommended</b><br/>Digesting lessons of DTT technical trial. Implementation of usability best practice based on Easy TV, TEG &amp; other work. Completion of technical work on automatic rescanning for DTT receivers – by broadcasters and manufacturers.</p>   |

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| <p><b>B2. Receiver and recorder products</b><br/>Shortages of receivers and recorders with digital tuners arise after timetable has been announced and during switchover (happened briefly in Berlin)</p>                                 | <p><b>Action already taken by Project</b><br/>Liaison with Intellect and major retailers about transition strategy. Draft Memorandum of Understanding. Suggestion for simulation exercise.</p>                    |
| <p><b>Probability (1-3): 2</b><br/><b>Consequence:</b> threat to timetable and to credibility of switchover<br/><b>Impact (1-3): 3</b><br/><b>Risk score (probability x impact): 6</b><br/><b>Owner:</b> Barry Cox &amp; Andy Townend</p> | <p><b>Further action recommended</b><br/>Signed Memorandum of Understanding? Supply Chain planning &amp; simulations &amp; regional sales monitoring &amp; modelling. Early announcement of a firm timetable.</p> |

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| <p><b>B3. Delivering marketing and communications</b><br/>         Poorly designed and misconceived 'Switchco' communications campaign. Failure to persuade and assist consumers to prepare.</p>  | <p><b>Action already taken by Project</b><br/>         Advice from WPP and M&amp;CSaatchi<br/>         Advice on public information campaign from Stimulating World.</p>  |
| <p><b>Probability (1-3): 2</b><br/> <b>Consequence:</b> delays and risk of increased costs for stakeholder investors<br/> <b>Impact (1-3): 3</b><br/> <b>Risk score (probability x impact): 6</b><br/> <b>Owner:</b> Barry Cox &amp; Andy Townend</p> | <p><b>Further action recommended</b><br/>         Engage high quality professional advice and use research to understand starting-point, communications needs and segmentation, as well as to monitor progress.</p> |

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| <p><b>B4. Delivering practical support</b><br/>         Poorly designed and ineffective Call Centre service, with little or no added value.</p>   | <p><b>Action already taken by Project</b><br/>         Consultation of stakeholders on Call Centre policy. Work done by <i>Mastercare</i> on connectivity advice.<br/>         DTT Technical Trial</p>  |
| <p><b>Probability (1-3): 2</b><br/> <b>Consequence:</b> consumer alienation, leading to delays and increased costs for stakeholder investors<br/> <b>Impact (1-3): 3</b><br/> <b>Risk score (probability x impact): 6</b><br/> <b>Owner:</b> Barry Cox &amp; Andy Townend</p> | <p><b>Further action recommended</b><br/>         Draw up Call Centre specification, drawing on best practice, including <i>Mastercare</i> work. Draw on experience of DTT Technical Trial. Engage high quality professional supplier. Build links to installation companies.</p> |

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| <p><b>B5. Insufficient consumer take-up in a region as its switch-off date nears</b><br/>         Risk is particularly high in a region where DTT coverage is very restricted until the point of switchover</p>  | <p><b>Action already taken by Project</b><br/>         Articulation of the issue in Risk Management workshop.<br/>         Scope for free-to-view satellite recognised.</p>  |
| <p><b>Probability (1-3): 2</b><br/> <b>Consequence:</b> threat to credibility of the timetable, with financial costs (and compensation claims) if slippage occurs or political consequences if it doesn't<br/> <b>Impact (1-3): 3</b><br/> <b>Risk score (probability x impact): 6</b><br/> <b>Owner:</b> Barry Cox &amp; Andy Townend</p> | <p><b>Further action recommended</b><br/>         Map current DTT coverage onto ITV Regions, identify Regions of high risk and note their place in regional order. Free-to-view satellite targeted marketing. Focussed 'Switchco' communications. Regular liaison with Government &amp; Ofcom.</p> |

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| <p><b>B6. Consumer misinformation from retailers</b><br/>Consumers are misled by retail staff and purchase inappropriate equipment</p>  | <p><b>Action already taken by Project</b><br/>Retailer training made a requirement for retailers to display the switchover logo</p>   |
| <p><b>Probability (1-3): 2</b><br/><b>Consequence:</b> Resentment when correct information comes to light<br/><b>Impact (1-3): 3</b><br/><b>Risk score (probability x impact): 6</b><br/><b>Owner:</b> (in due course)<br/>Barry Cox, Andy Townend &amp; Supply Chain</p> | <p><b>Further action recommended</b><br/>Compliance monitoring, in line with requirements for having logo confirmed as a certification mark.<br/>Constant pressure for retailer refreshment training and steady supply of updated information from 'Switchco'.<br/>Recognition and acclaim for best practice.</p> |

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| <p><b>B7. Consumer confusion about DTT roof-top coverage</b><br/>Uncertainty around the fringes related to mode, power &amp; international clearances delays production of post-code database</p>   | <p><b>Action already taken by the Project</b><br/>Post-code database design commissioned by DTI from Digital TV Group</p>  |
| <p><b>Probability (1-3): 2</b><br/><b>Consequence:</b> consumer confusion breeds resentment and resistance, and adverse press publicity<br/><b>Impact (1-3): 2</b><br/><b>Risk score (probability x impact): 4</b><br/><b>Owner:</b> Barry Cox &amp; Andy Townend</p> | <p><b>Further action recommended</b><br/>Ensure post-code database is available to support public announcement of regional order and the queries this will generate – even if, for a small number of post-codes, the entry has to be 'not yet known'</p> |

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| <p><b>B8. Consumer confusion about DTT set-top coverage</b><br/>Current inability to predict or make confident statements persists</p>  | <p><b>Action already taken by Project</b><br/>Ofcom research into set top reception (still in train)</p>   |
| <p><b>Probability (1-3): 3</b><br/><b>Consequence:</b> consumer confusion breeds resentment and resistance, particularly among households using set-top aerial for main TV (4%)<br/><b>Impact (1-3): 1</b><br/><b>Risk score (probability x impact): 3</b><br/><b>Owner:</b> Barry Cox &amp; Andy Townend</p> | <p><b>Further action recommended</b><br/>'Switchco' to consider implications of mode decisions and, subject to research findings, how best to convey message that set-top reception should be good where current analogue reception is (objectively) good – but may disappear where households are tolerating (objectively) poor analogue reception.</p> |

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| <p><b>B9. Transmission infrastructure</b><br/>Transmission companies unable to deliver switchover changes at the transmitters in line with requirements placed on broadcasters</p>  | <p><b>Action already taken by Project</b><br/>Government &amp; Ofcom detailed consultation with broadcasters and transmission companies over time required for switchover and for advance planning &amp; negotiation.</p>  |
| <p><b>Probability (1-3): 1</b><br/><b>Consequence:</b> slippage in the timetable with adverse financial effects on other stakeholders<br/><b>Impact (1-3): 3</b><br/><b>Risk score (probability x impact): 3</b><br/><b>Owner:</b> Barry Cox &amp; Andy Townend</p> | <p><b>Further action recommended</b><br/>Commercial negotiation between broadcasters and transmission companies. Transmission companies to manage recruitment and training issues. Broadcasters to review TDN structure (no legal status) and mode of working. BBC coordination of transmission infrastructure has been offered.</p> |

**C. Risks associated with Implementation: for Government and Ofcom to manage (with appropriate liaison with ‘Switchco’)**

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| <p><b>C1. Aerial installation skills</b><br/>Shortage of trained aerial installation staff</p>   | <p><b>Action already taken by Project</b><br/>DTI and SEMTA initiative with CAI and the industry to develop new training syllabus, NVQs and certification</p>                                     |
| <p><b>Probability (1-3): 3</b><br/><b>Consequence:</b> inability to complete installation on communal housing and many consumers served by ‘cowboys’<br/><b>Impact (1-3): 2</b><br/><b>Risk score (probability x impact): 6</b><br/><b>Owner:</b> Jane Humphreys</p> | <p><b>Further action recommended</b><br/>DTI &amp; SEMTA to pursue scheme through to 2005 implementation, highlighting its importance in educational funding priorities. Continue to monitor.</p> |

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| <p><b>C2. Unforeseen demands for public expenditure from public bodies</b><br/>Public sector bodies expected to plan for their own costs plead poverty and argue DCMS should pay.</p>   | <p><b>Action already taken by Project</b><br/>Letters to Government departments, local authorities &amp; housing associations. Draft Regulatory Impact Assessment (RIA) prepared by the DCMS. Initial DCMS discussions with ODPM about public sector landlords.</p>                                  |
| <p><b>Probability (1-3): 2</b><br/><b>Consequence:</b> could delay switchover and/or distort Government spending priorities<br/><b>Impact (1-3): 3</b><br/><b>Risk score (probability x impact): 6</b><br/><b>Owner:</b> Catherine Smadja</p> | <p><b>Further action recommended</b><br/>Complete RIA. Careful design of targeted assistance scheme. Confirmation from relevant Government departments that funding is in place. Follow-up dialogue and progress monitoring for local authorities, housing associations and other public bodies.</p> |

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| <p><b>C3. Concerns from specific consumer groups</b><br/>Pressure for targeted assistance scheme to be widened, coupled with press stories painting the difficulties faced by specific groups who see themselves as vulnerable</p>                     | <p><b>Action already taken by Project</b><br/>Coordinated efforts to ensure reception of audio-description services. Involvement of charities in Stakeholder Group and Consumer Expert Group.<br/>DCMS work on targeted assistance</p>     |
| <p><b>Probability (1-3): 3</b><br/><b>Consequence:</b> very much depends on the perceived fairness of the targeted assistance scheme<br/><b>Impact (1-3): 2</b><br/><b>Risk score (probability x impact): 6</b><br/><b>Owner:</b> Catherine Smadja</p> | <p><b>Further action recommended</b><br/>DCMS to complete process of gathering advice on needs of vulnerable groups and to design targeted assistance scheme. Assuming scheme is well-designed and fair, important then to stand firm.</p> |

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| <p><b>C4. Communications to public sector bodies</b><br/>Inadequate Government communications. Failure to persuade and assist social landlords and public bodies to prepare.</p>  | <p><b>Action already taken by Project</b><br/>Letters to Government departments, local authorities &amp; housing associations.<br/>Draft Regulatory Impact Assessment (RIA) prepared by the DCMS.</p>                                   |
| <p><b>Probability (1-3): 2</b><br/><b>Consequence:</b> threat to timetable and/or increased public expenditure<br/><b>Impact (1-3): 2</b><br/><b>Risk score (probability x impact): 4</b><br/><b>Owner:</b> Catherine Smadja &amp; Jane Humphreys</p> | <p><b>Further action recommended</b><br/>Engage high quality professional advice and use research to ensure Government communications are timely and persuasive. Monitor progress. Timely action with an eye on regional timetable.</p> |

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| <p><b>C5. Change of political direction</b><br/>Mid-way through the implementation process, either the Government changes its mind or the Government itself changes and new Government has new policy</p>   | <p><b>Action already taken by the Project</b><br/>Recognition that the next election is likely to precede the main investment, that Governments cannot bind their successors, but that a change of policy after investment has been made could lead investors to claim for compensation</p> |
| <p><b>Probability (1-3): 1</b><br/><b>Consequence:</b> could significantly delay timetable and defer switchover benefits<br/><b>Impact (1-3): 3</b><br/><b>Risk score (probability x impact): 3</b><br/><b>Owner:</b> Jane Humphreys &amp; Catherine Smadja</p> | <p><b>Further action recommended</b><br/>Officials to brief Ministers on the economic penalties of delay and on potential claims for compensation</p>   |

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| <p><b>C6. Environmental impact unacceptable</b></p> <ul style="list-style-type: none"> <li>digital receivers consume too much power</li> <li>risk of an ‘analogue TV mountain’ of disposed TVs</li> </ul>   | <p><b>Action already taken by Project</b></p> <ul style="list-style-type: none"> <li>DTI work with DEFRA and calculation of the net impact on energy consumption of the switchover policy</li> <li>DTI work with DEFRA and others on WEEE directive</li> </ul> |
| <p><b>Probability (1-3): 2</b><br/> <b>Consequence:</b> more likely to require policy intervention than to alter switchover commitment<br/> <b>Impact (1-3): 1</b><br/> <b>Risk score (probability x impact): 2</b><br/> <b>Owner:</b> Jane Humphreys</p> | <p><b>Further action recommended</b><br/> Additional efforts to persuade manufacturers to comply with EU voluntary code on energy efficiency. Continuing work on implementation of WEEE directive.</p>   |

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| <p><b>C7. Legal challenge to switchover</b></p> <ul style="list-style-type: none"> <li>Individual consumers could challenge the right of Government &amp; Ofcom to require the broadcasters to switch</li> <li>Allegation of breach of competition policy and/or improper use of State Aid (nb . Berlin &amp; other cases)</li> </ul> | <p><b>Action already taken by Project</b></p> <ul style="list-style-type: none"> <li>Legal advice in drafting the Communications Act (noting that UK courts have said to date that there is no right to TV) and in the use of regulatory powers</li> <li>Work with lawyers to ensure that no action could transgress State Aid rules</li> </ul> |
| <p><b>Probability (1-3): 1</b><br/> <b>Consequence:</b> more likely to result in delay than in overturning switchover<br/> <b>Impact (1-3): 2</b><br/> <b>Risk score (probability x impact): 2</b><br/> <b>Owner:</b> Catherine Smadja, Jane Humphreys &amp; Ofcom</p>  | <p><b>Further action recommended</b><br/> Continuing legal vigilance, not just in regulatory actions but, in respect of State Aid, in marketing, communications, targeted assistance &amp; practical support</p>  |

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| <p><b>C8. Spectrum management constraints</b><br/> International restrictions on UK’s flexibility to redeploy the cleared spectrum, arising at Regional level in 2006 or at world radiocommunication conferences in 2007 and 2010</p> | <p><b>Action already taken by Project</b><br/> Calculation of benefits for Cost-Benefit Analysis done on conservative basis of assuming reuse for broadcasting. Radiocommunications Agency &amp; Ofcom international work to date.</p> |
| <p><b>Probability (1-3): 1</b><br/> <b>Consequence:</b> reduction in the benefits assumed from the reuse of frequencies<br/> <b>Impact (1-3): 2</b><br/> <b>Risk score (probability x impact): 2</b><br/> <b>Owner:</b> Ofcom</p>     | <p><b>Further action recommended</b><br/> Ofcom and Government preparation for forthcoming conferences and relevant bilateral discussions with other countries</p>   |

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| <p><b>C9. Technology changes</b><br/>Any risk to switchover if</p> <ul style="list-style-type: none"> <li>• DTT moves to 8K?</li> <li>• UK &amp; Europe adopt MHP?</li> <li>• HDTV becomes much more important because of large screen TVs?</li> </ul>      | <p><b>Action already taken by Project</b></p> <ul style="list-style-type: none"> <li>• 8K capability required in TXs and for display of switchover logo on DTT receivers</li> <li>• MHP transition policy</li> <li>• monitoring HDTV, especially compression standards</li> </ul>   |
| <p><b>Probability (1-3): 1</b><br/><b>Consequence:</b> UK could become technology backwater or existing receivers cease to work<br/><b>Impact (1-3): 1</b><br/><b>Risk score (probability x impact): 1</b><br/><b>Owner:</b> Jane Humphreys, with Ofcom</p> | <p><b>Further action recommended</b><br/>Enforce receiver requirement for 8K. Keep MHP transition policy under review.<br/>HDTV due on satellite. Consider whether any requirement for DTT and/or cable. If required on DTT, two HD services could potentially be delivered per new multiplex. Resolve compression standards.</p> |

## 6.2 The DTT technical trial

6.2.1 The principal learning point from the *Go Digital* pilot in the Midlands, when some 250 houses were converted to digital for a temporary period, was the difficulty of recording with full functionality. In terms of risk management, the absence of digital terrestrial recording equipment was a major concern until a joint group of broadcasters and manufacturers, led by Keith Hayler of Crown Castle, addressed the problems of providing seven day advance programme information via the DTT transmissions, to facilitate recording by clicking on the Electronic Programme Guide. This has now opened up a market for DTT twin tuner hard disc recorders.

6.2.2 Before being confident about the **How?** of switchover, the Digital TV Project therefore judged it essential to undertake a practical test to check that this potential answer to the DTT recording issue worked satisfactorily. A DTT Technical Trial was designed to test switchover for real, but on a small-scale, to check the recording experience and to learn in a number of other ways too e.g.

- the coordination of work at the transmitter with the installation and operation of reception equipment and the related advice and support
- the nature and extent of installation help and other support required
- the nature and extent of remedial aerial work required
- ease of use and popularity of the new digital equipment (and no analogue).
- acceptable and unacceptable levels of complexity for consumers.

This technical trial has been – and remains -- a significant element in the Project's approach to risk reduction.

6.2.3 Following a local consultation, the DTT technical trial is now starting in two villages served by the Ferryside transmitter in South Wales. The Ferryside terrestrial transmitter will be switched fully to digital in two stages:

- in late 2004, when digital transmissions are due to start

- in spring 2005, when analogue transmissions are due to be switched off. The BBC, D3&4 and SDN with Crown Castle and ntl will manage the transmission changes.

6.2.4 Households will be offered a standard choice of receiver equipment which the DTI has selected and tested for functionality, usability and performance and a local retailer with well-trained staff has been contracted by the DTI. Households are able to make their own arrangements to acquire receivers if they prefer and satellite options are available. Clearly, the trial arrangements will not represent the actual experience of switchover elsewhere, not least because, within sensible bounds, reception equipment is to be supplied free to the households. However, a report on all the learning points from the trial will be produced in the first half of 2005, with feedback in the meantime to the Project Team, Intellect and the DTG Supply Chain group. One point which has emerged already is the existence of an analogue version of BBC-2 Wales which is not simulcast in full. The DCMS and the BBC need to consider the implications of this for avoiding service deprivation at switchover.

6.2.5 If the trial is successful, the two villages served by the Ferryside transmitter will become the first in the country to switch permanently, and exclusively, to digital TV and they will certainly be playing a major role informing the ongoing process of managing, and reducing, risk.

## 7. WHEN?

7.1 The Ministerial Statement to Parliament on July 22<sup>nd</sup> 2004 signalled the Government's move away from pursuing the completion by 2010 option and marked its progress in identifying the optimum timetable in conjunction with Ofcom, the broadcasters and other stakeholders. In the Statement the Government said that:

“While the broadcasters have not reached a full consensus on the optimum timetable, some – including the BBC – have suggested that 2012 may be the most appropriate date for the completion of switchover. This could mean beginning the switching sequence as early as 2007...Ofcom therefore plans to include reference to this timetable in the draft digital licences for Channels 3, 4, 5 and Teletext which they expect to publish for consultation later this summer.

We continue to believe that an ordered process leading to the earliest practicable switchover remains desirable given the advantages to consumers, the broadcasting industry and future growth of innovative new services. We believe that switchover should be broadcaster-led but that the final decision on timetable should balance these benefits against the need to ensure that the interests of the most vulnerable consumers are protected.”

7.2 Now that the draft digital licences have been published by Ofcom, with 2012 as a proposed back-stop date, the UK in effect has a working hypothesis for its switchover timetable. It will be for Government to decide whether to endorse that timetable once it is “satisfied that adequate measures are in place” to meet its objective of protecting the interests of the most vulnerable consumers. The Government now has the Report of the Consumer Expert Group on issues the Group recommends need resolution before finalising the timetable. It also has the report of the Ofcom Consumer Panel to inform its decisions.

7.3 The Cost Benefit Analysis (CBA) shows that the Net Present Value estimated for switchover is greatest the earlier the completion date (with 2010 being the earliest completion date considered). The difference between 2010 completion and 2014 completion, for example, is of the order of £1.2 billion. However, compulsory costs reduce by choosing a later date since more of the population will have switched voluntarily. The CBA model forecasts that, in the base case without switchover, 82% of households would have switched their main TV to digital by the end of 2010 and that by the end of 2012 this figure would be 87% (Ofcom forecasts are lower).

7.4 Not only do compulsory costs diminish by choosing a later date but, up to a point, so do risks. The optimum date is not the one where the benefits most fully exceed the costs but where the *risk-adjusted benefits* most fully exceed the costs (going for a high benefit with a high risk of failure is generally unwise). This means that finding a timetable with which the major investors are in agreement is essential. Excessive delay, however, would increase the risk that the strategy of Managed Migration loses momentum. So would a pattern of constantly slipping dates.

7.5 Ensuring that the funding is in place for the marketing, communications and practical support costs is an essential for ensuring credibility with stakeholder

investors. The timing of decisions during 2005 on the financial terms of the digital licences and on switchover-related aspects of the BBC's Charter Review and funding will therefore have a bearing on the switchover timetable.

7.6 The readiness of 'Switchco' and its ability to handle communications, will be a factor, as will be the Successor Project's grasp of programme management.

7.7 The progress of, and lessons from, the DTT technical trial are clearly relevant. It should be apparent during the first quarter of 2005 whether the Ferryside analogue transmissions can be switched off with the local community's support.

7.8 The supply chain's readiness for switchover is also a vital consideration. Several of the high scores in the risks listed in section 6 above relate to the receiver, recorder and aerial supply chain. Advanced programme information for DTT only started being broadcast across the UK as a whole at the end of July 2004 and, other than Sky +, digital recorder products are extremely hard to find in the shops. The investment required to gear up for replacing some 17 million VCRs over the next few years has not yet been made. Investment in digital tuners in flat-screen TVs is only just beginning. However, the supply chain is not going to gear itself up 'on spec'. The manufacturers' and retailers' message to Government within the Action Plan work has been very clear:

- do not expect much more investment until the timetable is settled
- the timetable must be credible as genuinely finalised and not subject to slippage as the projected start-date nears
- give as much reliable advance notice as possible (preferably not in the midst of the Christmas sales period).

7.9 Neither consumers, local authorities, nor landlords will fully focus on what they need to do to prepare for switchover until the Government endorses a timetable which looks set to be final. While the risks diminish by choosing a completion date of e.g. 2012 rather than 2010, they also diminish *the earlier the timetable is confirmed and the more advance notice consumers and other bodies affected have.*

7.10 The question **When** has three components:

- what is the completion date?
- what is the start date?
- when will the start and end dates be finalised and announced?

7.11 The emerging answers are:

- following a period of consultation, Ofcom intends to firm up the back-stop date for inclusion in the finalised digital licences at the end of 2004
- appropriate consultation on the regional order
- it should then be possible for the Government -- taking into account funding issues, the protection of the interests of the most vulnerable consumers, and the full range of other relevant factors listed above -- to endorse the Ofcom dates, giving ample early notice of the region-by-region switchover timetable and giving 'Switchco' the focus it will require for communication.

## 8. THE SUCCESSOR PROJECT

8.1 When the Action Plan was first developed and the Digital TV Project began at the end of 2001, its objective was unclear. In the course of its work, by focussing on the questions **Whether, How and When?** the Project became, in effect, the feasibility study required ahead of any major investment project, whether for Government or private sector investment. Primarily through the work of the Cost Benefit Analysis team of Government economists, the Project has identified the Business Case – at UK plc level – for proceeding with switchover. It has also proposed a workable strategy and practical plan for undertaking switchover and informed Government and stakeholder thinking about the timetable.

8.2 The next step is preparing for implementation (in the OGC's terminology Mobilisation). While implementation is seen as broadcaster-led, with supply chain involvement, at this stage 'Switchco', even when formally constituted, could not deliver across the full range of activity – especially in 2005. Government and Ofcom have postponed into 2005 some of the key Tasks for which they had responsibility under the Action Plan, e.g. funding, finalising the regional order for switchover, and deciding the DTT mode for the public services. When asked what elements of the Digital TV Project, they see themselves continuing to manage, their answers include:

| <b>Government</b>                               | <b>Ofcom</b>                                  |
|---|---|
| Review of BBC Charter & funding                 | Financial regime for ITV, C4, C5 and Teletext |
| Regulation of S4C                               | Regional order for switchover                 |
| Government communications                       | DTT mode                                      |
| Relations with consumers                        | Frequency planning                            |
| Targeted assistance scheme                      | International negotiations on spectrum        |
| Communal housing nb public expenditure planning | Transmission industry competition             |
| Aerial installer training scheme                | Research & monitoring                         |
| Energy efficiency                               | Use of released spectrum                      |

8.3 Leaving the Government and Ofcom 'off to one side' when designing the Successor Project would constitute a risk. Decisions in the areas for which they retain responsibility will have a powerful influence on implementation and could, in some scenarios, alter the timetable with implications for stakeholder investment. Moreover, while the Government will not itself be leading implementation, it has a lot of political capital invested in implementation being managed successfully – and carries the ultimate policy responsibility for setting the framework.

8.4 Should the present Digital TV Project be extended until more of the major Government and Ofcom decisions have been taken? After all, the requirement to conclude the Action Plan work by the end of 2004 stemmed from the remit to have as a Government option the full completion of switchover by the end of 2010. Now that the focus has shifted to the completion by 2012 target contained in Ofcom's consultation document, the pressure is off? The present structure could, if desired, be

extended for, say, another year. This option is **not** recommended. The present structure was designed to carry out a feasibility study but it is neither funded nor legally constituted for going much beyond that. The production of a consumer advice leaflet for use in shops at the point-of-sale raised quite tricky issues of authorship. Was it Government advice? Was it stakeholder advice? What is required as soon as possible now is 'Switchco' advice. Moreover, given the connections with the BBC Charter Review and the Ofcom licensing process, the scope of the total programme has increased beyond the scope of the Digital TV Project. A new structure is essential for going forward. Designing and setting up this structure will extend well into 2005.

8.5 It is not for the feasibility study to plan in detail the structure for implementation. Those who will be responsible for implementation will, quite properly, wish to plan this for themselves. They will, however, need a wider framework within which to undertake this work, including a Supervision Board and a continuing role for the Digital Stakeholder Group.

8.6 The BBC has offered to help fund the start-up of 'Switchco' by the end of 2004, ahead of the resolution of all the funding issues relating to switchover, working with other broadcasters, other stakeholders and the Government.

8.7 In order to make the transition to the Successor Project, it is proposed that the current Digital TV Project Steering Board, chaired by Ministers, and with DCMS, DTI, Ofcom, broadcaster, manufacturer, retailer and consumer representatives, should review its membership with a view to becoming, at least in the short term, the framework-setting Supervision Board.

8.8 The transition arrangements to 'Switchco' will need to encompass a continuing process for Risk Assessment and control. The Digital TV Project will need to hand over its full Risk Register, in a format which separates action already taken from action recommended for the future, and the October 2004 Risk Management Workshops will need to be continued under 'Switchco' management. Risks related to the Implementation set-up phase (Mobilisation) need to be identified separately from risks related to implementation itself.

8.9 The other immediate Next Steps are:

***For the BBC and other public service broadcasters (in October/November 2004)***

- to establish a working group to set up 'Switchco', with the participation of the Supply Chain, and with a mechanism for liaising with the Government and Ofcom
- to appoint key (acting) 'Switchco' staff to whom the Digital TV Project members can hand over appropriate tasks (recognising that Government, Ofcom, and normal stakeholder business will continue in parallel)

***For Ofcom***

- to undertake the digital licensing process as planned, including in the digital licences at the end of 2004 a back-stop date for completing switchover

***For the Government***

- to consider the Report of the Consumer Expert Group

- to respond to the recommendations of the Office of Government Commerce
- to receive the advice of Ofcom's independent Consumer Panel and of leading charities on what measures should be taken to ensure that the interests of the most vulnerable consumers are protected -- and then to take decisions
- to resolve BBC funding in respect of switchover-related matters
- to decide whether it can then endorse the timetable named by Ofcom

***For the DCMS specifically (in both 2004 and 2005)***

- to undertake public explanation of the Government's policy of switchover

***For the DTI specifically (in autumn 2004)***

- to complete the set-up of the switchover certification mark scheme for use by receiver manufacturers, retailers, aerial companies and others
- to complete the set-up of the aerial installer training scheme

***For the Digital TV Group (in autumn 2004)***

- to facilitate agreement of a supply chain Memorandum of Understanding.

8.10 On that basis the Digital TV Project can be closed, as planned, at the end of 2004, having completed its work, with thanks to all who have contributed to it.