

Digital Switchover

Report of the housing scrutiny sub-committee

March 2008



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Foreword

1. The government's decision to switch off analogue television transmission by 2012 will disconnect a large number of Southwark's residents from television reception – predominantly those in blocks who use communal antennae - unless the council acts to address the Digital Challenge.
2. There are four main types of technical solution to the Digital Challenge and the solution could come from any of these.
3. The sub-committee recommends that the basis for the forthcoming procurement in relation to the Digital Challenge be based around Internet Protocol (IP) TV as this offers the greatest potential to address the Digital Challenge as well as tackling Digital Exclusion, whilst also offering the potential for interactive TV services and Southwark-specific channels. Of the four options, IPTV offers the possibility of content revenue sharing and as such may prove to be the lowest cost but highest benefit solution available to the council.
4. IPTV is the highest reward approach but, as an emergent technology, is also the highest risk. Masthead Antenna upgrades would be the lowest risk but lowest reward. Both satellite "IRS" and cable solutions could meet the challenge technically but they are the highest cost solutions and for that reason the sub-committee could not support them given the financial challenges faced by the council.
5. Removal of the dishes and aerials which cause damage and health & safety issues to Southwark's blocks should be undertaken following roll-out of any solution.

Councillor Tim McNally
Chair, Housing Scrutiny Sub-Committee

Aim of the review

6. The aim of the review is to identify possible solutions to digital switchover - the loss of analogue transmission – and to bring forward a recommendation to assist the Executive Member for Housing decide which technology to base Southwark's procurement exercise around.

Digital switchover

7. Digital switchover describes the process of switching all TV services from analogue format to digital format. Sound and pictures from the broadcaster are converted into 'bits' of information and sent through an aerial, satellite, telephone line or cable. This digital signal is then turned back into pictures and sound by a digital box (commonly known as a "set top" box) or digital TV set.
8. The Government is determined that all households should benefit from digital TV and has stated its commitment to achieving digital switchover between 2007 and 2012. Currently, one in four UK homes cannot receive digital TV via their aerial and many still cannot receive channel Five. Only by switching off the existing "analogue" broadcasting system will it be possible to boost the digital signal and broadcast to all parts of the country.
9. Switchover is taking place region by region, to minimise interference and disruption, and is already underway - on October 17 2007, Whitehaven in Cumbria became the first town in the UK to switch to digital-only television. Whitehaven's analogue signals have been turned off and replaced with a stronger digital picture. Information was delivered to households in the area, explaining what was happening. There were also advertisements in local media and extra information was made available through libraries and local retailers.
10. London is the last region to be converted in 2012. However, there are credible expectations that the deadline could effectively be brought forward to December 2011, in order to allow for the Olympic Games and a reasonable level of contingency. After this date, a significant proportion of tenants and leaseholders will not be able to view a television picture, unless upgrades are made to communal aerial systems and cabling. This is true, even if the tenants have a free-to-air (Freeview) box or a modern television with an inbuilt digital decoder, because it is unlikely that the specification of the aerial and cabling will be adequate for the reliable reception and transmission of digital terrestrial signals.

Background to the review

11. The council manages circa 54,000 properties, around 42,000 of which can be served by communal television aerials. These systems were originally designed to carry only a few television channels transmitted in the traditional, analogue format. Many of these distribution systems are over 30 years old. They are not capable of transmitting the numerous digital channels from terrestrial and satellite broadcasters. This means that once the analogue television signals are switched off, Southwark's communal television aerials will cease to deliver television signals.
12. The current target for switching off analogue transmission of the five basic channels is in early 2012, in time for the London Olympics. It is accepted that the provision of a television signal for the basic five channels is a responsibility of the council under the tenancy agreement. The Council can reasonably be said to have the following objectives in relation to digital switchover:
 - To ensure that tenants and leaseholders can view digital television post 2012;
 - To provide an affordable solution that represents good value to the Council, tenants and leaseholders;
 - To maximise tenant choice in relation to subscription services;
 - To provide a robust, resilient and future-proof solution;
 - To make possible the removal of satellite dishes installed in contravention of tenancy agreements; and
 - To ensure the solution supports future Council initiatives to deliver services via Digital TV and addresses digital exclusion.
13. Deploying a solution to all affected tenanted properties is likely to take two years with an additional year being required for procurement. The principal homes affected are those where the installation of individual aerials or dishes is not practical because they are in a block or within a conservation area. An additional 12,000 are not suited to communal aerials.
14. Many tenants and leaseholders have installed satellite dishes in breach of their tenancy agreement or lease, and these dishes are not only unsightly but can damage the fabric of buildings as well as being an uninsured health and safety risk. It is recognised that in many cases dishes are used for the reception of "country of origin" channels which are not available on Freeview, or in some cases not via the Sky "Astra" satellites.

15. The sub-committee considered whether it was reasonable to demand that these dishes be removed and concluded that it would be reasonable if, and only if, a viable alternative which delivered access to country-of-origin channels and to the Sky channels which are in many cases the only access to channels showing football and other sports.
16. The sub-committee considered the four options listed below and described in detail at Appendix A. It concluded that it would concur with officer conclusions reached in parallel with this review.
17. At the December 2007 housing scrutiny sub-committee meeting it was resolved to recommend the investigation of MATV or IPTV as an option for digital switchover, and that IRS and Cable television systems be discounted.

The sub-committee

11. Between the date of the first session on June 13 2007 until the close of the review in December 2007, membership of the sub-committee was:

Councillor Tim McNally (Chair)
Councillor Paul Bates (Vice-Chair)
Councillor Adedokun Lasaki
Councillor Danny McCarthy
Councillor Jane Salmon
Councillor Althea Smith

Councillor Sandra Rhule attended meetings as a reserve member.

Co-opted members were Mr Dave Clark, Ms Lesley Wertheimer, Mr Al-Issa Munu and Mr John Nosworthy.

12. The sub-committee agreed that Councillors Adedokun Lasaki and Althea Smith act as lead/rapporteur members for this review.

Method of review

13. The sub-committee held formal meetings in order to investigate the Council's options in regards to the Digital Challenge. In addition, the Chair and other rapporteur members met on several occasions with officers from Environment & Housing and with the consultant from Serco as well as holding a number of structured meetings with potential suppliers of the various types of systems.

Technical options

14. The four options are set out in detail at Appendix A. All of these require some form of set-top box. The sub-committee's comments are as follows:

- Master Antenna Upgrades “MATV”

The current communal aerials which serve circa 32,000 properties are often out-dated and do not support the reception of digital terrestrial TV - “Freeview”; another 10,000 properties are suitable for communal aerials. They would therefore need to be provided with modern antennae and new cabling.

- Shared Satellite Dishes “IRS”

Many local authorities have chosen to provide IRS systems using either the Astra or dual Astra & Hotbird (to provide additional country-of-origin channels) satellites. Combined with a Freeview compatible terrestrial signal feed this provides a wide choice of channels and subscription options.

- Cable TV

Much of Southwark was cabled in previous decades but not universally.

- Internet Protocol “IPTV”

IPTV is a newer technology which uses either the Internet or a private network “Intranet” to deliver TV as well as the possibility of other services.

15. All four options offer a viable solution to the Digital Challenge, but vary in cost.

Comparison of options and recommended approach

16. The sub-committee discounted the IRS and Cable solutions as:

- They were the highest net cost to the authority, and, as this was not a responsibility of the authority, could not be recommended given the pressures faced by the council’s budget, despite the recommendations of Digital UK favouring IRS systems;
- They would award an effective monopoly to Sky and Virgin Media respectively whilst putting the financial burden of creating it onto Southwark; and
- They did not offer access to a diverse enough portfolio of country of origin channels.

17. The sub-committee advocated IPTV because:

- It offered the greatest opportunity in terms of additional offerings such as internet access to all the homes, the ease of providing a Southwark or other community channels; and

- It offered the possibility of being delivered at either no cost to the authority, or with a revenue-sharing payback period estimated at four to five years by sharing a percentage of the profits made from any subscribers taking premium content.
18. The sub-committee also advocated the fallback position of antenna upgrades because, whilst not offering any additional benefits to residents this would meet the council's obligation at the lowest forecast cost.
 19. The 10,000 Street properties which are not suitable for communal antennae can be addressed using single dwelling antennas, dishes, or cable, with individual antennae being the lowest cost unless they choose to subscribe to satellite or cable (free installation).

Comparison of technical solutions

	Antennae upgrade (MATV)	Shared satellite dishes (IRS)	Cable	IPTV
Cost per household	£130 - 150	£160 – £190 £245 Sky Plus £260 dual sat	Unknown ¹	£0 - £235 ²
Need for set-top box	Yes	Yes	Yes	Yes
Cost of set-top box	£10+	£0 - £150 ³	£0 - £10 ⁴	£50+
Allows removal of illegal dishes	No	Yes ⁵	No	Yes
Wide range of country of origin channels	No	No ⁶	No	Yes
Could provide internet access for residents	No	No	Yes	Yes
Could provide community channel(s)	No	No	Yes	Yes
“Futureproof”	No	No	No	Yes
Awards a de-facto monopoly	No	Yes	Yes	Yes
Potential content revenue sharing ⁷	No	No	No	Yes
Offers telephone	No	No	Yes ⁸	No

¹ Virgin Media initially declined, then cancelled, then failed to attend the arranged meetings

² Both potential suppliers indicated that a revenue sharing model was possible and could help reduce the Council's costs

³ Set to box free with subscription to Sky, otherwise FreeSat channel card and set top box £150

⁴ Freeview box for 30 free-to-air channels, or free set-top box with subscription

⁵ Although some country of origin channels would still require dishes, eg Hotbird for Turkish TV

⁶ Sky provides a limited number of country-of-origin channels (45). Additional ones could be provided by using a second dish to HotBird or a three-dish setup with the third pointing to Polsat, RAI or other similar satellites

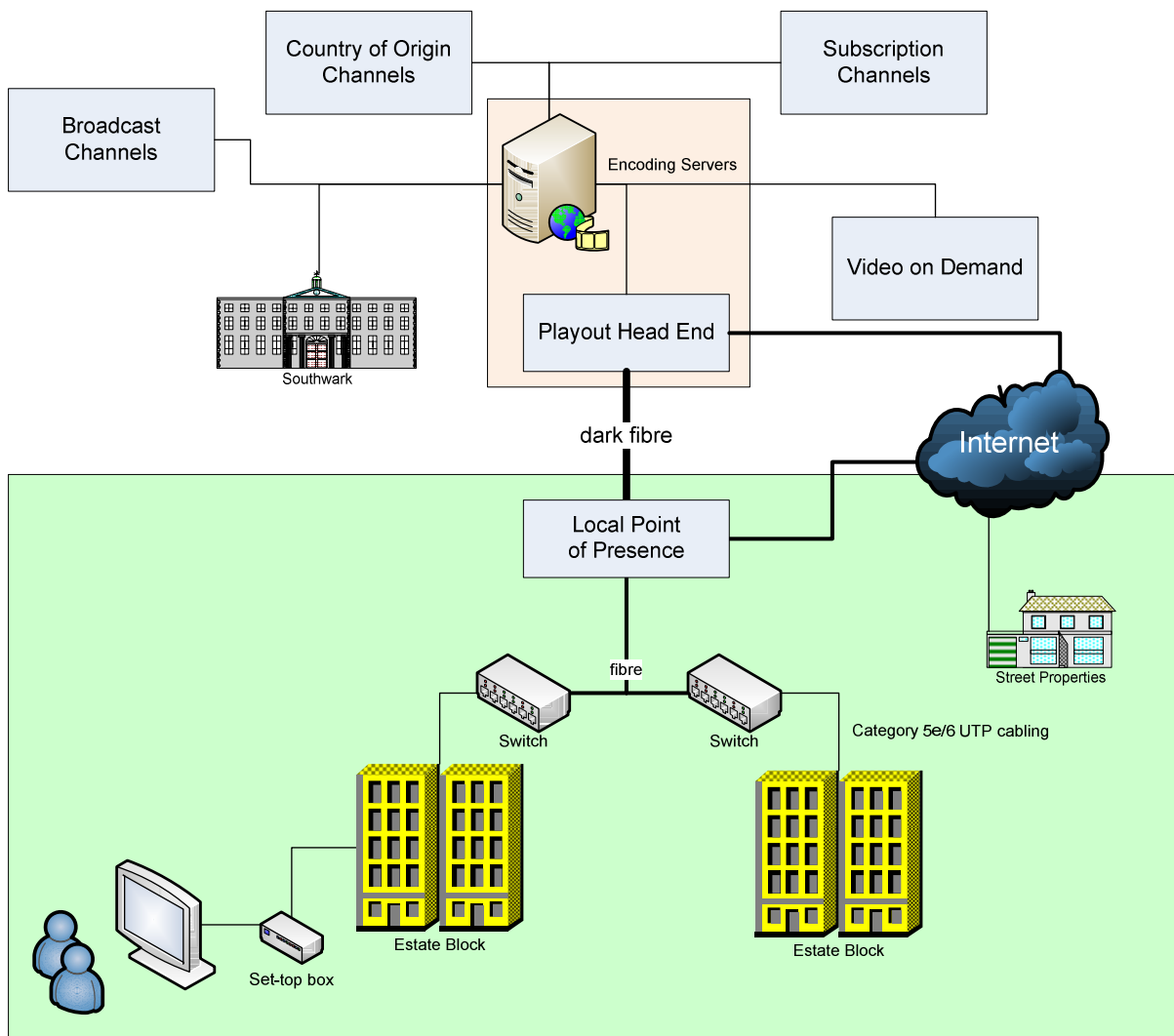
⁷ Providers were asked whether they would consider a Content revenue sharing model

⁸ Cable can offer internet and phone packages on subscription

Risks and rewards with IPTV approach

20. The antennae replacement option offers a low cost and low risk response to the council's obligation in terms of the Digital Challenge. It does not however address the needs of a diverse population to access country-of-origin TV, does not provide any opportunity to provide access to the internet, nor the ability to remove the satellite dishes from blocks. It is a solution without opportunity.
21. The IPTV approach which is typified by the Homechoice/TiscaliTV offering does address all of these issues but is based on new technology and this approach has not yet been delivered by any UK local authority, although some pilot schemes have been trialled in Islington, through the "Digital Region" initiative in Yorkshire and through the "Digital Bridge" scheme in Shoreditch which was delivered to 900 users using the Homechoice service.
22. Sky has run pilot projects using IPTV and term this "Sky by Wire". Given the high costs of providing and launching satellites there is some belief that Sky will switch in the future to an IPTV model and that this is the rationale behind them offering free internet connections to subscribers.
23. IPTV offers a chance to defray the costs in whole or in part by entering into a long-term contract with a Content Provider. One of the potential suppliers gave examples from a pilot project which showed that, because some users will choose to subscribe to additional content or use other online facilities which will generate revenue, in that pilot the average annual revenue was £27pcm of which £15pcm is profit – they indicated that they could offer £5 of that back to the council thus achieving payback for the installation costs within a four to five year period. They also indicated that for a longer-term contract the costs of provision of the infrastructure might be taken by the provider.
24. The infrastructure needed to deliver IPTV to the 42,000-55,000 homes in Southwark would in effect be an Intranet – a private network which would use a combination of fibre and traditional Category 5 Unscreened Twisted Pair cabling. A set-top box would be required and this could range from a basic model to one with a Personal Video Recorder (PVR) or incorporating a wireless router to provide WiFi internet access – costs for the set-top box could range from £50-90 dependent on facilities needed.
25. IPTV is the most flexible in terms of country-of-origin channels as it is possible to license content from anywhere in the world, unlike satellite where only "visible" northern hemisphere channels can be accessed. It thus is easy to license a channel from, for example, Sierra Leone and cater to minorities who are otherwise disconnected from their home country.

26. IPTV provides an infrastructure for two way communication between the public sector and residents and could allow communication between households and the council, police and other key local public sector stakeholders. As an example the *Digital Bridge* pilot in Shoreditch led to a 600% increase in the reporting and clearance of graffiti and a 200% increase in the reporting and clearing of vandalism.
27. The infrastructure required for IPTV is the same as deploying a Wide Area Network for ICT and uses conventional computer cabling technologies:



28. IPTV would allow Southwark to stream, without cost, its own content to connected households, whether a simple rotating series of public service announcements similar to the 20 plasma screens throughout the borough but eventually offering a low cost way of enabling community channels or the broadcasting of council meetings.

Final recommendation

29. The sub-committee has a preference for the IPTV option - which although the riskiest could offer the greatest potential benefits and opportunities. The MATV upgrades remain a low risk and low cost alternative. Taking note of recent advice, we concur that officers should now enter into competitive dialogue with the marketplace.

Meeting agendas, reports and minutes

The agendas, reports and minutes of all meetings of the sub-committee are available from the scrutiny project manager, scrutiny team, Town Hall, Peckham Road, London SE5 8UB [Telephone 020 7525 4350].

Technical options

There are four technical options for achieving digital switching. These are not necessarily mutually exclusive, some require investment by the council and others are available to council tenants now. Some London Boroughs have already embarked on very expensive upgrade programmes, principally based on Integrated Reception Systems (IRS - see below).

MATV Upgrade Digital Terrestrial Television through an Aerial)

This option would involve replacement of Master Antennas (MATV) on communal Multi Dwelling Units (MDUs) with an aerial capable of carrying digital signals. As well as this, further upgrade to the distribution network to individual socket outlets is also likely to be required. Residents who do not have televisions with a built in digital decoder would require a set-top box enabling reception of free digital channels (Freeview). This is probably the minimum the Authority could do and could be viewed as a 'like for like' upgrade. Whilst costs would be significant at approximately £2 million, it is the lowest cost option. However, MATV upgrades do not always provide a consistent picture and access to minority channels, e.g. foreign language services would be limited making it difficult to enforce removal of satellite dishes.

LB Wandsworth has already embarked on a project of MATV upgrades. By making necessary upgrades to its communal stock of aerials (approximately 7,000 aerials - a third of the council's total), the council has complied with the minimum government requirements and tenants in these buildings are now able to view digital television with the aid of a freeview box. The remaining two-thirds of LB Wandsworth's aerial stock, meanwhile, will be upgraded to Integrated Reception Systems (IRS -see below) by 2010. At this stage, all of the council's aerials will be digital compatible, and from mid 2010 the original communal stock will be gradually upgraded to IRS as well.

This case study indicates how MATV upgrades, as a lower cost option, can be used as a temporary stop-gap to simply meet minimum government requirements and provide digital TV services, but which will eventually need to be upgraded to a more future-proof system.

Integrated Reception System (Digital Satellite)

Digital Satellite broadcasts, e.g. Sky, cover over 96-98% of UK households. Implementing this option would involve replacing the existing Master Antenna with an Integrated (Satellite) Reception System (IRS). IRS is, in effect, an MATV system that has been extended to carry satellite signals. An IRS system carries satellite signals to four parallel trunk cables with a fifth cable available to carry terrestrial channels. This is known as a five-wire system. The receiver on the TV set sends a signal to a multi-switch that determines which of the five cables to connect to.

Additionally, in order to deliver the full range of potential channels, e.g. English, Asian, African and Arabic services to LB Southwark's diverse population, two or three satellite dishes (requiring nine or thirteen wires respectively) would be required. The further introduction of High Definition channels (Sky is already broadcasting in HDTV) is also likely to increase the number of trunk cables required.

Separate IRS providers have estimated a price guide for IRS installation in Southwark was as follows:

A standard 5 wire system - between £160 & £190 / property

A 9 wire system in Southwark (which would deliver two satellite options) - between £200 & £310 / property

A 13 wire system - between £300 & £350 / property

It is estimated that a borough wide upgrade could cost as much as £15 million plus as a capital purchase allowing for tenant liaison, listed building/conservation area restrictions, hazardous materials, etc. This would be even more expensive if the system is leased. Further, IRS implementation would probably also require a certain amount of re-cabling - to replace wear and tear of the current infrastructure. This would obviously raise the overall costs.

It is estimated that IRS systems would be able to last in excess of fifteen years, and IRS providers claim that new technology would most likely supplement an IRS, rather than replace it.

The significant proportion of London Boroughs have adopted IRS as a preferred solution. This is because IRS maximizes tenant choice and it is Vendor neutral (although it reflects Sky's dominance of the subscription television market).

Kirklee's Council has opted for a SKY interactive service that provides 200 free channels, 45 non-English channels as well as pay per view channels.

In 2006, LB Islington conducted a free trial for residents to compare the service and products of Sky TV (IRS) and Home Choice (a provider of Internet protocol TV). At the time of the trial, Sky TV proved the more popular option with residents, receiving an 85% rate of preference. The reason for this preference was that Home Choice had required the installation of home phone lines, in order to provide digital TV over an internet connection. Residents objected to the prospect of paying for the installation and rental of phone lines as many preferred to forego traditional landline connections in favour of cheaper cellphone contracts.

It is worth noting that, although this case study highlights the popularity of IRS systems such as SKY TV, this trial was conducted in late 2006 and that digital television technologies have increased and improved dramatically since then - especially with regards to IPTV options, which no longer require the installation of home phone cabling.

Digital Cable

Cable television (CATV) is a system of providing television to consumers via radio frequency signals transmitted to televisions through fixed optical fibres or co-axial cables, as opposed to the traditional "over-the-air" broadcasting method which requires a television antenna. Digital radio, broadband Internet and telephone services can also be provided via digital cable.

The main UK provider of Cable Services is Virgin Media (formerly NTL/Telewest). NTL/Telewest cabled LB Southwark's estates in the 1980s, but it is not clear whether cabling between the spine and the service hubs within each block was completed because street works were required, the justification for which would have depended on subscription uptake. Neither is it clear what state of repair the cabling is in or what proportion of the Council's tenants subscribe to Cable services. A solution premised on Cable TV would almost certainly require investment by the Council, the cost of which is currently unclear. Any investment by Virgin would almost certainly be premised on exclusivity regarding provision of content.

Internet Protocol Television

Internet Protocol Television (IPTV) uses broadband over a private network to deliver syndicated broadcast content (freeview services and premium content), broadband Internet access and voice over IP. A general definition of IPTV is television content that, instead of being delivered through traditional broadcast and cable formats, is received by the viewer through the technologies used for computer networks.

An IPTV network allows for the delivery of significantly more content and functionality. In a typical TV or satellite network all the content constantly flows downstream to each customer, who switches between the content at the set-top box and can select from as many choices as the telecommunications, cable or satellite company can stuff into the "pipe" flowing into the home.

An IPTV network works differently. Content remains in the network, and only the content the customer selects is sent into the customer's home. That frees up bandwidth, and the customer's choice is less restricted by the size of the "pipe" into the home.

The IPTV industry has developed and advanced considerably in the past two years. Homechoice, now owned by Tiscali, were the pioneer of IPTV, an innovation made commercially viable by local loop unbundling. Other service Providers have also moved into this space, including BT with its BT Vision product. Virgin and Orange have signaled an intention to introduce IPTV services within 12 months.

IPTV is currently being viewed as a forward-thinking opportunity. For Southwark Council, it presents a means to provide tenants with computer, phone and TV services. IPTV delivers standard TV channels, internet services, and a community TV channel. IPTV would enable tenants to view "home country" channels, which cannot otherwise be obtained via IRS or other systems. This could also lead to the phasing out of unauthorised tenant satellite dishes.

IPTV Provider Digital Bridge conducted a trial of around 900 users in Shoreditch and provided the following Homechoice services over the IPTV platform:

- Shoreditch TV – four community channels including Crime (including CCTV integration), Education, Money and Local.
- Homechoice Digital TV (now Tiscali TV)
- PC on TV – This gave users web browsing, emailing and Microsoft Office services e.g. Word, Excel etc.
- Premium TV subscription
- PC broadband
- Telephone Call packages

The trial aimed to improve the delivery of public services (through reduced cost and enhanced usage), to increase community engagement, and remove barriers between the emergency services (particularly the police) and the community. The Digital Bridge Channels offered a wide range of services in demand by target communities, including: Crime, Education, Health, Housing etc. This trial exceeded expectations and received praise from residents, demonstrating that public services can be delivered efficiently and effectively through IPTV.

An estimated price guide for IPTV installation in Southwark is as follows:

Set up costs - approximately £235 / property

Since IPTV is often subscription based, a revenue sharing arrangement could be established so that set up costs are paid off over several years. Moreover, a long-term contract could even mean no net costs at all.