Canvas:
Proposition and public value case

Non service approval

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1 Executive Summary

Digital television platforms in the UK have evolved rapidly, driven by the range of high quality content, competition between cable, satellite and Freeview platforms and the public policy imperative of analogue switch off in 2012. The UK now has one of the highest rates of digital takeup in the world, at 88%[1], with consumers now expecting high definition equipment and a range of on demand functionality as standard – 88% of all televisions[2] sold in the UK in 2008 were projected to be HD capable and an increasing number choosing a digital platform will select one with on demand capability.

The BBC has played a key role in this transformation, launching Freeview and now Freesat, making available a wide range of free to air digital services, leading the transition to HD, supporting and promoting open technical standards and this year, with BBC iPlayer, demonstrating the audience appetite for free to air on demand services, with BBC iPlayer now used on the computer by 1.4m users every week[3].

The next stage of the television platform evolution is being driven by on demand. Global television markets are already making the transition. In France 3m homes have internet connected TV[4], the leading markets in south east asia have seen rapid adoption and in eastern Europe take-up has been significant. In the UK, on demand services are growing rapidly, led by the pay television platforms. Virgin Media's 3.4m digital customers[5] already have access to a full range of on demand services and 24% of all Sky boxes[6] sold in 2008 have hard disk recording functionality and an internet connection. The last two years have seen the arrival of a number of 'connected' television services, including BT's 'Vision' service and offers planned from O2 (Telefonica) and Vodafone, in addition to Tiscali's 'Homechoice' service.

In this context, the 53% of UK households[7] that do not subscribe to pay television services risk falling behind. With no 'connected' strategy for the free to air platforms, services like BBC iPlayer will not be made available. Freeview is already failing to offer the full range of BBC licence fee funded television and radio services. Households interested in the BBC's on demand services but unable or unwilling to pay a monthly television subscription will be at a particular disadvantage.

'Canvas' is intended to address this gap by creating a standards based open environment for internet connected television platforms in the UK. The ambition is to use these standards to drive the development of new free to air DTT and DSat boxes, to coincide with the transition of the existing DTT standard to High Definition in late 2009. This standard would be available to all set top box manufacturers and could be adopted by any UK television service provider.

As well as developing the standard, the BBC plans to work with the other UK PSBs and internet service providers (ISPs) to promote it and this paper sets out the BBC's proposal for so doing. In this way the proposal is a continuation of the BBC's existing aims regarding its free to air platform ventures – available to all UK consumers, with no contract, simple to install and use and open to all content providers.

As a result of these proposals all UK consumers would continue to enjoy the existing benefits of free to air standard and high definition services and in addition would have access to the BBC's existing on demand (e.g. iPlayer) services via the television set in the living room. Internet

[1] Households, based on Ofcom Digital Television Update, Q2 2008
[2] GfK July 2008
[3] BBC Internal server data, June 2008
[4] End 2007, Screen Digest, free IPTV subscribers
[5] Virgin Media August 2008
[6] BSkyB Quarterly Results Q1 2008
[7] BARB Establishment Survey Q1 2008

connected TV platforms also allow the BBC to reversion its services on bbc.co.uk for the television screen (as we do for mobile phones) and enable services from other broadcasters and content providers.

The BBC's ambition is to work with partners to achieve this outcome. With the other PSBs, manufacturers and retailers, to create and promote the standard, with ISPs to understand how the capability of their networks can best be realised to support the proposition and with other content providers to understand how their content might be made available. The Canvas proposals are therefore central to the BBC's 'Power of Partnership' proposals as part of PSB Review phase two and represent a significant contribution to delivery of the BBC's purposes, in particular the 6th Purpose, Building Digital Britain'.

2 Strategic Rationale

2.1 Changing consumer needs

Audience expectations of their viewing experience have changed considerably over the last decade. The introduction of new technology, such as high definition (HD) television and personal video recorders (PVRs) combined with the increasing power of the internet, has resulted in consumers expecting higher quality, more control and choice than ever before. The combination of HD, PVR and on demand content is extremely powerful, as long as the experience remains simple to use and reliable.

High definition ready TV sets are becoming the norm
Since mid 2005, the sales of high definition (HD) ready TV sets have shown steady growth. HD-ready sets are becoming the norm for many households replacing their TV sets, with retailers and manufacturers investing heavily in marketing HD-ready sets. Over 11.5m sets have been sold as of June 2008[8], compared with 4.9m sets as of June 2007. This trend is set to continue with prices of HD sets dropping, with the average price at £523 in June 2008, compared with £652 in June 2007.

Uptake of PVRs is growing
In August 2008, there were 14.3m people with a PVR in their home in the UK[9], an increase of 7m from last year. Sky Plus users are still the biggest group of PVR owners, but this trend extends to the free to air platform market, with Freeview gaining the largest percentage of new owners, up 149% year-on-year.

Catch up TV on the PC has proved very popular . . .
The success of catch up TV has been shown through the success of the public service broadcasters (PSBs) on demand websites in particular BBC iPlayer. Since launch in December 2007, iPlayer has grown strongly with an average of 4m streams/download requests for TV every week.[10] Watching TV online has proven to be popular in the UK, with 1.9m people watching TV online in the UK in 2006 (7% of total internet users). This increased by 52% to 2.9m in 2007 (10% of total internet users)[11].

It is not just public service broadcasters that are seeing this change in viewing patterns. Google's websites, including YouTube have seen their market share increase from 33.9% May 2007 to 44.9% in the same month this year. Its online video audience grew year on year from 16.9m monthly UK-only unique users to 20.53m in May 2008.[12]

. . . And is not limited to the PC
The effect of the provision of on demand content is not limited to the PC screen. A recent report by Essential suggests that the overwhelming consumer demand – across all levels of technical confidence – was to watch long form on demand content through the TV screen[13]. The restriction of most video on demand services to a PC screen was a very significant barrier to wider use, with a typical response from consumers being *'Usually I'd rather miss it than watch it on the computer – it's not the same as watching it on the sofa'*. Over 80% of respondents with access to VoD on their television indicated they prefer watching VoD content on their television than their PC.

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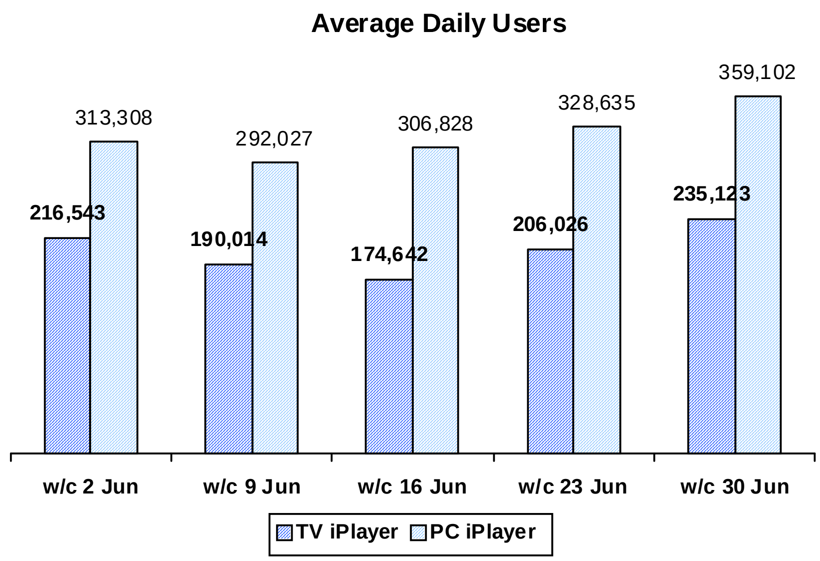
[8] Cumulative sales, GfK Lek Trak
[9] BARB / TRP August 2008
[10] Internal BBC reporting, based on January – end of June 2008
[11] Cap Gemini TME Strategy Lab Analysis. Continental Research "Internet & Convergence Report", Autumn 2007; Screen Digest, "Online TV: prospects for the UK market", October 2007
[12] YouTube keeps UK online video lead – but Facebook in on the rise, The Guardian, 17th July 2008
[13] Essential Research, VOD State of Play, September 2008, sample size of 17 households (40 people)

Indeed, although it may be hard to do, consumers are already beginning to take matters into their own hands in the US, with 18% of online video viewers connecting their PC to the TV – with over a third of these watching online video on the TV screen in a typical month.[14]

Providing BBC iPlayer onto the TV screen in the living room has already proved successful. The TV iPlayer application was launched in full on Virgin on 30th May 2008. In the week commencing 30th June, an average of 235,000 Virgin Media 'unique users'[15] accessed TV iPlayer content each day, compared to 359,000 'unique users' accessing the PC iPlayer. This is an impressive performance for the TV iPlayer given that only c3.4m homes can access it, compared to c15m homes which can access the PC iPlayer.[16] This comparison between TV and PC based iPlayer consumption is set out in Figure 1 below.

Figure 1 - Comparison of PC and TV based iPlayer consumption in June 2008

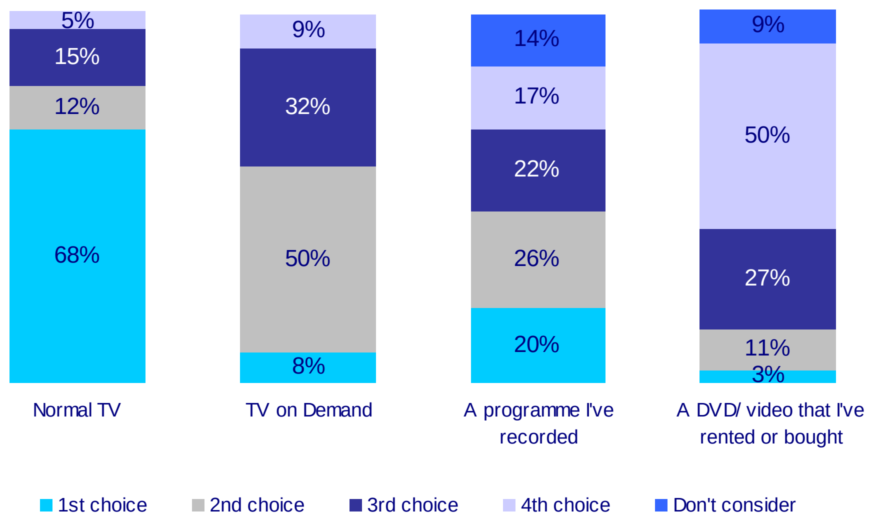


BSkyB announced in November last year that its Sky Anytime TV on demand service accounted for more viewing than all but five conventional broadcast channels[17]. Sky Anytime TV is available to all households that have recent Sky+ boxes, or the HDTV version. Recent studies show that over 60% of PC iPlayer users always watch alone, compared with 14% of TV iPlayer users[18]. Bringing the benefits of iPlayer and other catch up services to the main screen will enable families to watch catch up TV together whenever it is convenient for them.

Although the availability of VoD on television is a relatively recent phenomenon, research undertaken for the BBC and Channel 4 indicates that although linear television remains the first choice viewing experience for viewers who have access to VoD on their television, half of VoD users consider TV on Demand as a 2nd option to watch.[19] This is set out in Figure 2 overleaf.

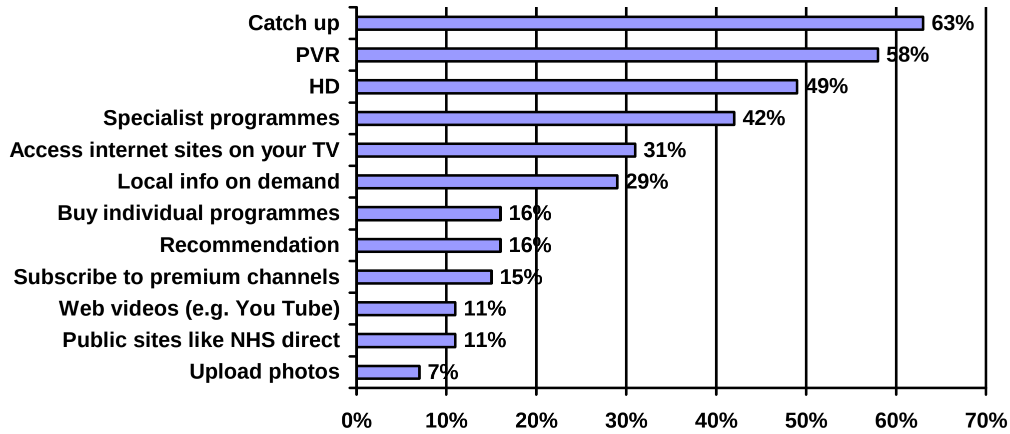
[14] What it really means to watch TV online, Forrester Research, May 2008
[15] 'Unique users' means 'set top boxes' for TV iPlayer; 'cookie count = computer browser count' for PC iPlayer
[16] BBC Research: TV iPlayer Usage 14 July 2008
[17] New Media Markets, November 9th 2007
[18] BBC online quantitative survey, Q1 2008
[19] Continental Research 2008, Base : All ever used VoD: 1014

Figure 2 - Viewers' preferences when viewing audiovisual content on the television



Growing expectation for a combination of catch up, PVR functionality and HD
The BBC has carried out research looking at the different needs of current Freeview homes with broadband access. Figure 3 below shows that the most important additional functionality would be catch up TV and PVR functionality, followed by high definition (HD).

Figure 3 – Hierarchy of needs (Freeview homes with broadband)[20]



In order to continue delivering value to licence fee payers, the BBC needs to be able both to adapt to these changing audience expectations and to help shape them. Audiences want the control that they experience with the internet, combined with the simplicity of their current TV viewing.

While VoD is arriving, this is only the start. There is potential for a greater range of interactive services as well as the depth and breadth of relevant websites such as BBC.co.uk.

2.2 Market context

The global market for Internet Protocol TV (IPTV) is developing rapidly
IPTV enables television content to be received by the viewer through the technologies used for computer networks, instead of the traditional broadcast route. This may be standalone, with all content being received though the internet connection, or combined with traditional broadcast TV.

[20] BBC Online quantitative questionnaire. Base 576. IMM Pulse August 2008

IPTV has been successful in a number of other countries. Orange (France Telecom) currently reach just over one million customers in France[21] and Telefonica's Imagenio IPTV service in Spain is now available to 5 million people in 565 cities and towns in Spain and offers a basic tier with 30 channels, and an extended tier with 60 channels, plus Football and pay-per-view packages[22].

Similar deployments in South East Asia are showing signs of success. PCCW, a telecommunications provider in Hong Kong launched its IPTV platform, Now TV, in 2003[23]. It now has almost 900,000 subscribers and enables viewers to choose from over 160 channels including movies, sports, news and general entertainment programmes.

The IPTV market in the UK is currently small, but more pay entrants are expected
In the UK, growth of IPTV has been led by telecommunication operators and take up has been relatively slow. IPTV services from BT Vision (a hybrid DTT and broadband proposition) and Tiscali (standalone broadband) accounted for less than 200,000 subscribers at the end of 2007[24].

Orange (France Telecom) announced in early 2007 its ambitions to launch an IPTV offer in the UK. The service was expected to launch in summer 2007, but was delayed and is still being trialed. 02 has also announced its plans to launch a UK IPTV service to complement its mobile offerings.

However, the level of interest in IPTV has increased significantly across the industry value chain in the UK. Most of the major ISPs already offer or are planning to offer a pay IPTV service to their broadband subscribers[25]. Virgin now offers ‘IPTV’ services such as catch up to its 3.4m digital homes and while Sky do not yet have an IPTV service, 24%[26] of their boxes sold in 2007 have an internet connection and they are expected to announce a service in 2009. Consumer electronics device manufacturers like Philips, Panasonic and Netgem are enabling IPTV on their devices and global technology companies like Google, Apple and Microsoft are investing heavily to expand from the PC to the TV screen.

In addition, Sky have proposed their ‘Picnic’ service offering pay on DTT, which although currently stalled as a result of regulatory process[27], is the most significant medium term threat to the DTT platform.

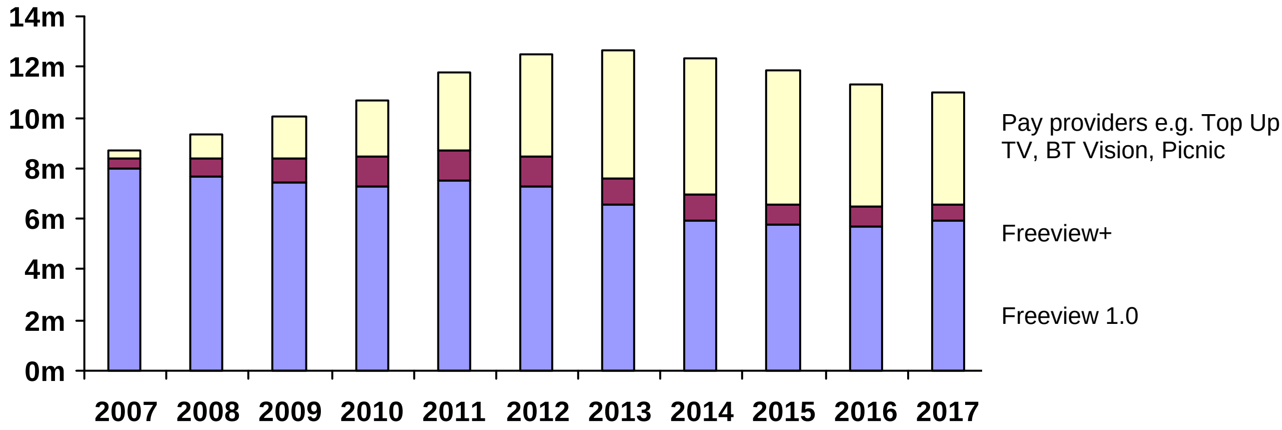
The threat to the UK’s free to air platforms
The UK’s free to air platforms have enabled delivery of a number of public policy outcomes including driving digital take up by providing subscription free upgrade paths and ensuring universal access to the BBC’s public service content and helping to drive technical innovation on behalf of the broadcasting industry to ensure a set of common standards.

However, open and horizontal platforms (i.e. Freeview for DTT and Freesat for DSat) risk decline if they do not evolve within the existing free model, as shown by independent work commissioned to understand the likely evolution of DTT. Currently, 95% of the market is made up of ‘open’ and subscription free products (either standard Freeview boxes without PVR functionality called ‘Freeview 1.0’ or manufacturer led Freeview+ boxes). Modelling suggests that without evolution of the free offer, not only will this proportion reduce significantly to ~60% in 2013 with the launch

[21] Screen Digest, January 2008
[22] www.broadbandtvnews.com
[23] www.pccw.com/eng
[24] Screen Digest IPTV Subscribers by Operator
[25] With the exception of Carphone Warehouse
[26] BSkyB Quarterly Results Q1 2008
[27] Financial Times, September 12th,2008

of a strong pay alternative such as Picnic[28], but the overall DTT market will shrink with pay providers moving their customers through from DTT and onto their native platforms.

<u>Figure 4</u> – Effect of a strong pay alternative on DTT[29]



This significantly reduces the choice available to consumers who wish to benefit from the advantages of services offered via IP and will change the nature of the DTT platform, introducing commercial gateways and reducing the level of control the free to air broadcasters can exert in terms of positioning and branding. This could reduce the BBC's ability to deliver its public policy outcomes and creates potential barriers to the way in which the BBC's current services can evolve. Although the focus of this section has been on the DTT market given its current scale, similar risks arise in the DSat market.

The required evolution of our free to air platform ventures
In this context, the UK's free to air platforms need to evolve if they are to continue to provide the full range of BBC services to the audience. Freeview and Freesat have kept pace with the development of PVRs and now HD. In order to continue to meet the needs of the 53% of homes[30] that rely on free platforms for TV, they need to embrace the challenge of video on demand.

This strategy is seen as complimentary, rather than as a substitute to syndication on pay platforms. The BBC already licenses iPlayer to Virgin Media for example. However, while syndication is necessary, it is not sufficient if the BBC wishes to continue to promote the full range of its services to all licence fee payers. This is because syndication:

- Is currently only possible to pay television platforms[31] with the necessary technical specification (less than 20% of UK homes today[32])
- Relies on negotiated access and is dependent on third party terms (e.g. a pay tier, in the case of BT Vision)
- Does not enable editorial flexibility or rich interactivity (e.g. as the BBC enjoys on the web)

As a result, while syndication will continue to be critical to reaching some homes and is evaluated here as a potential counterfactual, it does not provide a solution for all licence fee payers (notably those with access via the UK's largest digital TV platform, free to air DTT).

[28] Picnic is a proposed pay television service to launch from Sky. It would sit alongside Freeview and Top Up TV on the digital terrestrial television (DTT) platform in the UK. The service is currently the subject of a public consultation by communications regulator Ofcom.
[29] Modelling from 3Reasons in September 2008
[30] BARB Establishment Survey Q1 2008
[31] Freesat is the only free to air platform venture that may be able to licence iPlayer currently, with approximately 200k boxes sold
[32] Based on Virgin digital homes (3.8m), BT Vision (200k), Tiscali (50k), Freesat (200k) and Sky HD boxes (500k) compared with 25m households

3 The proposition

The BBC plans to create a standards based open environment for internet connected television platforms in the UK. The ambition is to use this standard (referred to here as 'Canvas') to drive the development of new free to air DTT and DSat boxes, to coincide with the transition of the existing DTT standard to High Definition in late 2009.

Primarily, Canvas will enable the creation of a hybrid broadband and broadcast platform environment allowing the BBC to migrate relevant current on demand and web based content onto the main television screen in the living room (e.g. iPlayer, news online etc), as well as ensuring that any future services can be accessed via the TV, as appropriate. While the BBC recognises that certain proposed services may benefit from access to the main screen, the proposals should be considered separately as the launch of the content service is not dependent on the launch of Canvas (and vice versa).

Canvas would serve to protect the open, horizontal nature of the UK's free to air platforms, and in so doing enable all audiences to continue to benefit from the full range of current and future BBC services. The BBC would work within the basic principles of these current free to air platforms and ensure that the BBC maintains a direct relationship with its audiences, regardless of their ability or willingness to pay for television services.

This standard would be available to all set top box manufacturers (as it is for Freeview and is intended for Freesat) and could be adopted by any UK television service provider. The proposal would be achieved by the creation of a new technical specification (building on that currently specified for Freeview/Freesat boxes) which manufacturers would have to incorporate in order to gain the relevant Trademark Licence (TML). This technical specification would be defined in close collaboration with the HD DTT working group to ensure a close alignment both in technology and timing.

Target audience
The likely core audience for Canvas is households currently with Freeview or Freesat and with internet access (5.5m homes)[33]. For these audiences there would be no additional cost for this service beyond the initial cost of the box.

The proposal would also create incentives for households without broadband to go online, aligning well with Broadband Britain and the recent Digital UK agenda set out by Prime Minister Gordon Brown and Lord Stephen Carter. Any set top box would work without a broadband connection, offering linear channels, PVR functionality and some basic on-demand services. This creates a secondary target group of people with Freeview or Freesat and without an internet connection (4.9m homes) who may be encouraged to get connected in order to receive the full service. This would require an additional ongoing payment in the form of a broadband subscription.

Potential channel line-up
The Canvas standard will result in a box that continues to offer the full range of BBC services as Freeview and Freesat do today, namely:

- All TV Channels (BBC One; BBC Two; BBC Three; BBC Four, CBBC, CBeebies, BBC News, BBC Parliament)
- All Radio Channels (BBC Radio 1; 1Xtra; BBC Radio 2; BBC Radio 3; BBC Radio 4; BBC 5 Live; BBC 6 Music; BBC Radio 7; BBC Asian Network; BBC 5 Live Sports Extra; BBC World Service)
- Existing red button (interactive) services

[33] Based on estimated free DTT homes in 2010 from Enders Analysis, December 2007 and current internet penetration from BARB Establishment Survey Q1 2007

Although it will not be possible to determine the exact channel line up until a much later date, it is reasonable to assume that all channels that are currently free to air on Freeview or Freesat will be available on the relevant platform.

In addition, we anticipate that the following interactive services will be made available:
- BBC iPlayer
- Relevant parts of BBC.co.uk
- ITV.com
- 4OD
- Demand five
- A small number of commercial linear channels that may not have capacity on DTT/DSat
- An increasing number of commercial on demand services
- Relevant parts of:
    - Other PSB websites
    - Public service websites e.g. NHS Direct
    - Commercial websites

Pricing
As per our current free to air platform ventures, the BBC will not seek to influence the box retail price and instead will seek to create an open market. However, initial conversations with the box manufacturers suggest a launch retail price under £200. All retail prices are highly indicative at this stage. In addition, there may be box subsidies by third parties which will reduce the cost to the consumer (as currently happens for BT Vision and Top Up TV).

Initial thoughts on branding and marketing
The current ambition is to offer boxes that meet the Canvas specification under a new brand, with the option to licence the existing Freeview brand (as BT Vision and others currently do) – see Section 6 for further details. The BBC and others may also use existing linear or non linear services (e.g. iPlayer) to endorse the proposition.

3.1 The benefits for the audience

The proposal would enable:
- Provision of the existing benefits of free to air services in the form of linear channels
- Provision of all our existing on demand services (e.g. iPlayer, interactive) and planned services (e.g. archive) to the main television set in the living room
- Audience experiences across genres that reflect the advantages of both broadcast and broadband technologies and enable functionality such as personalisation, social media and localisation
- On demand and interactive services from third parties (community media, arts organisations, existing web services like Flickr)
- A simple consistent and dynamic user experience that is capable of being updated and personalised and which conforms with best practice in terms of accessibility

Access to the full range of on demand and interactive services would require licence fee payers to take a broadband subscription, however boxes meeting the Canvas specification would work *without* a broadband connection and still offer some on demand functionality. The BBC would use Canvas as an opportunity to promote the benefits of broadband to UK consumers and to encourage ISPs to maximise the availability and capability of their ISP networks.

3.2 Editorial opportunity

Canvas would enable editorial propositions that go beyond offering the benefits of the internet and broadcast TV. IP connectivity enables truly personalised, local services and the integration of rich video into existing text services would allow the BBC to revolutionise services like News (localised headlines, weather and travel), Childrens (richer interactivity) and a whole range of content. As an open platform, IP also enables non traditional content providers to make their services available to the living room screen – whether web based services like Flickr making home photo collections available or organisations like the Camden Roundhouse or Royal Opera House streaming concerts live.

The BBC has an editorial opportunity to shape this market on behalf of audiences in a way that is consistent with its purposes, i.e. in a way that is relevant to all audiences, simple to use and on a free to air basis.

3.3 Partnerships

The suggested investment in Canvas is intended to achieve a number of objectives to serve not only the BBC and its audience, but provide opportunities for other UK and non-UK broadcasters, the supply chain and also for some ISPs.

In much the same way as the BBC has partnered with other broadcasters to maintain Freeview's relevance through introducing Freeview+, the BBC would partner with broadcasters, manufacturers and technology providers to introduce the Canvas proposition. Given the complexity of the project, the BBC would also need to partner with software providers and ISPs in order to ensure a successful platform venture.

We intend to enhance the positive economic impact of the BBC by ensuring strong working relationships with a wide range of partners and suppliers. In this way we can understand what the market requirements are (by working with industry manufacturers and suppliers we help to clarify the emerging IPTV market through setting open standards to bring real value to others across the industry value chain) and create more public value by working together.

Canvas provides opportunities for PSB broadcasters and UK broadcasters to create innovative content and benefit from improved recommendations and advertising targeting. Commercial content providers will want to participate in this due to a number of different benefits:
- Ability to protect reach and share of PSB channels and services by protecting the scale of Freeview compared with pay platforms
- Enhanced interactive applications with minimal capacity constraints
- Opportunity to develop content that benefits from integration of broadcast and broadband
- Opportunity to monetise using targeted advertising
- Opportunity to cross promote using recommendation tools

Other content providers will also benefit, due to:
- Significantly lower barriers to entry for content providers, allowing anyone with a website access to a Freeview audience (subject to clear editorial standards[34])
- Opportunities to monetise using targeted advertising
- Enhanced interactive applications with minimal capacity constraints

The supply chain also benefits from:
- Development of one technical standard to reduce investment costs
- Potential to generate revenue in a commoditised market

Given the complexity of the project, the BBC would also need to partner with ISPs in order to ensure a successful platform venture. There is definite potential for ISPs to use Canvas as an

[34] The BBC is currently working on detailed proposals to determine the appropriate level of editorial management. One of the advantages of having a controlling stake in Canvas will be the ability to determine minimum editorial standards. However, we will need to reach a reasonable compromise between the time/cost of policing all websites and ensuring a safe environment for our audience.

opportunity to grow the UK broadband market, as desired by the Government's Broadband Britain agenda. The ISP networks in the UK are capable of providing this type of video service without further investment but are not supported by their current business models. In the short term this may present a significant challenge, but could be seen as an opportunity to generate further revenues and the BBC is already working with all the major UK ISPs to understand how these opportunities can be realised (see Section 7 for further detail).

3.4 The BBC can help provide an open, contract-free and simple proposition

The Canvas proposal would be built on the same principles as our current free to air platform ventures – simple to understand, an open model for content providers and a single cost for the box. These characteristics are critical to the distinctiveness of the proposition in the market and underpin the BBC's continuing ambition to protect universal reach of the full range of its services.

Openness of any free platform at every level is critical to delivering the BBC's objectives. This means:

- Open to users of all access providers (ISPs)
- Open to all devices which can integrate the software specifications and user experience
- Choice to the consumer through open access to all content providers who adhere to technical, editorial and user experience standards
- Allowing 3rd party developers the opportunity to enhance the usability of the platform

Simplicity will continue to be at the core of any proposition. This is intended to be a simple proposition to communicate to consumers, and for them to buy, install, use and upgrade. It is intended to make sense of the increasingly complex digital television market.

Consumers will be offered a **'no contract'** proposition. They will be able to purchase a receiver (e.g. set top box or IDTV) from a high street retailer or an online retailer. This will widen consumer choice/value for money in terms of equipment and price. Once the receiver has been purchased, the only ongoing cost for full functionality will be their broadband subscription (the linear channels, PVR functionality and some basic on demand services delivered via broadcast will be available without a broadband connection).

It is in the interest of the BBC to ensure that we maintain a direct relationship with the audience. The successful launch of BBC iPlayer demonstrates the value to the BBC of maintaining a direct relationship with the audience. This direct relationship has a number of benefits including ensuring the prominence of public service content free of charge to the consumer especially in the on demand space for the BBC and the potential to influence the user experience and design, including branding of BBC services and content.

4 Fit with Public Purposes

Fundamentally, this proposition underpins the BBC's continuing ambition to protect universal reach of the full range of its services. This section illustrates how the proposal would further deliver against the Purpose Remits and commitments in management's Purpose Plans.

4.1 Helping to deliver to the public the benefit of emerging communications technologies and services

In order to maintain the principle of universality the BBC must provide a range of distribution outlets for its content[35]. As such, Canvas will provide audiences with access to services that are not currently available on the TV screen. They will be able to choose from a wide range of high quality, on demand content to the TV in the living room, including current on demand services e.g. iPlayer, future on demand services and access to a diverse range of archive content, as well as access to other web based content.

As part of Canvas, the BBC will continue to work with other organisations to end the 'digital divide' between those who enjoy the benefits of digital technologies and those outside that group, by ensuring that our services are available not only to those willing to pay for their TV content, but to those who either are not willing or cannot afford to[36]. Not only will Canvas be available to audiences that have not yet taken up digital services to a significant extent, but Canvas will provide an environment that enriches the digital content and services for those who have already made the transition. The convergence of broadcast and broadband provides the opportunity for exciting new forms and sources of content and new experiences of existing content from the BBC and other organisations.

The BBC believes that future proofing our free to air ventures will serve to ensure simple choice for consumers with 'digital basic' to 'digital rich' covered under one brand, for a one off price.

Canvas would be DSHS compliant, supporting the Government's target help scheme to help the most vulnerable during digital switchover[37]. Canvas provides the BBC with the opportunity to ensure delivery of accessible navigation to over a million disabled licence fee payers, with Canvas being the only platform left where the BBC can lead the way in making the necessary changes to ensure that disabled licence fee payers in the UK can access digital television by 2012.

Finally, Canvas would help drive technical innovation on behalf of the broadcasting industry, ensuring a set of common standards and reducing the investment costs for partners.[38]

4.2 Sustaining citizenship and civil society

Canvas would allow the BBC and just as importantly other providers, to make news, analysis and information available to audiences when and how they want it. In doing so, the BBC would work to increase media literacy and continue to find innovative ways to overcome people's reluctance to try new technology.[39] Other providers may include NHS Direct, with an interactive service offering information to the audience, or local government providing regular updates on local policy and services.

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[35] Make engaging digital content and services available on a wide range of digital platforms and devices (Purpose Remit)
[36] Work in partnership with other organisations to help all audiences understand and adopt emerging communications technologies and services (Purpose Remit)
[37] Support the Government's targeted help scheme to help the most vulnerable during digital switchover (Purpose Plan)
[38] Creating new technologies and services; Encouraging adoption of new technologies and services (Purpose Plan)
[39] Enable audiences to access, understand and interact with different types of media (Purpose Remit)

Audience expectation of news providers are changing, with audiences wanting to question or comment, or even contribute. Audiences want the BBC to provide the means for citizens to interact and to participate in debate across a variety of platforms and at local, regional, nations' and UK-wide levels.[40] Canvas would enable the BBC and other content providers the ability to develop a two-way relationship with audiences via the broadband connection. This would serve to future proof the delivery of key genres to BBC audiences, such as network news and local news, ensuring the BBC maintains its position as the most trusted and most used local and UK-wide news provider. Canvas would allow the BBC to provide content in a form and by delivery mechanisms which make it as accessible as possible for audiences[41].

4.3 Stimulating creativity and cultural excellence

Canvas would enable an editorial proposition that goes beyond combining the benefits of the internet and broadcast TV. IP connectivity enables personalised, local services and the integration of rich video into existing text services would allow the BBC to revolutionise services like News, Sport, Learning, Childrens and a whole range of content[42].

As an open platform, IP also enables non traditional content providers to make their services available to the living room screen – whether web based services like Flickr making home photo collections available or organisations like the Camden Roundhouse or the Royal Opera House streaming concerts live. Niche content providers, public service providers and local communities would be able to cost effectively reach audiences via the television, which would in turn encourage innovation and creativity of content and services. Canvas would enable the BBC to provide coverage of a wide range of cultural and sporting events, covering both popular subjects as well as niche or minority interests[43].

Delivery of content by broadband would enable audiences to gain access to channels and content in the global marketplace that they would not be able to through current broadcast delivery.

The BBC has an opportunity to help the whole market develop in a way that delivers public value, i.e. in a way that is relevant to all audiences, simple to use and on a free to air basis. As well as supporting the three specific purposes outlined above, the market could in time deliver benefits consistent with the BBC's other purposes, by allowing the delivery of other 3rd party services around, for example, education.

5 Fit with wider BBC strategy

This proposal enables the BBC to protect the existing principles delivered by our FTA platforms and partnerships and further support the BBC's strategic aims.

The UK has already seen the benefits of the BBC's role in its free to air digital platforms. Freeview has been the main driving force behind digital television take up in the UK and through the maintenance of open platforms, the BBC can help guarantee the prominence of public service content free of charge to the consumer. The proposals for Canvas also build on the BBC's existing commitment to the next stage of DTT with the planned launch of HD in December 2009, and also to Freesat as it moves to utilise its IP connected boxes.

Freeview and Freesat also demonstrate how the BBC can play a strong and supportive role as a partner, enabling the market to develop in a competitive manner and supporting the wider PSB ecology, with wider positive market effects. Canvas' potential contribution is already an important

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[40] Encourage conversation and debate about news, current affairs and topical issues (Purpose Remit)
[41] Engage a wide audience in news, current affairs and other topical issues (Purpose Plan)
[42] Provide output that is distinctive and creative on all platforms (Purpose Remit)
[43] Ensure enrichment for all audiences by covering a wide range of cultural activities (Purpose Plan)

part of the BBC's intended proposals for the PSB Review Phase 2 and the 'Power of Partnerships' agenda.

Canvas would also help support the BBC's specific commitments to building digital Britain. It would enable services with high public value and may also help as a stimulus for broadband adoption, coupled to the success of new editorial propositions and aligning well with the recent Digital UK agenda set out by Prime Minister Gordon Brown and Lord Stephen Carter. Finally, Canvas would be a platform for future commercial revenues (subject to normal BBC approvals).

6 Venture strategy

One of the key objectives of the Canvas proposal is to provide a functionality upgrade path for licence fee payers interested in contract free television services. The most popular such service, Freeview (operated by DTVSL, in which the BBC is a founding shareholder), has been highly successful with over 13 million boxes sold and Freeview now accounts for 36.7%[44] of all digital homes in the UK. Canvas will also offer an upgrade path for Freesat, which following a successful launch, is now in over 200,000 households. Continuing to meet the changing needs of UK consumers has been critical to these platforms' continuing success. In May 2006 Freeview created a new standard for the promotion of PVRs ('Freeview+) and 2009 sees the arrival of HD on DTT.
[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[44] Ofcom Digital Television Update Q2 2008

[redacted]

[redacted]

[redacted]

[Redacted. This passage recounted that the Executive has determined that it is not possible to implement through Freeview for commercially sensitive reasons and that it is not practical to implement through Freesat. It accordingly proposes to pursue a new venture to enable it to develop the ‘Canvas’ proposal and if required, to launch it under a new brand. In this option, the BBC and other parties including Public Service Broadcasters would set up a new venture, within which they would develop the Canvas proposal. The ambition would be for this venture to, subject to existing approvals and any further regulatory constraints, include the existing Freesat operation. Privileged legal advice confirms that there are no contractual restrictions set out within the DTVSL joint venture agreement that would prohibit the BBC or other PSB DTVSL shareholders from participating in such a joint venture. The implications for licence fee payers would be limited. Any new venture would make all existing Freeview and Freesat channels and services available and may seek to sub license the Freeview and Freesat brands. The venture would operate in a way that is entirely consistent with Freeview – i.e. a horizontal market. As with Freeview, the venture would also encourage third party service providers to evolve the new standard.]

At the point at which the position with Freeview is resolved, the new venture could seek to include the current DTVSL operation, subject to existing approvals and any competition constraints.

[redacted]

7 Partnerships

In much the same way as the BBC has partnered with other broadcasters to maintain Freeview's relevance through introducing Freeview+, the BBC would partner with broadcasters, manufacturers and technology providers to introduce the Canvas proposition. Given the complexity of the project, the BBC would also need to partner with software providers and ISPs in order to ensure a successful platform venture.

The Canvas proposition requires a number of partnerships to bring it to launch and ensure its ongoing success. These partnerships include:

a) **Venture Partners**: The proposition would initially aim to launch as an extension to existing free-to-air ventures although we are exploring options (see section 6 above)
b) **Technology & Device Partners**: Providing expertise and resources to shape and scope the Canvas specification, followed by development and retail.
c) **Distribution Partners**: Delivering a hybrid broadcast-IP solution would require an approach to the issues of distributing a large volume of content over an IP network. See annex 8 for details of the proposed framework for ISP relationships
d) **Strategic Partners:** Canvas would present significant opportunities for 3rd parties to develop their own propositions.

All of the above partnerships must comply with the BBC's Fair Trading guidelines and the principles that underpin our existing free to air platform ventures of open, simple and contract free.

7.1 Route to Market & Venture Partners

Freeview and Freesat have demonstrated how the BBC can play a strong and supportive role, enabling the market to develop in a competitive manner and supporting the wider PSB ecology, with wider positive market effects.

The BBC's free to air platforms must evolve quickly if they are to continue as viable free alternatives and deliver the BBC's public purpose of bringing the benefits of emerging technologies to the audience described earlier. This would include the capability to offer on-demand, catch-up and interactive services over an IP connection. Freesat already has more capacity and strong relationships with the supply chain, as well as having an IP connection specified in its hardware. However, it does not currently have an IP offering and there is a significant opportunity here to upgrade both of the existing free-to-air platforms is a consistent way that would be both easily recognisable and compelling to consumers.

7.2 Device and Technology partners

The proposal would be achieved by the creation of a new technical specification (building on that currently specified for Freeview/Freesat boxes) which manufacturers would have to incorporate in order to gain the relevant Trademark Licence (TML). However, once these quality standards are met, any manufacturer would be able to create a Canvas set top box.

While the ambition is to be as open as possible, pragmatic decisions will need to be made in order to deliver the product for launch. Explicitly, the BBC may need to work with a smaller number of manufacturers in the run up to launch, building on the principles and precedents set by Freesat.

It is our aim to enhance the positive economic impact of the BBC by ensuring strong working relationships with a wide range of partners and suppliers. In this way we can understand what the market requirements are (by working with industry manufacturers and suppliers we help to clarify the emerging IPTV market through setting open standards to bring real value to others across the industry value chain) and create more public value by working together.

The Canvas team has already met with a number of companies who would be willing to deliver an open, horizontal market approach within a short time to market. Canvas requires both 'Technology' partners to develop the software and also 'Device' partners to manufacture the set-top boxes. Engagement with external parties would be in line with current procurement, legal and fair trading requirements.

7.3 Distribution partners

The principles of open and simple are core to our approach to distribution. It is our aim to ensure that the ability to receive content via the broadband connection is not dependent on individual ISPs and that Canvas is made available on a non exclusive basis. This would prevent additional complexity at the point of sale and prevents consumer confusion or disappointment with the product.

Due to the high level of audio visual content available on BBC online, the BBC is considered one of the key drivers of internet traffic by the external market. While the BBC does not have any control over the approach other content providers will take towards ISPs, it is likely that our approach will be influential in the market. Therefore, it is crucial that the BBC carefully considers the approach taken to launch Canvas.

The BBC's position with Canvas is consistent with its overall position in respect to the UK's network infrastructure, in that we take responsibility for putting our content on the internet (via our own servers, or for large data volumes via Content Delivery Networks) but not the cost of onward carriage to the consumer. These costs are typically recouped from the consumer by the ISP.

Within this wider framework, the BBC's approach to the market has been to:
1. Maximise availability of content by ensuring it is available via all ISPs
2. Secure the lowest possible unit cost for putting content on the internet
3. Encourage plurality of supply – the competitive nature of the CDN market has delivered significant annual unit price reductions over the last five years

The result of this work can be summarised in a set of proposals that we have gathered under three headings (principles), which are intended to express the broad ambitions of Canvas as it affects the business models of ISPs. Detailed proposals under each heading are set out at annex 8.

Principles

1. Canvas is open to all ISPs that can offer a quality experience
2. Canvas will work with ISPs to help identify opportunities arising
3. Canvas will ensure that the interests of ISPs continue to be reflected in any resulting Canvas venture or standards body

Underpinning these principles is a desire to protect the 'open' nature of Canvas by ensuring equitable models for involving and reflecting the commercial realities facing UK ISPs. This should be informed by the desire to create a simple, quality audience proposition.

Table 1

Issue	Possible Mitigation
Unreliable streaming at peak times and in certain locations	▪ Detect network speed and offer progressive download if there is insufficient speed to allow streaming ▪ Consider adaptive bit-rate streaming to adapt to periods of network congestion ▪ After a couple of attempts to stream, offer to download instead and provide notification when programme is available to view
Minimise network traffic volumes and costs	▪ Provide PVR functionality so that users can record what they would otherwise miss ▪ Use Push VOD and/or speculatively record the most popular programmes off air onto the PVR for later on demand consumption. Personalised recording could improve success-rate of recording.
User may go over their broadband usage limit	▪ Let user see how much traffic is delivered over IP. Ask user to input limit and provide alert if limit is exceeded

7.4 Strategic partners

As an open technical standard, it is anticipated that Canvas will provide many opportunities for 3rd parties to develop their own propositions and services. The opportunities span the supply-chain for the Canvas proposition from business-to-business opportunities such as content creation through to business-to-consumer services such as customer relationship management (e.g. billing), in-home installation and promotion at the point of sale.

To ensure that Canvas is a simple proposition to understand, install and use the venture may choose to partner with providers of some of these specific services at launch. Any such partnership would be subject to the Canvas principles of openness and non-subscription and would only be formed where real value to the end user could be proved e.g. in-home installation or customer support.

8 The value proposition for the BBC

8.1 Reach

The BBC has commissioned an independent study[45] to understand the likely take-up of an internet connected free to air platform. In addition, the BBC has carried out its own work to understand the likely usage of such a service and the implications for the reach and share of the BBC's existing services. These assumptions drive the initial assessment of market impact (see Section 9), the distribution costs (see below) and the cost per viewer reached calculation (also below).

Table 2 shows a high and a low case for likely take-up.

In the **low case**, we assume that there are competitor responses from pay DTT. For example, Sky obtains regulatory approval from Ofcom for its Picnic proposal, and decides to go ahead with a DTT offering whereby set-top boxes are subsidised, and the offering is heavily marketed and part of a triple-play offering.

In the **high case,** we assume that when Canvas launches there are no significant responses from competitors on any platform. For example, Sky does not get regulatory approval from Ofcom for its Picnic proposal and/or decides not to go ahead with a DTT offering, or indeed respond in any other way.

Table 2 - Estimated take up based on number of fully compliant primary and secondary sets, removing legacy boxes

	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low case	1.1	2.2	3.3	4.5	5.6	6.2	6.7	7.2
High case	1.1	2.7	4.5	6.3	7.9	9.0	9.9	10.7

In both cases, the figures include take-up by third party platform providers who adopt the standard. These third party platform providers already have boxes out in the market that it will not be possible to update in order to conform to the Canvas technical standard. Hence, we have removed the impact of these boxes by assuming a steady replacement cycle over the first 4 years. After this point, we assume that Canvas becomes the de facto standard for IP-connected set-top boxes and becomes incorporated into pay-DTT services (such as Top Up TV and BT Vision).

The resulting figures are translated below into value for money metrics for the investment into defining and promoting the Canvas specification. In addition, the proposals will generate additional reach for the BBC's audiences facing services:

1. Reach to existing linear services
   This benefit to the BBC arises because the proposals generate a more robust competitive position for the UK TV platforms on which the BBC's linear services have higher reach and share. As a result, the independent model shows an increase in share of the BBC's existing linear channels, as well as additional share and reach for on demand programming (see below).

[45] Modelling from 3Reasons in September 2008

2. Reach to BBC on demand and interactive services
This benefit arises from increased access to the BBC's on demand (iPlayer) services and interactive services (bbc.co.uk and interactive TV services) by making them available on the main television set. Our model shows 15% of viewing will be non linear, of which we would expect the BBC to share a third. While BBC iPlayer and bbc.co.uk are already available in most homes, we expect the convenience of the TV experience to add substantially to audience value (despite high awareness, BBC iPlayer has to date been used by less than 20% of UK households)

8.2 Quality and Impact

Canvas will be a nationally available free-to-air standard, high definition ready, hybrid broadband and broadcast proposition, guaranteed subscription free. This will be a cost effective way of converting the home to digital television, HD and on demand content.

The Canvas receiver specifications, and the trademark licence used to enforce their usage, will ensure that a quality product is made available to consumers. This is a major improvement on current Freeview receiver specification.

By specifying a user experience as part of the Canvas technical specification, the BBC will be able to guarantee a high quality, simple to use environment that is navigable by all audiences and which conforms with best practice in terms of accessibility (i.e. for the hard of hearing, partially sighted) and editorial guidelines – protecting vulnerable audiences with pin protection and content labelling where appropriate. These standards will be available to all platform providers.

As mentioned previously, an alternative to launching Canvas is to provide BBC on demand content to some existing television platforms through syndication. However, while syndication is necessary, it is not sufficient if the BBC wishes to continue to promote the full range of its services to all licence fee payers, notably those with access via the UK´s largest digital TV platform, free to air DTT.

8.3 Value

The proposal creates three types of costs for the BBC:

- Technical specification - people and time required to develop and agree a standard with manufacturers and then the additional ongoing costs of platform management
- Marketing and operations – any additional investment in promoting the new standard
- Distribution – the marginal variable cost of providing additional data over the internet

The first two costs can be shared with other venture partners and partially recovered (for example through content provider listings, as per the current model for Freesat). Distribution costs are borne by the BBC alone. A full description of the costs can be found at Annex 1.

[redacted]

Our cost modelling is based on the BBC's ambition described in Section 6 (pursue a new venture in the interim, including Freesat, to enable it to develop the 'Canvas' proposal and if required, to launch it under a new brand). Based on sharing the venture costs equally between 4 partners, the BBC would incur additional costs of **£6m** over the five years remaining in the licence fee**.** Once the planned investment in Freesat is included the total cost of the new venture to the BBC is **£16.6m** over five years. This equates to an additional ongoing cost of **£1.2m** from 2012/13 onwards, as part of a total ongoing cost including Freesat of **£2.8m**. The figures include the effect of cost recovery (See Annex 2 for further detail). This is before any additional investment from third parties.

Summary of distribution costs

The BBC already pays variable distribution costs to cover the carriage of its content to ISPs' networks (for example, based on forecast consumption, the cost of distribution on BBC iPlayer will be £[redacted] for 2008/09). We assume however that the advent of connected television platforms will increase these costs further and have modelled the additional impact of BBC promotion of the Canvas technical standards.

Predicting the unit cost of distribution is notoriously problematic – it has dropped by [redacted] in the last 18 months alone, and the streaming technology (which also affects unit cost) is developing rapidly. However, the continuing potential for a decrease in unit costs is uncertain, [redacted].

The total costs are a function of two key factors:

- The unit cost of distribution (usually expressed as a cost per Gigabyte)
- The amount of data distributed, which itself is driven by
  - The likely take up and usage of connected free to air platforms
  - The % of content delivered over IP that is HD
  - The % of IP channel share of linear viewing

The BBC has already developed a number of proposed mitigations of the volume of data delivered – for example by enabling popular or data heavy (i.e. HD) content to be recorded off air to the box rather than streamed over IP. We have then modelled take up based on the low and high scenarios set out previously.

While Canvas will drive some new distribution cost, the BBC will in any case face rising costs arising from its current syndication strategy. Table 4 below breaks out the likely costs of distribution were the Canvas specification to be made available[46]. It then shows the costs arising from syndication alone (£[redacted] in 2012/13), the additional costs of distributing content to boxes that meet the Canvas specification (£[redacted] in 2012/13) and the total cost.
Detailed assumptions on distribution costs and the dynamics which make them difficult to predict can be found at Annex 3.

Table 4 – Distribution costs for the BBC (from server to ISP network)

With Canvas (£m)	**2010/11**	**2011/12**	**2012/13**
Syndicating to TV platforms in world with Canvas[47]	[redacted]	[redacted]	[redacted]
Marginal cost of Canvas	[redacted]	[redacted]	[redacted]
Total cost of syndicating and Canvas	[redacted]	[redacted]	[redacted]

The BBC plans to work closely with ISPs to understand how these costs can be reduced, mitigated or made more predictable. By engaging with ISPs early in developing the Canvas

[46] Based on the scenario where there are competitor responses from pay DTT. For example, Sky obtains regulatory approval from Ofcom for its Picnic proposal, and decides to go ahead with a DTT offering whereby set-top boxes are subsidised, and the offering is heavily marketed and part of a triple-play offering.
[47] In order to calculate the cost of syndication, we have forecast the number of boxes with IPTV capability (Sky DSat, Sky DTT (assumes that Sky are successful in their Picnic application), TUTV and BT Vision). We have then reflected the number of these boxes that will actually be connected to the internet and used this to calculate the cost of syndication to TV platforms. Please see Annex 4 for detailed assumptions.

specification the BBC believes it will be in the best position to reach these agreements, as well as continuing to work on new technological developments.

Beyond the five year horizon, the BBC will need to manage the cost implications of a high take up of connected television services. There are three options for the BBC:

- Technical steps to reduce the amount of traffic. This could include limiting the nature of the service (e.g. reducing the volume of HD content, reducing the bit rate of content); planning to implement new technical solutions (e.g. increasing the amount of content stored on the set top box as hard drives increase in size) or relying on other ongoing technical developments (including new distribution networks like fibre or improved contention ratios)
- Developing new models that reduce the variability from distribution costs
- Reprioritising investment into variable distribution

We believe that there is a strong likelihood of progress in the first option and opportunities in the second. However the BBC needs to plan now to cover the final option.

Value for money

We have shown cost per household of the proposal on the basis of the additional cost of Canvas (i.e. £6m over 5 years as described in 8.3.) assuming a low level of cost recovery. Any uplift to the value for money of BBC services carried on the platform is additional and not reflected. Table 5 below shows the cost per household (HH) reached (£0.32 in 2012/13) and the cost per licence fee payer (£0.05 in 2012/13).

Table 5 – Value for Money (including cost recovery and excluding distribution based on additional costs of Canvas)

	Households (HH) reached in 2012/13 (m)[48]	**Additional cost of Canvas 2012/13 (£m)**	**Cost per HH reached p.a.**	**Cost per licence fee payer[49] p.a.**
High case[50]	3.8	1.2	£0.32	£0.05

48 Assumes that 0.67m secondary sets are in households with Canvas primary sets
49 Assumed at 25.3m based on Annual Report, 2007/08
50 Assumes that when Canvas launches there are no significant responses from competitors on any platform

9 Preliminary Market Impact Assessment

9.1 The Canvas proposition

The Canvas proposal is to create an open technical specification for internet connectivity to encourage the growth of internet protocol (IP) connections into set-top boxes. The specification would be platform neutral, aimed at both DTT (digital terrestrial television) and DSat (digital satellite). The standard will allow video-on-demand content (VoD - such as BBC iPlayer) to be delivered to viewers via either push VoD (broadcast delivery of content to a reserved section of the PVR) or via the IP connection; viewers will be unaware of which delivery technology is used. The Canvas standard aims to include a common Electronic Programme Guide (EPG).[51]

Affiliate content, such as archive VoD (e.g. from ITV.com or 4OD), short form content (e.g. from YouTube), reversioned broadband content (such as from NHS Direct, bbc.co.uk or local newspaper video content) is also envisaged.

9.2 Likely affected sectors

Although Canvas is a platform neutral, open technical specification, its availability may affect a wide range of market sectors. The Canvas specification is likely to affect the number of IP connected televisions in the UK. This will affect the audience's ability to consume on-demand content via their television, which may affect existing consumption rates of linear television as well as on-demand content. Increased broadband traffic may affect broadband infrastructure providers and ISPs and demand for new set-top boxes may affect equipment manufacturers. As a result, we consider that the sectors potentially affected by Canvas are wide ranging and include:

- All television platforms:
  - Satellite (both pay and free)
  - Digital terrestrial (DTT)
  - Cable
  - IPTV and IPTV hybrids
- On-demand:
  - Catch-up and archive Video-on-demand
  - Short form content
  - Films
  - PVRs
  - DVDs
- Linear channels and content providers

In addition, the effects of Canvas may also be felt in the following sectors:

- Broadband and Internet service providers (ISPs)
- Equipment manufacturers

9.3 The counterfactual: 'A world without Canvas'

The television and audiovisual sector is dynamic and changing rapidly. It is difficult to predict the future with certainty as technology, viewing behaviour and the regulatory environment all evolve.

In the counterfactual[52] we assume that the existing mix of television platforms and retailers continues – although we do allow for: Sky's premium channels to be wholesaled on pay DTT;

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51 The EPG will be regulated by Ofcom's EPG code, which requires fair reasonable and non-discriminatory treatment of channels wishing to be placed on the EPG. Therefore, this paper does not analyse the EPG element of the Canvas standard.

52 The 'base case' in the model.

wide adoption of push-VoD[53] technology and continual roll-out of IP connected proprietary set-top boxes and televisions on both free and pay platforms. Neither Canvas nor a strong pay DTT offer (e.g. from Sky) is launched.

In the counterfactual DTT, cable, Freesat[54] and pay satellite penetration grows until digital switchover in 2012. After switchover is complete, growth in digital penetration will be limited to household growth. At the same time, however, the DTT platform is likely to become increasingly fragmented and less open as the penetration of pay-DTT (Top Up TV, BT Vision etc) grows and IP connectivity increases.

The growth of primary-set DTT homes (with increasing numbers likely to include PVRs and broadband connections) and the adoption of IP connections on the satellite platform lead us to expect a significant increase in VoD consumption. It is currently unclear whether increased VoD consumption will affect linear channel viewing.

The modelling suggests that the BBC's share of total linear broadcast viewing across all platforms decreases by less than one percentage point to 2017. The increase in viewing of VoD content over broadband connections may lead to some increase in the costs to non-LLU ISPs.[55] This cost impact may be somewhat mitigated as the number of broadband subscriptions increases over time, as subscribers trade up to more expensive packages and as broadcasters increasingly use PVR technology to deliver the most popular VoD content via broadcast rather than through the IP connection. Ultimately, the world without Canvas will depend on many factors, not least the product launches of commercial broadcasters such as Sky.

For illustrative purposes we have also described a scenario without Canvas where a successful pay DTT service, such as Sky's proposed Picnic service, launches. In that scenario, we expect the DTT platform to grow at a faster rate (driven initially by Sky marketing) but then decline as homes migrate to pay satellite, with the DTT platform ultimately smaller and much more fragmented and closed than described above.

9.4 Market impacts

Approach

We have attempted to identify the possible market impacts of Canvas by comparing up to 2017[56] various scenarios against our counterfactual. We initially compare an ambitious scenario in which Canvas thrives and faces no competitive response (the 'no response' scenario) with the counterfactual. We highlight this ambitious scenario to emphasise the potential impact of widespread Canvas adoption. The scenario description is based primarily on the results of independent modelling work undertaken for the project.

We then add some sensitivity analysis by comparing the 'no response' scenario against a variety of other scenarios: a widely adopted Canvas with a competitive response from pay satellite (DSat); a widely adopted Canvas with a strong pay DTT response; an unsuccessful Canvas with a strong pay DTT response and an unsuccessful Canvas launch with a weak pay DTT response.

53 Push-VoD utilises broadcast transmission of programmes to a reserved section of a digital personal video recorder (PVR) to offer on demand content to users.

54 In this document Freesat will refer to the BBC/ITV joint venture and FREESAT from Sky will refer to Sky's free satellite offer. FREESAT from Sky is likely to decline as Sky customers are persuaded to migrate to pay satellite.

55 Non-LLU ISPs are those internet service providers that have not invested in unbundled local loop capacity but instead rely on variable capacity arrangements, for instance using BT Wholesale's IP Stream product.

56 The impact on the various platforms and on the number of VoD capable homes is modelled to 2017; the impact on ISP costs is modelled to 2014.

Estimated impacts

<u>The ‘no response’ case</u>

In the ambitious scenario where the Canvas technical specification is widely adopted on a platform neutral basis and there are no other significant market changes (the ‘no response’ case), the DTT platform outperforms its rivals with higher growth than the counterfactual; it is also much more open. Canvas becomes the de facto standard for IP connected set-top boxes and is adopted by pay-DTT services (such as Top Up TV and BT Vision; it would also be available to a Sky DTT offer). Pay satellite would face a decline in growth - although it would be insulated by both its attractive premium content offering and by its ability to offer bundled services – both of which reduce churn; Cable similarly declines. Freesat and FREESAT from Sky penetration remain broadly constant.

A widely adopted Canvas also has a positive effect on VoD consumption as the number of homes capable of receiving VoD increases significantly compared to the counterfactual and the DTT platform remains more open (i.e. subscription is not necessary to access VoD content). The impact of increased VoD consumption on linear viewing is less clear and difficult to identify. We estimate little impact on total linear viewing (and recent research supports this hypothesis); the possibility of new innovative linear broadcast channels utilising the IP connection may even increase linear consumption. Impacts on on-demand films and short form content are also difficult to estimate given the lack of current data; DVDs are likely to be affected negatively.

The key impact of a successful, widely adopted Canvas is on broadband network providers and ISPs. On the one hand, broadband subscriptions are likely to increase and subscribers may trade-up their subscription packages more than they would have done in the counterfactual. However, increased VoD consumption may place increased demands on broadband network capacity. This is likely to be particularly the case for those non-LLU ISPs as their unit costs tend to rise in line with traffic volumes (whereas unit costs for LLU ISPs tend to decrease as traffic volumes increase, due to economies of scale).

There will be a clear, positive impact on set top box manufacturers from increased box churn.

<u>Sensitivity analysis – a variety of competitor responses</u>

We also need to take account of competitor responses to a widely adopted Canvas, particularly from pay-TV providers. Should the competitive response be via DSat, we would expect DTT penetration to decline slightly compared to the ‘no response’ scenario. DSat penetration is considerably higher and FREESAT from Sky penetration lower as Sky successfully migrates customers to its pay offer. Cable and Freesat penetration are both lower. VoD consumption, broadband subscriptions and non-LLU ISP costs are also lower.

Should a strong pay-DTT alternative to Canvas be developed, we would expect DTT penetration to increase even further compared to the ‘no response’ case, although the DTT platform will be less open and more fragmented. Pay satellite, cable and Freesat penetration is lower; FREESAT from Sky penetration is broadly unchanged. There is a significant increase in pay subscribers across the platforms. Consumption of VoD increases, as do broadband subscriptions; non-LLU ISP costs are lower.

Should Canvas fail to achieve wide adoption and there are competitor responses on DTT, we would expect outcomes to be broadly similar to the counterfactual world described above.

9.5 Market Impact Conclusions

In summary, we expect by 2017 that a successful launch of the Canvas standard will have a positive market impact on:

- DTT penetration (which is good for consumption of PSB content), and
- The nature of the DTT platform – a more open platform provides more opportunities for content suppliers;
- Consumption of VoD content;
- Set top box manufacturers; and
- Growth of broadband homes.
- Unit costs of LLU ISPs may also be positively affected.

Negative market impacts are somewhat more uncertain, particularly with regards to pay satellite given the uncertainty around Sky's potential strategy for pay DTT – although the modelling suggests that if Sky were to launch its own pay DTT offer, the loss of DSat subscribers would be almost exactly offset by new pay-DTT subscribers.

- FREESAT from Sky may be negatively affected, although this is due to Sky migrating customers to pay over time.
- The key negative impact is likely to be felt by non-LLU ISPs, although they are likely to have some scope to pass on higher costs to end users and to benefit from new subscribers and 'trading-up by existing subscribers.
- Cable is also likely to face reduced penetration relative to the counterfactual.
- DVD market is likely to suffer.

10 Risks

The key risk for this project is [redacted]. As such, the costs in this paper are our best estimates at present date.

	Likelihood	Severity	Mitigation/Comments
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

11 Timetable and next steps

Trust Approvals
- October 08 – Verbal briefing for Trustees
- November 08 – Submit NSA application to Trust via F&SC

Internal Approvals
- Sept 08 – BBC Direction Group (Strategy and prioritisation)
- October 08 – Finance Committee (Full case funding)
- October 08 – Executive Board
- November 08 – Executive Board (For noting)

The following annexes to the full non service approval paper are available:

Annex 1 – Nature of costs
Annex 2 – Cost recovery
Annex 3 – Key drivers of distribution costs
Annex 4 – Possible Merger Control, Competition Law and State Aid issues
Annex 5 – Rights implications: the delivery of BBC linear & on demand services via IPTV
Annex 6 – Current position with Freeview Board
Annex 7 – Preliminary Market Impact Assessment
Annex 8 – Canvas and the UK ISP community
Annex 9 – Venture structure for Canvas