

Canvas

Public Value Assessment

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Glossary of Terms

ABC1	Social grades classification relating to occupation, ABC1 encompasses managerial, professional, administrative and supervisory roles
Broadband	A high-speed network service with the capacity to transmit significant amounts of data at a high rate, supporting the delivery of a range of digital services, some or all of which can occur simultaneously
Canvas UX	Canvas user experience, the interactions between a user and a Canvas device, which will encompass sections managed by the Canvas joint venture, content providers, manufacturers and internet service providers
Canvas UI	Canvas core user interface, the subset of the user experience which is managed by the Canvas joint venture
Catch-up	Catch-up television services available to audiences
CDN	Content delivery network
Charter	The current Royal Charter governing the BBC
Click-through	A measure of the number of times a particular link on a web page has been clicked
Convergence	The tendency for different technologies to evolve towards performing similar tasks, for example, watching programmes on a mobile device

CTS	Core technology specification or standard (as it relates to Canvas)
C2DE	Social grades classification relating to occupation, C2DE encompasses skilled, semi-skilled and unskilled manual workers, pensioners and those dependent on the state for their income
D-Book	Sets out the detailed technical standards for digital terrestrial television in the UK
D-Book 6	Latest version of D-Book which sets out the HD receiver specification, including a return path for delivery of content over IP
DCMS	Department for Culture, Media and Sport
Disintermediation	The removal of intermediaries from a process, supply chain or market
DRM	Digital Rights Management
DTG	Digital Television Group
DSO	Digital switchover, refers to the transition from analogue to digital transmission across the UK
DTT	Digital terrestrial television, delivered most commonly through the Freeview service
Embedded content	Content, usually media, from another website or source that is included seamlessly within the body of a website. In many cases users can take embedded content and add it to the body of their pages/social sites instead of linking back to the original source.
EPG	Electronic programme guide

Framework Agreement	Framework Agreement dated July 2006 between the BBC and the Secretary of State for Culture, Media and Sport, also referred to in the PVA as the 'Agreement'
Freesat	Refers to the BBC's Freesat platform, which was launched in May 2008, offering a satellite alternative to the DTT Freeview service
HD	High definition television
IP	Internet protocol, a method by which data (e.g. email, video) are sent from one computer to another on the internet
IP-enabled	A device capable of connecting to the internet, whether through a fixed connection (e.g. broadband or cable TV), or wirelessly (e.g. over mobile networks or WiFi)
iPlayer	Online, on-demand catch-up BBC offering, which allows users to watch BBC programmes from the previous seven days
ISP	Internet service provider
Linear content	Refers to scheduled broadcast television content
MIA	Market impact assessment to assess the market impact of new BBC proposals
Non-rejectors	A term used in audience research conducted by the Opinion Leader on behalf of the Trust into Canvas proposals, 'non-rejectors' refers to the whole sample excluding those who were 'not at all interested' in Canvas, including 'don't knows'
On-demand	Allows users to select, stream or download, store and view film and television programmes, usually within a

	certain timeframe, using a digital cable box or online service
Over the top delivery	Delivery of data over an ISP's broadband network
Push VOD	Whereby content is stored on a server and streamed in real time to the view. VOD systems allow the customer to start viewing the content at any time as well as to pause and rewind the content
PVA	Public value assessment, undertaken by the BBC Trust to assess the value of the BBC proposals, including value to licence fee payers, value for money and wider societal value
PVR	Personal video recorder
PVT	Public value test; significant changes to the BBC's UK Public Services must be subject to full and public scrutiny. The means by which this scrutiny takes place is the public value test. A PVT is a thorough evidence-based process which considers both the public value and market impact of the proposals. During PVTs, the BBC Trust will consult the public to ensure its decisions are properly informed by those who pay for the BBC.
Q&A	Question and answer
R&D	Research and development
Reach	Measures reach of the BBC's service to its audience
Re-authoring	Transforming content into various delivery formats
Service licence	The BBC Trust aims to ensure that the BBC offers high-quality and original services for all licence fee payers. To help deliver this, it sets out the remit and expectations for each BBC service – and how that

service will create public value by delivering the BBC's public purposes – in a published licence.

Service provider A company operating a service on a given platform. For example, Top up TV is a service operator on DTT.

Trans-coding The digital conversion of one format to another

UI User Interface

VOD Video on demand

Any other defined terms used are taken from the BBC's Framework Agreement, unless otherwise stated.

1. Executive Summary

1.1 Introduction

1.1.1 In November 2008, the BBC Executive ('Executive') submitted proposals to the BBC Trust ('Trust') to develop a joint venture proposition that would promote a standards-based open environment for internet-connected digital terrestrial television devices. For consumers this would enable subscription-free access to on-demand television services and other internet-based content, through a new broadband-connected digital device.¹ A full description of the proposals is set out at annex I and summarised at 1.2 below.

1.1.2 Having considered the key features of the proposition in the context of its regulatory obligations under the Charter and Agreement, the Trust determined that Canvas is a non-service activity and agreed to the process by which it should be evaluated. Details on the non-service approval process are set out in section 2.

1.1.3 Essentially, the Trust considered it appropriate to undertake an assessment of both the market impact and public value of the Canvas proposals, including public consultation. In summary:

- The initial consultation began on 26 February 2009. During this period, we sought the views of broadcasters, content owners, internet service providers, platform owners, consumer device equipment manufacturers, industry and consumer groups and audience councils. The Trust Unit met with over 60 stakeholders as part of its engagement strategy. The consultation received over 800 responses from members of the public and industry stakeholders.
- In June 2009, the Trust sought further details from the Executive on certain areas of the application. These included the choice of technical standards, the way in which the BBC would work with industry bodies, control of the EPG, governance arrangements, and the degree of

¹ To access internet content and on-demand services, consumers would need a suitable broadband package.

editorial controls. Further information from the Executive was published by the Trust in July 2009. In August, the Trust engaged further, meeting with key stakeholders, and inviting comments on the revised material from interested parties. In November 2009, the Executive provided details as to the revised governance proposals and updated cost information. This additional material was published by the Trust and made available for stakeholder comment.

- 1.1.4 This document sets out the Trust's position on the public value of the Canvas proposals (the PVA). It is published alongside the Trust's market impact assessment of the Canvas proposals (MIA).

1.2 Description of the Proposals

- 1.2.1 Our understanding of Canvas, and thereby this public value assessment, is based upon:

- The Executive's application, and accompanying annexes
- The Executive's response to the Trust's request for clarification provided in July 2009
- Further information on governance and costs published by the Trust in November 2009

- 1.2.2 A full description of the proposals can be found in Annex I and a summary is set out below.

- 1.2.3 Canvas involves the creation and/or development and promotion of a set of core technical specifications to enable delivery of on-demand, interactive and web-based content to a television, via a broadband connected digital device.

- 1.2.4 The CTS will include standards for consumer device equipment, content delivery, measurement, presentation and security technologies. Canvas also involves the creation and/or development of specifications that support the development of a user experience (UX). Viewers wishing to access on-demand content on their television set using a Canvas-enabled device will require a broadband connection.

- 1.2.5 Although the specific configuration of a Canvas device may vary by manufacturer, it will include an Ethernet port for internet connection, enabling catch up television and access to non-broadcast content. In addition, it is likely to include a personal video recorder and HD capabilities.
- 1.2.6 Canvas will not create, aggregate, licence or retail any content. Neither will it act as an internet service provider. Rather, Canvas will facilitate access to content. Canvas will not manufacture or sell Canvas-enabled devices, nor will it subsidise their purchase.
- 1.2.7 Canvas will involve the development and management of a user interface containing an electronic programme guide, allowing audiences to search and browse for linear and non-linear content and services.
- 1.2.8 The Canvas brand will only be licensed where the core technology standard, user interface and user experience software standards are adopted.²
- 1.2.9 Canvas will operate on a cost recovery basis and BBC investment will be funded by the licence fee. A joint venture will be established to develop, support, manage and promote both the core technology standard and user interface. However, the ability to gain access to the platform and market a Canvas device is not contingent on membership in the venture. The Canvas core user interface will be developed, maintained and controlled by the Canvas joint venture. It will consist of:
- A main menu or top level experience (Figure 1.1)
 - A simple linear guide for television and radio³
 - An ordered list of on-demand services (Figure 1.2)
 - A basic search and browse functionality for web and interactive content and applications
 - Settings (for example, options for parental controls)⁴

² The ambition is for the Canvas UX to be included as the default UX for audio visual content on a range of devices that would carry the Canvas brand.

³ Primarily a rendering of the existing Freeview/DMOL guide.

⁴ Other areas of functionality settings may be specific to the device and would be determined and controlled by the manufacturer.

Figure 1.1: Example screenshot of main menu over live television⁵

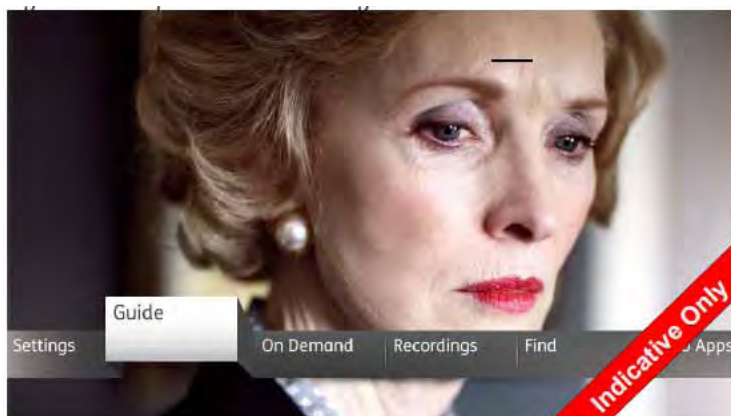
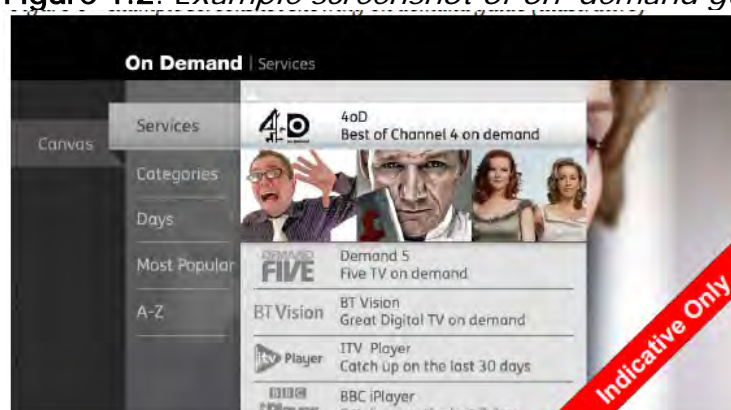


Figure 1.2: Example screenshot of on-demand guide⁶



1.2.10 More specifically, we understand that:

- Third party content providers and aggregators can develop and personalise their respective areas of the non-core user interface (see Figure 1.3)⁷
- Audiences will be able to customise the user experience, for example by displacing or adding items to the main menu.

⁵ Indicative examples, for illustrative purposes, provided by the Executive in its response to the Trust's request for further information on proposals, section 2, EPG and enabling access for content and service providers, as published in July 2009.

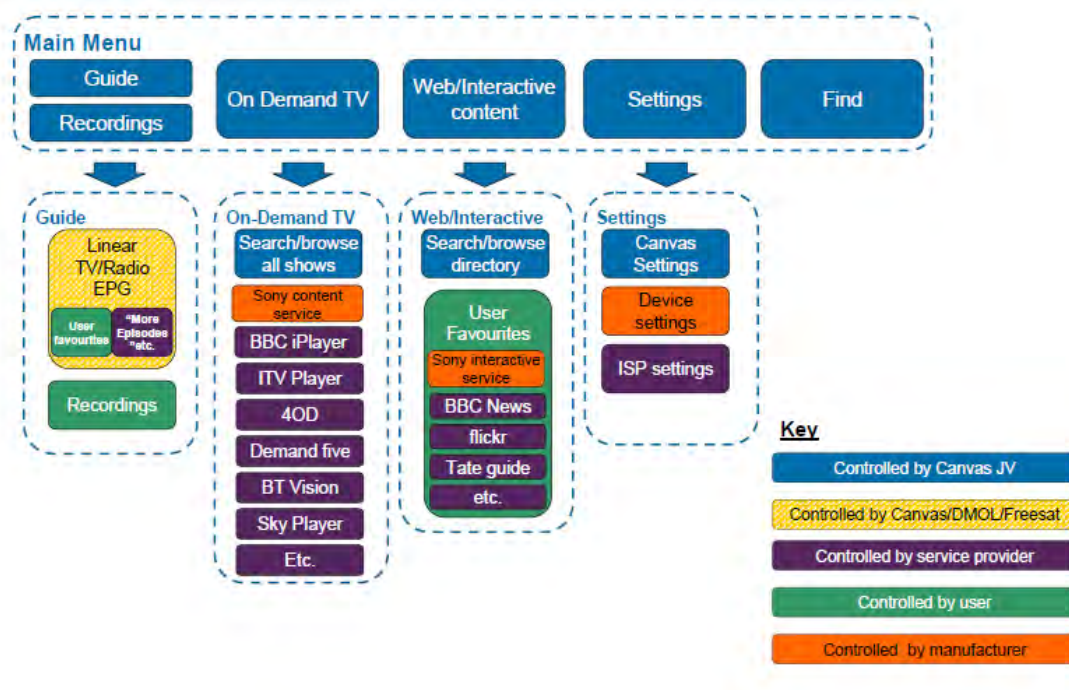
⁶ Indicative examples for illustrative purposes, provided by the Executive in its response to the Trust's request for further information on proposals, section 2, EPG and enabling access for content and service providers, as published in July 2009.

⁷ There will be a 'transition' from the Canvas core user interface to one designed and controlled by the content provider.

- Customisation of the core UI, especially for reasons of accessibility, is also permitted where technically feasible.
- Co-branding and shortcuts on the first-level menu may be permitted for ISPs and other parties which support Canvas devices⁸.

1.2.11 The Executive has provided a high-level illustration of how various sections of the Canvas user experience may operate and how control is delegated from the joint venture to other parties (Figure 1.3).

Figure 1.3: Structure and ownership of the user experience on a Canvas branded device⁹



1.2.12 Canvas is intended to be open at every level of the supply chain. In particular, as regards third party content providers:

- Subject to limited content standards (based on legality), third party content providers will be able to make their content available via

⁸ To their services, such as online billing and customer support, or even audio-visual offers.

⁹ As provided by the Executive in its response to the Trust's request for further information on proposals, section 2, EPG and enabling access for content and service providers, as published in July 2009.

Canvas-enabled devices and can have their content listed on the Canvas EPG.

- The BBC will not have the ability to enforce its own editorial standards in respect of third party content.
- There will be a listing fee for inclusion in the Canvas EPG calculated on a cost recovery basis.

1.2.13 The Executive has stated that Canvas will be open to free, advertising-funded and paid-for content (via a range of payment models¹⁰). Linear and on-demand content on the EPG will be listed in accordance with applicable law. Ofcom's EPG code requires fair, reasonable and non-discriminatory treatment of channels. Existing linear channels will follow the Freeview/Freesat guide. Additional channels delivered via broadband and on-demand content will be treated on a 'first-come, first-served' basis.

1.2.14 Service providers will be required to meet a minimum quality standard defined in terms of consumer experience rather than by reference to any one technology solution (the 'minimum quality standard'). This will be defined in output terms as being that which delivers a similar consumer experience to that of watching a standard definition channel on Freeview.

1.2.15 Aside from satisfying the minimum quality standard, it is envisaged that there will be flexibility for the technology involved in content delivery. Canvas will allow both 'managed' delivery (whereby ISPs use a specific system to ensure a certain quality of delivery standard) and 'over the top' (delivery of data over an ISP's broadband network on the same basis as other data, e.g. emails and voice). Over the top delivery is most cost effective, but managed delivery (using CDN technology) is superior in terms of quality. Canvas will not require content or service providers to use BT's CDN technology.

¹⁰ Some payment models require particular elements to be included in the technical specification and so the first wave of Canvas devices may not support a full range of payment models.

1.2.16 The scope of the public value assessment is limited to implementation of the Canvas standard on the DTT platform. Should the Executive wish to merge the Canvas and Freesat joint-ventures at any future point that will likely be subject to separate consideration by the Trust.

1.3 Summary of findings

Introduction

1.3.1 A growing appetite for on-demand content and a commitment to evolve the DTT platform, provide the Executive's strategic rationale for the proposals. The Executive submits that Canvas represents a logical and necessary step in the evolution of DTT and that its launch would strengthen the platform and safeguard its future. Enabling access to a wider range of content and services on DTT will, it maintains, secure parity with pay platforms and protect the principle of universal access to public service content.

1.3.2 We agree that these are important objects, but can see further, wider benefits and a broader, enabling role for Canvas. In delivering a range of content and services, in a way that is accessible to all audience groups, it may help to stimulate broadband adoption, whilst allowing content providers to secure maximum value from their material.

1.3.3 It remains likely that the UK will continue to rely predominantly on terrestrial broadcasting. As the centrepiece of Government plans for switchover, it must therefore form part of BBC strategy to support DTT and make its content available on the platform. This is consistent with clauses 12 and 35 of the Framework Agreement, which, respectively, place a duty on the BBC to:

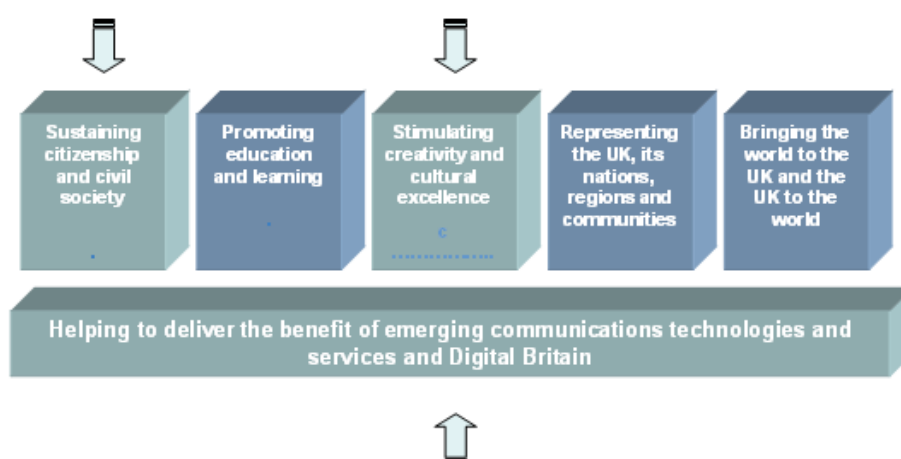
- make the UK public services widely available in a range of convenient and cost effective ways, and
- ensure that substantially the same proportion of UK households that receive analogue television services can receive all BBC principal television services in digital form.

1.3.4 We can also see a clear link from the proposals to the delivery by the BBC of its public purposes. The BBC exists to serve the public interest

and its main object is the promotion of its public purposes (Figure 1.4). The extent to which the proposals will ultimately generate value rests, therefore, on their ability to advance the purposes. The Executive submits that the proposals contribute to the delivery of three of these: emerging communications, sustaining citizenship and civil society, and stimulating creativity and cultural excellence.

1.3.5 We consider that the sixth public purpose is most relevant to our assessment given that Canvas is specifically aimed at delivering the benefits of DTT and Digital Britain. The extent to which the proposals contribute to sustaining citizenship and civil society and to stimulating creativity and cultural excellence, by furthering the media literacy agenda, is somewhat less evident but important.

Figure 1.4: *BBC public purposes, as laid down in the Charter*¹¹



1.3.6 Improving access to the BBC's public services in a technologically changing environment is a key strategic driver. As set out in clause 12, above, the BBC must do all that is reasonably practical to ensure that viewers, listeners and other users are able to access the UK public services. The Charter also provides that one of the objects of the BBC¹² is to help deliver to the public the benefit of emerging communication technologies and services.

1.3.7 The Trust acknowledges the importance of DTT, from both an audience and public policy perspective. We also recognise that it currently delivers

¹¹ Each public purpose has a purpose remit, these identify priorities set by the Trust to help the BBC focus on its remit and deliver the purposes.

¹² In promoting its other public purposes.

higher reach of BBC programmes relative to other platforms.¹³ Securing its future, and ensuring the BBC maintains a direct role in platform provision, is therefore important.

- 1.3.8 More fundamentally, the delivery of the public purposes and the creation of public value are contingent on direct engagement with licence fee payers, to ensure that BBC output continues to meet their changing needs and expectations. The launch of iPlayer demonstrates the value to the BBC of maintaining this relationship and retaining control over the presentation of BBC content, influencing the user experience in a way that aids navigation and benefits audiences.
- 1.3.9 We also recognise the role of Canvas in furthering the partnerships agenda. In June 2008, the Trust challenged the Executive to develop a range of potential partnerships designed to build value for public service broadcasting in the UK. The Executive was tasked with developing sustainable proposals which leveraged the cornerstone role played by the BBC in broadcasting without diminishing its service to audiences. Canvas represents such an opportunity, working in partnership to evolve free-to-air television on the DTT platform.
- 1.3.10 In undertaking this assessment, we found it appropriate to consider, and thereby structure our assessment, around four key questions:
- Is there consumer demand for IPTV?
 - Is there a role for the BBC and what form should this take?
 - In which ways will BBC involvement deliver value to audiences – taking account of reach, impact, quality and value for money?
 - What will happen in the absence of Canvas (the counterfactual)?

Is there consumer demand for IPTV?

- 1.3.11 Our research uncovered clear interest in Canvas proposals. We found evidence of strong demand for a wide range of content and a willingness to pay for the supporting equipment. Audiences expect a high degree of functionality which, in turn, is shaping consumption habits, whilst a

¹³ Cable and satellite.

growth in fixed line broadband connections has accelerated acceptance of new consumer propositions.

- 1.3.12 Bringing iPlayer to television is a strong pull. An integrated offering employing a consistent user interface, and offering catch-up, PVR and HD capabilities, found favour with a broad demographic. Our audience research has found significant interest in Canvas and broad support for BBC involvement (although many have noted that this should not come at the expense of its core programme-making remit).
- 1.3.13 We also found demand for internet access and for the delivery of a range of content and services. Canvas will support an advanced, flexible, user-friendly interface, which allows for a rich experience and enables delivery of a wide range of targeted content and interactive services. In this respect, it differs from D-Book 6 which was developed mainly to support the distribution of VOD from existing broadcasters and is likely to be more limited therefore, both in the content it offers and its presentation.
- 1.3.14 Given the relative novelty of the concept,¹⁴ however, some found it difficult to envisage the benefits of web access or the way in which they might use such functionality. Others felt strongly that Canvas would need to offer a wider range of content and services to be viable as a product and several identified the benefits of access to a growing range of public services and local information. A wide range of commercial, civic and community providers deliver public service content online, often in areas where the economics of linear television are challenging, and several signalled their support for proposals.

Is there a role for the BBC and what form should this take?

- 1.3.15 Despite the emergence of alternative offerings, the concept of Canvas has attracted support from a broad church, both from industry, which welcomes the universal deployment of IP to the television, and from licence fee payers, many of whom expect the BBC to play a central role in its development.

¹⁴ Being internet access through the television.

1.3.16 There were mixed views and little consensus, however, as to the nature and extent of BBC involvement. Several stakeholders were critical of any intervention that might dampen innovation and investment in a nascent sector.¹⁵ Others argued that, whilst the BBC has certain specific duties in relation to the development of DTT, these do not extend to the type of intervention outlined under proposals. A number believed that BBC involvement was essential not only to establishing the standards and coordinating and accelerating the process but also to providing the overall proposition with the credibility necessary to achieve scale.

1.3.17 We found broad support for the creation of an open standards platform, but concern that certain areas may not be implemented consistently with these principles. Several stakeholders feared the joint venture may employ technical criteria to block or restrict access and use control of the UI to shape the platform in its own interests. Others believed the BBC would advance and uphold the principles of fair, reasonable and non-discriminatory access to the platform.

1.3.18 We recognise the importance of industry engagement and the role it plays in securing widespread adoption of new receiving devices. We also accept the point made by a several stakeholders that the wider objective of universal deployment of IP to the television may be best achieved via industry consensus, working within established industry mechanisms.¹⁶ We thereby encourage engagement by the Executive in this area.

In which ways will BBC involvement in the Canvas proposals deliver value to audiences?

1.3.19 We consider public value in two dimensions - of BBC involvement in the joint venture and of Canvas more generally. Put another way:

- The public value to licence fee payers of better access to BBC content on DTT and accessibility and usability of the EPG and UI

¹⁵ Potential market impact is assessed separately in the Trust's Market Impact Assessment.

¹⁶ In July 2009, in response to a request from the Trust for further details on key aspects of proposals, the Executive made clear a commitment to work more closely with industry on the development of the Canvas standard.

- The benefits to licence fee payers of developing technology, evolving DTT and driving broadband uptake

1.3.20 We also considered the extent to which proposals generate value in respect of the key drivers of public value, quality and distinctiveness, reach, impact, cost and value for money.

Are proposals high quality and distinctive?

1.3.21 As part of our assessment, we considered whether proposals were of high quality and distinctive. Our findings support the multifarious nature of quality; expectations vary by audience group, as do incentives to adopt Canvas. Perceptions depend on various factors, such as the appeal of different elements of the offer, envisaged use, current equipment and services and response to cost. In assessing quality and distinctiveness, we considered the following elements:

- Guaranteed quality of service
- A single user interface
- Parental controls
- Subscription-free access to linear and on-demand services
- Low barriers to entry for content providers
- Centralised customer support

Guaranteed quality of service

1.3.22 Canvas would lead to a significant increase in the volume of video traffic and stakeholders sought assurance that it would deliver a high-quality viewing experience, a reflection perhaps of uneven broadband coverage and a disparity in speeds not only across locations but also between providers and throughout the day.¹⁷

1.3.23 There was a range of views and little consensus on how Canvas should address the quality of service delivery. In additional information

¹⁷ Over 95% of homes in the UK can in theory receive a headline speed of 2Mbps with most homes able to access connections with much higher peak speeds ranging from 8 – 50 Mbps. However, actual broadband speeds vary widely, both geographically and depending on time of day. Further details are set out in Annex III, Factors Affecting Broadband Speeds.

submitted in July 2009, the Executive sought to make clear its approach to content delivery, both 'managed' and 'over the top'.¹⁸ Given the difficulty in guaranteeing reliable, real-time, over the top delivery of video data at peak times, it set a minimum quality threshold in its original application, which it further developed in July:

All long form (TV) video is subject to the same TV quality standard, whether it is delivered in a managed or over the top manner. The details of this quality standard are being developed, but it is expected to be comparable to a DTT channel, define a minimum bit rate (reviewed periodically) and a requirement to play continuously once started.

...The Canvas device specification will include mechanisms to allow the standard to be met for over the top video, for example, by delaying the start of playback until sufficient content has been buffered to enable continuous playback to take place.

There will be clear signalling to the end user at the point of selection if content is available to play immediately with 'managed delivery', or if there may be a delay before it is ready to play.¹⁹

- 1.3.24 In cases where network throughput is insufficient, consumers will still be able to access push VOD content available via Canvas, which will deliver a comparable quality to broadcast programmes without placing any dependence on the capability of the network.²⁰
- 1.3.25 In seeking to guarantee quality of service in this way, Canvas potentially sets itself apart from alternative products. This is particularly important

¹⁸ Managed delivery is where the ISP uses a system of choosing to improve delivery of certain content to Canvas - an agreement is required between content provider and ISP to achieve this. Over the top delivery is where data are delivered to the Canvas device via an ISP's broadband network on the same basis as any other data delivered over the public open internet (email, web video, etc.)

¹⁹ Additional information submitted by the Executive, section 4, IP distribution and related issues, July 2009.

²⁰ By delivering the most popular content overnight, the push VOD service aims to mitigate some of the network costs faced by ISPs in delivering VOD content.

given that consumer expectations of quality differ markedly when viewing on a television set and a PC screen.

- 1.3.26 The use of an accreditation scheme to signal which ISPs were capable of meeting minimum quality thresholds drew a mixed response. Whilst some argued that it could be an effective solution to quality of service, others were critical of the criteria used to award the standard and regulation of the scheme by the joint venture and pressed for independent oversight.

A single user interface

- 1.3.27 A core principle underpinning the Canvas proposals is a desire by its members to establish a common user interface. A central benefit of proposals, therefore, is the opportunity to implement best practice for accessibility and usability and provide safeguards for vulnerable groups.
- 1.3.28 The Executive submits that a consistent experience 'is critical to the BBC's ambitions to diminish barriers, both real and perceived, confronting audiences seeking to access new technology'. This is consistent with the Charter and Agreement, which directs the BBC to 'do all that is reasonably practicable' to ensure that audiences can access output in 'a range of convenient and cost effective ways'.²¹
- 1.3.29 Canvas goes beyond the technical specification of reception equipment captured in the D-Book²² and seeks to impose a discipline on the user experience, one which conforms to best practice in terms of accessibility. We can see the value of such an approach; a growing demographic of older and disabled users is disenfranchised by technological advances. Many have multiple minor impairments, reduced sensory and motor abilities or cognitive dysfunction and would benefit from the inclusion in Canvas of specific accessibility features. Consistency fosters familiarity, which aids usability, delivering benefits

²¹ Clause 12, Framework Agreement.

²² The D-Book does not currently specify the look and feel of receivers' user interfaces such as electronic programme guides (EPGs); certain usability and presentation guidelines are permitted, however, allowing manufacturers and service providers to differentiate their offerings.

therefore, not only to the UK's eleven million disabled people but also to older audience groups and those less confident with new technology.

1.3.30 We found consensus on the need for simple and accessible design but far less agreement on how this could be achieved. Some stakeholders have argued that Freeview is not hampered by the absence of a single EPG. We accept this and recognise that certain consumers grasp and adopt new technology relatively quickly. We make the point, however, that as content offerings become more complex, a single user experience that goes beyond basic principles and conforms to best practice in terms of usability and accessibility is likely to grow in importance.

1.3.31 We accept the limitations of commercial provision in this area and recognise the value their inclusion brings not only to under-served groups but also to audiences more generally. By exceeding the legal duties placed upon providers and platform operators with regard to access provisions, therefore, Canvas potentially sets itself apart from alternative products and promises to deliver value to all licence fee payers.

1.3.32 It may be, however, that some degree of flexibility on the UI that goes further than the Executive envisaged in its application, may be desirable, without compromising the core principles of usability and access.

Parental controls

1.3.33 Consumer expectations of quality and distinctiveness also extend to editorial standards.²³ Editorial control is limited by reference to legal limits, as set by applicable law and the Audiovisual Media Services Directive,²⁴ whose implementation becomes effective in December

²³ The joint venture will decide which IPTV services can be made available on the platform, the basis of its decisions would relate only to technical integration and compliance with minimum standards.

²⁴ It amends and renames the Television without Frontiers Directive, providing less detailed but more flexible regulation. The new directive covers audiovisual media services including video-on-demand (non-linear services). It is implemented in UK law by the Audiovisual Media Services Regulations 2009, SI 2009/2979 (9 November 2009).

2009.²⁵ Canvas will aim at minimum legal compliance rather than seek to impose standards on the content it carries. Users seeking to block access to unwanted content would instead have to rely on parental controls.

1.3.34 We found appetite among audiences and stakeholders however for some kind of guidance in respect of the different type of content that is available. Our research revealed a clear preference for a number of safeguards, such as built-in virus software and parental controls.²⁶

1.3.35 Several stakeholders assumed that BBC participation in the joint venture would of itself give rise to higher editorial standards and many expected the BBC to assume the role of a 'trusted guide'. Others were keen to ensure that the imposition of minimum technical standards would not allow the joint venture to restrict access to the platform and many cautioned against the creation of an editorial gatekeeper and custodian.

Subscription-free access to linear and on-demand services

1.3.36 Respondents to our consultation generally agreed that the BBC should improve access to its on-demand services and many supported the concept of subscription-free access. Nearly a third of respondents highlighted subscription-free access as a main point of difference. One or two, however, questioned whether Canvas marked a shift from free-to-air PSB content by mandating an internet connection and some were critical of having to pay for a broadband subscription.

1.3.37 In general, however, the combination of features in a single, subscription-free product was perceived to be of value.²⁷ In the quantitative phase of our audience research, the opportunity to access all Freeview channels and radio stations was the single most important feature, ahead of PVR and HD, with more than eight in ten (83%) expressing an interest and just over one-third (35%) 'very interested'.

²⁵ Linear channels would require an Ofcom licence to gain access to the linear section of the Canvas EPG.

²⁶ Opinion Leader research undertaken for the BBC Trust, November 2009.

²⁷ Opinion Leader research undertaken for the BBC Trust, November 2009.

Low barriers to entry for content providers

- 1.3.38 Canvas will allow providers to exploit an affordable route to a wider market, establishing new business models and broadening their audience base.²⁸ Greater access to a wider range of content delivers improved choice and broader value to licence fee payers, allowing providers to secure maximum value from their material.
- 1.3.39 A wide range of commercial, civic and community providers delivers public service content online, often in areas where the economics of linear television are challenging, and several signalled their support for proposals. Many are committed to enabling the widest access to their material across all platforms, but often lack the means to do so.
- 1.3.40 Broadening access to the television set has gained widespread support. The Government is keen to see local television develop on a multi-platform basis and play a more active role in the wider local media ecology.²⁹ Several stakeholders saw a role for Canvas in bringing about these developments.
- 1.3.41 There were concerns, however, that Canvas may not be implemented in a way that is consistent with the overarching principles of open and free access. Fees were an area of concern for several stakeholders; the Executive maintains these will be charged on a cost recovery basis, but many noted the potential to generate significant revenues and pressed for greater certainty.
- 1.3.42 Respondents highlighted the importance of fair and reasonable access to the platform and many pressed for a better understanding of the rules governing visibility. Canvas will not impose editorial standards on the content it carries³⁰ but several stakeholders suggested that it may employ technical criteria to block or restrict access. Others feared it

²⁸ The joint venture is expected to operate on a cost-recovery basis, allowing content providers to access Canvas at a lower cost than other platforms. It therefore potentially offers lower barriers to entry for content providers, allowing anyone with a website access to a Freeview audience.

²⁹ DCMS, Digital Britain Final Report, June 2009.

³⁰ Editorial control is limited by reference to legal limits, as set by applicable law and the Audio Visual Media Services Directive.

would use such levers as capacity restrictions and control of the UI to shape the platform in its own interests.

- 1.3.43 Several respondents were critical of a lack of clarity on monetisation options and the requirements necessary to deliver these. Many suggested that Canvas accommodate different business and revenue models. Others went further, arguing that arrangements did not give sufficient weight to the interests of commercial content aggregators. Several pressed for a centralised system that simplified the payment process for users and providers alike.
- 1.3.44 The Executive agreed with stakeholders that Canvas should not prevent the development of pay models on the platform,³¹ and set out its support for third parties to run a wide range of subscription and pay-per-view services.³² Whilst signalling support for conditional access, however, the Executive does not believe it appropriate for a 2010 launch product, preferring to consider the option 'as part of the longer-term Canvas roadmap'.
- 1.3.45 We welcome the use of objective measures to prevent undue prominence of major existing services but acknowledge the concerns of stakeholders that even a 'first-come, first-served' approach may give joint venture partners preferential access to the menu.
- 1.3.46 Finally, we agree that the inclusion of a wide range of payment models will deliver benefits to audiences via greater choice. We recognise that Canvas can make a significant contribution to this area but make the point that it must be open on a reasonable basis to third party content and services if its value is to be realised.

Provision of customer support

- 1.3.47 Provision of support is important, particularly for vulnerable groups. This is especially so given the technical nature of the proposition. The

³¹ Additional information submitted by Executive, section 2, EPG and enabling access for content and service providers, 24 July 2009.

³² Whilst this did not extend to a centralised payment system, we understand that the joint venture is considering ways in which to facilitate billing (by, for example, ensuring each Canvas device has a unique ID).

Executive envisages a light operational support model, which centralises and routes calls, guiding customers to the appropriate third party depending on the nature of their query.³³ The model also aims to reduce unnecessary calls to ISPs, thereby easing the burden on their support costs.

1.3.48 We recognise the importance of a simplified, centralised structure in reducing barriers to use, and welcome its inclusion in proposals, but also accept the limitations of 'pass through' telephone-only support, particularly for vulnerable groups.

Will Canvas maintain or extend BBC reach?

1.3.49 The basis of our reach assessment is whether people adopt Canvas in sufficient absolute numbers and whether it would extend or maintain BBC reach.³⁴

1.3.50 Estimating reach is somewhat speculative, with a wide range of operational, social and market forces at play. Uncertainty increases where the product or service is not only novel, but also based on a new technology, as with Canvas. Given these uncertainties, we relied on a range of projections, rather than a spot estimate as shown in Table 1.1.³⁵

Table 1.1: *Canvas device penetration*

Scenario	Base	High	Low
Total Canvas devices (millions)	4	8.3	1.2
On primary sets	2.5	5.6	0.7
On secondary sets	1.5	2.8	0.4
% of DTT HHs using Canvas on primary set	23	50	7
% of all TV HHs using Canvas	9	21	3

³³ For example, content provider, payment provider, ISP and equipment vendor.

³⁴ Including to certain audience groups.

³⁵ Projections are based on modelling by Value Partners. Value Partners built a detailed model to forecast the potential demand for Canvas for the period modelled to 31 December 2015. The assumptions used to build the model and the outputs generated are discussed in the Trust's MIA document and in detail in the Value Partner's report, 2009.

- 1.3.51 Despite the difficulties in establishing reach, we found evidence of strong demand for a wide range of content and a willingness to pay for Canvas devices. By 2015, we estimate sales of between 1.2 and 8.3 million Canvas devices, with an expected sales volume of 4 million (our base case). In general, uptake will predominantly be among Freeview households.³⁶ Uptake and thereby reach would be limited, initially, by the cost of access. We expect reach to increase, however, as the cost of devices falls, which is reflected in modelling commissioned by the Trust.³⁷
- 1.3.52 Canvas may also have a role in better serving groups where BBC reach is under pressure. Initial interest, and therefore uptake, is likely to be higher among younger consumers from higher socio-economic groups, and somewhat less so among older people, lower socio-economic groups and analogue-only households.³⁸ We recognise, however, that the benefits that accrue to this last group are potentially higher given provisions for access and usability.
- 1.3.53 Whilst any uplift in broadband uptake as a result of Canvas is incremental - our modelling³⁹ suggests an additional 490-870K households over the period under review - late adopters are hard to reach groups⁴⁰ who are typically under-served by the BBC. We therefore see significant value in reaching these groups, which have particular relevance to the delivery by the BBC of its public purposes. Further, we note that even a modest increase in broadband uptake is significant in a world of slower growth.
- 1.3.54 Given that the appeal of Canvas is higher among younger audiences (our research found that those aged 18-34 were more likely to be interested in proposals than older groups), Canvas may also have a role in better serving groups where BBC reach is under pressure.⁴¹

³⁶We also expect that Canvas devices will be bought for use with second sets in households which subscribe to either Sky or Virgin for their main television services.

³⁷ Modelling undertaken by Value Partners for the BBC Trust, 2009.

³⁸ This is consistent with the Executive's own research.

³⁹ Modelling undertaken by Value Partners, 2009.

⁴⁰ Older age groups and/or lower-income households.

⁴¹ Opinion Leader research undertaken for the BBC Trust, November 2009.

1.3.55 We accept, however, that younger audiences tend to be light viewers of linear television and many expect targeted services and thematic channels. Moreover, those under 24 place a high value on mobility and for many, viewing occurs outside the home. More generally, by enabling television delivery of third party targeted content and services, Canvas may appeal to a younger demographic, but this will not, of itself, necessarily give rise to an attendant increase in BBC reach. Taking account of these factors, therefore, it is important not to overstate its ability to increase reach to younger audience groups in the near term.⁴²

1.3.56 Considering consumption of BBC content more generally, we expect Canvas to have a marginal uplift on PSB viewing overall.⁴³ As audiences adapt to IPTV, however, we consider it is reasonable to expect that, over time, Canvas may increase consumption and overall reach of the UK public services.

Will proposals benefit consumers and citizens?

1.3.57 In terms of the impact and broader value of the proposals, several stakeholders suggested that Canvas offer wider societal benefits by, for example, providing an entry-level internet product for vulnerable groups. Access to broadband is a pre-condition for the development and delivery of an increasing range of public services online,⁴⁴ and digital inclusion has become a policy objective, one that is 'not simply a question of economic competitiveness, but also of fairness'⁴⁵.

1.3.58 Given clear consumer demand for its different elements (as set out above), our overall conclusion is one of positive benefit to consumers and citizens.

⁴² We also note the findings of the on-demand PVT, which found that young people tend to cite the content proposition rather than the distribution mechanism as influencing their propensity to view.

⁴³ Modelling undertaken by Value Partners, 2009, as referred to in the MIA.

⁴⁴ DCMS, Digital Britain, Final Report, June 2009.

⁴⁵ BERR and DCMS, *Digital Britain: The Interim Report*, 2009, p.13.

Does Canvas represent a good use of licence fee funds?

- 1.3.59 As part of our assessment, we also considered whether proposals constituted an efficient use of licence fee funds. As set out in further information provided by the Executive, Canvas proposals will cost the BBC £24.7 million over a five-year period. The Trust accepts these revised figures for the purpose of its assessment but is mindful that the proposals involve investment in a new and untested area for the BBC, such that anticipating the exact costs is somewhat difficult.
- 1.3.60 On the basis of the cost figures provided, we consider that the proposals will deliver a cost-efficient way of providing all the benefits delivered by the Canvas proposals to licence fee payers. Our view, therefore, is that they offer the licence fee payer value for money. This value is evident in the context of the proposals, in terms of the overall cost,⁴⁶ in comparison with other BBC offerings.
- 1.3.61 The costs represent a comparatively low proportion of BBC spending on UK public services. The Canvas proposals amount to 0.15 per cent per year of the licence fee (based on four equal share partners), or 19p per licence fee household per year, and so should not significantly affect the provision of existing service activities undertaken by the BBC. Given the relatively low costs of BBC participation, we consider that there would need to be a sizable increase in the total costs for the proposals to no longer constitute value for money.

What will happen in the absence of the Canvas proposals?

- 1.3.62 In assessing public value, we also considered what may happen in the absence of Canvas. Absent its implementation, it seems likely that a number of platforms that enable access to free-to-air, non-linear content will emerge. Less certain is whether an equivalent proposition to Canvas, in terms of public value, will become available in the short to medium term. By this we mean an open, contract-free proposition that provides for: a simple, consistent user interface, that conforms to best practice in terms of accessibility and usability; a rich experience based upon IP technologies, which enables the delivery of a wider range of

⁴⁶ And the cost per user and household.

content and interactive services; a high quality experience with guaranteed service levels and centralised support; and low entry barriers to content providers and third party developers.

Conclusion

- 1.3.63 Our overall conclusion is one of potentially high public value for particular audience groups and medium public value overall. Over time we consider that Canvas may offer the potential for high overall value.
- 1.3.64 We can see clear value accruing from BBC involvement, both to individual licence fee payers and society more broadly. Canvas responds to consumer demand for greater choice and brings with it the benefits of industry collaboration. Proposals fit with and further delivery of the public purposes and wider BBC strategy, which we agree is a logical and necessary step in the evolution of DTT, underpinned by a commitment to preserve the principles of universal, free-to-air access to public service content.
- 1.3.65 By improving access to the full range of BBC services and increasing the scope of the offer on DTT, Canvas makes a significant contribution to the sixth purpose. Proposals also make a lesser – but important – contribution to the first and third purposes of sustaining citizenship and civil society and stimulating creativity and cultural excellence by furthering the media literacy agenda.
- 1.3.66 Quality and distinctiveness is clearly a key area for the delivery of public value. Although further clarification would be helpful in respect of quality assurance, the accessibility and usability of the interface, coupled with non-subscription access to a broad range of content and services and progressive technical standards, demonstrate clear potential value. The extent to which Canvas will contribute to BBC reach is, however, less clear albeit evidence suggests uptake of Canvas devices and potential reach to under-served groups. The quality of Canvas proposals is potentially very high, particularly for vulnerable groups, but ultimately depends on the uptake by these groups of both Canvas devices and broadband, which is less certain in the near term.

- 1.3.67 Given clear consumer demand for its different elements, our overall conclusion is one of positive value by way of benefits to consumers. By evolving the capabilities of DTT, Canvas will enhance the free-to-air offer, helping to ensure parity with alternative platforms and delivering the benefits of greater choice. We recognise that initial take-up is likely to be gradual but over time expect the benefits to consumers and citizens to be more significant; helping to combat the threat of disintermediation; delivering the benefits of new technology to all audience groups and acting as a stimulus for broadband adoption.
- 1.3.68 In conclusion, there is a strong logic and public value to proposals. By fulfilling policy objectives for DTT, Canvas will deliver specific benefits to audiences, enriching the range of available content and services without recourse to a pay-television package, whilst securing greater scale and lower costs through coordination with joint venture partners.
- 1.3.69 In respect of what may happen in the absence of Canvas, whilst we recognise a broad range of initiatives on the DTT platform; it is by no means certain that they will replicate the public value envisaged by proposals.
- 1.3.70 Taking account of these factors and the relatively low overall cost⁴⁷ of proposals, they represent, in our view, an appropriate use of licence fee funds.
- 1.3.71 In light of the assessment set out in this PVA, we consider that there are a number of aspects of the Canvas proposals that are necessary to both safeguard and optimise public value: contract-free access; engagement with industry; the inclusion of accessibility and usability provisions, parental controls and safeguards; customer support; low entry barriers for content and service providers; and sufficient oversight by the Trust as to BBC investment.

⁴⁷ And cost per user.

2. Approach to Assessment

2.1 Introduction

2.1.1 In November 2008, the BBC Executive submitted the Canvas proposals to the Trust for its consideration and determination as to the appropriate approvals process. The Trust considered and agreed with the Executive's view that the proposals represented a 'non-service activity' - that is, they did not have the nature of a service and therefore fell outside the scope of many of the formal requirements expressed in the Agreement.

2.1.2 Non-service activities are a key component of the BBC's activities, the nature and potential significance of which (as envisaged by the Agreement) will vary significantly. The need and extent to which the Trust should undertake an approvals process for non-service activity proposals from the Executive is not specifically set out in the Agreement and therefore falls within the discretion of the Trust. In some instances, non-service activities may be significant and may raise issues of public value and market impact. It is accordingly the responsibility of the Trust to determine the appropriate approvals process and to ensure that principles which underlie the treatment of services are, where relevant and appropriate, applied to non-service activities in a way that it considers appropriate in the circumstances.

2.1.3 Having reviewed the initial proposals from the Executive, the Trust formed the view that the proposals warranted a thorough approval process by the Trust. Although a full public value test was not considered appropriate, the Trust formed the view that a rigorous evidence-based assessment was necessary. Essentially, the Trust considered that the approval process required a Trust assessment of the public value and market impact of the proposals, public consultation and pro-active engagement with key stakeholders. Specifically, the Trust committed to ensuring that its assessment process considered the following:

- the public value created by the proposal

- value for money
- the interests and perspectives of the licence fee payers
- market impact
- risk (financial, operational, reputational)
- compliance with the law and with BBC and Trust policies

2.2 The Canvas approval process

2.2.1 The Trust initiated the non-service approval process on 26 February 2009 by way of publication of a consultation document containing a description of the proposals, which was agreed with the Executive prior to publication. The proposals were subject to public consultation, for 51 days, until 17 April 2009.

2.2.2 The Trust received over 800 submissions from individuals and stakeholders during the initial consultation. A total of 743 of these submissions were from the public.

2.2.3 In order to ensure that the perspectives of licence fee payers were heard, the Trust also liaised with the Audience Councils to inform them of the proposals. Both the Audience Council for Wales and for Northern Ireland subsequently provided the Trust with written submissions.

2.2.4 In addition to consulting with the general public, the Trust Unit actively engaged stakeholders by way of consideration of written stakeholder responses and also through meetings with over 60 stakeholders from a range of sectors in order to gain further insight into their views on the proposals.

2.2.5 On 4 June 2009, the Trust published a summary of the individual consultation responses and all of the non-confidential stakeholder responses. Taking into account responses received during the initial consultation, the Trust considered it appropriate to seek further information from the Executive on the following areas:

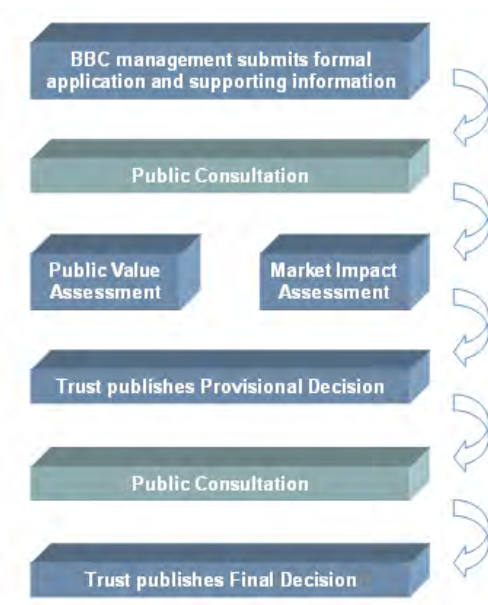
- The choice of technical standards for Canvas
- The way in which the BBC will work with industry bodies
- Control of the electronic programme guide
- Governance arrangements for the joint venture

- The use of editorial controls

2.2.6 The Trust published further information from the Executive on 26 July 2009, providing interested stakeholders with the opportunity (until 1 September 2009) to provide any additional submissions or comments that they wished to make. The Trust received 17 responses from stakeholders. In November 2009, the Executive provided details as to revised governance proposals and updated cost information. This additional material was published by the Trust and made available for stakeholder comment. The Trust received a further six consultation responses from stakeholders.

2.2.7 An outline of the overall process is set out in figure 2.1 below:

Figure 2.1: *Structure of the Canvas assessment process*

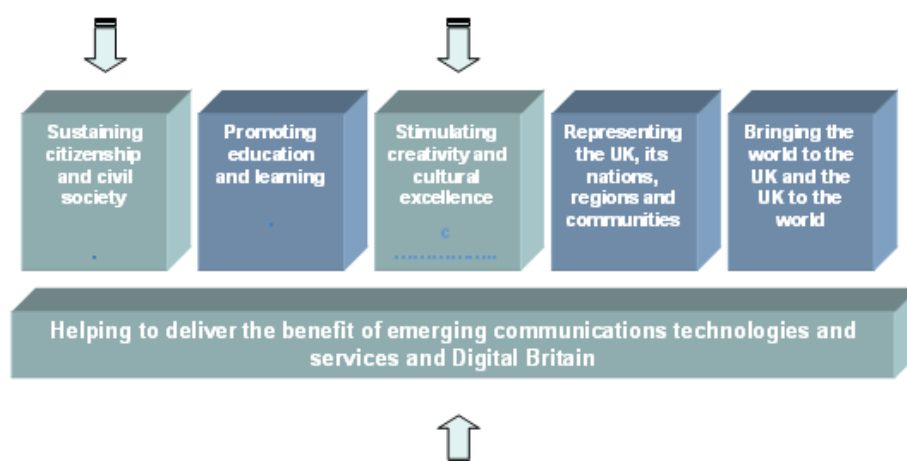


2.3 Approach to this Public Value Assessment

2.3.1 As set out above, the Trust committed to assessing the public value of the Canvas proposals including the value for money of the proposition. This document is the Trust's public value assessment (the PVA). The Trust's market impact assessment (MIA) is published alongside this document.

- 2.3.2 The PVA aims to establish the likely public value of the proposals. As a general approach, public value is primarily assessed over a five-year period; it is invidious to forecast beyond that time given the increasing uncertainty, in scale and scope, of factors that could potentially affect the public value of any proposal. However, in order to recognise the full value of a proposal, factors beyond this period may be taken into account.
- 2.3.3 Although this PVA does not form part of a PVT process under the Agreement, the Trust is mindful of factors ordinarily taken into account when undertaking a PVA as part of the PVT process, and has thereby applied appropriate similar principles in assessing the potential public value of the Canvas proposals.
- 2.3.4 As a starting point for its assessment, the Trust considers the strategic context underpinning the Canvas proposals and whether they fit with and further BBC strategy and the BBC public purposes (sections three and four). It then considers whether the proposals deliver potential public value (section five).
- 2.3.5 The BBC exists to serve the public interest and its main object is the promotion of the public purposes, as set out in the Royal Charter. There are six purposes as illustrated below. Those highlighted have particular relevance for Canvas.

Figure 2.2: *BBC public purposes*



- 2.3.6 The Executive submits that proposals contribute to the delivery of three of these, emerging communications, citizenship and civil society and

sustaining creativity and cultural excellence.⁴⁸ Of these, we consider that the sixth public purpose is the most relevant to our assessment given that Canvas is specifically aimed at delivering the benefits of DTT and Digital Britain. The extent to which proposals contribute to sustaining citizenship and civil society and to stimulating creativity and cultural excellence is less evident, albeit we accept the Executive's position and note that several stakeholders made similar points.

2.3.7 The assessment of whether proposals deliver potential public value is structured around the following four key questions:

- Is there consumer demand for IPTV
- Is there a role for the BBC and what form should this take
- In which ways will BBC involvement deliver value to audiences – taking account of reach, impact, quality and value for money as drivers of public value and;
- What will happen in the absence of Canvas (the counterfactual)?

2.3.8 The following table sets out our general approach to the key drivers of public value:

Table 2.1: Fit with drivers of public value

Criteria	Proposal's fit with the drivers of public value
Reach	Will the proposals reach households and particular audience groups? How far will the proposals extend the reach and consumption of BBC services generally and to particular audience groups?
Quality	Are the proposals of high quality and distinctive?
Impact	Will the proposal create consumer and citizen benefits, for individual licence fee payers and for society as a whole? What value would they place on the proposals once implemented and is this something licence fee payers want?
Value for Money	How much will the proposals cost? Do they represent value for money and are they an appropriate use of licence fee funds?

⁴⁸ Considered in more detail in section four.

2.3.9 Throughout this PVA, we consider 'value' in two dimensions; the public value of BBC involvement in the joint venture and of Canvas more generally. Put another way:

- The public value to licence fee payers of better access to BBC content on DTT and accessibility and usability of the EPG and UI.
- The further benefits to licence fee payers of developing technology, evolving DTT and driving broadband uptake.

2.3.10 In assessing public value, we have also had regard to what might happen in the absence of Canvas - in other words, the counterfactual as presented in section five. Our conclusions and recommendations on the PVA are set out in section six.

2.4 Sources of evidence for this Public Value Assessment

2.4.1 In undertaking our assessment of the public value of proposals, we have drawn on evidence from a variety of sources. A summary of this evidence base is set out below.

The Executive

2.4.2 As set out above, the Executive submitted to the Trust a non-service application in November 2008. Briefly, this comprised:

- Evidence on the public value created by the proposition
- An initial market impact assessment

2.4.3 Our assessment is also based on the further information provided by the Executive, and published by the Trust, as well as drawing on research conducted or commissioned by the Executive, including:

- Free TV, TW concept development of IPTV, Terry Watkins Research, June 2008
- VOD usage and awareness survey, Continental, September 2008
- Conjoint research for the BBC, Human Capital, February 2009
- Encouraging Home Broadband Adoption, Essential Research and Ipsos Mori, October 2009

General Public and Industry Stakeholders

2.4.4 As set out above, we sought representations on public value from the general public and industry stakeholders, through both public consultation and stakeholder meetings. A list of stakeholders and the full text of all the non-confidential consultation responses are published alongside this document.

Trust Unit Analysis and Commissioned Research

2.4.5 Following a preliminary assessment of material submitted by the Executive, we examined the evidence base and historical and strategic context, tested underlying assumptions and requested further detail and clarifications from the Executive as appropriate.

2.4.6 We commissioned Opinion Leader to conduct quantitative and qualitative research into the value of Canvas to licence fee payers and the desirability and benefit of BBC involvement in the joint venture. This consisted of a quantitative phase involving 2,171 interviews with a representative sample of the UK population and a qualitative phase involving 18 in-depth interviews with households spanning a range of socio-demographics as well as different television platforms. We also commissioned Value Partners to undertake modelling work as to the potential update of Canvas.

2.4.7 We also relied on a range of secondary evidence, including, inter alia, Ofcom's review of the Communications market reports, referred to throughout this PVA.

3. Background

3.1 Public Policy context

- 3.1.1 As a starting point, we consider the context within which proposals are framed. Canvas fits within broader policy objectives and development by DCMS of broadband adoption and digital terrestrial television. DTT is the centrepiece of the Government's strategy for achieving switchover and universal, free-to-air delivery of public service broadcasting and the BBC has been invited to take a leading role in the process.⁴⁹ On completion of DSO (expected in 2012),⁵⁰ DTT will be made available throughout the UK. It will offer all viewers a wider choice and variety of content and, at the same time, become the means by which they can access the next generation of free-to-air broadcasting.⁵¹
- 3.1.2 The centrality of DTT to British broadcasting has been recognised in successive decisions by Parliament, the Government and Ofcom. Under the Communications Act, 2003, Parliament gave Ofcom responsibilities for its regulation which were both wider and deeper than for other television platforms, reflecting the role of DTT in making PSB content universally available.⁵²
- 3.1.3 The platform has evolved rapidly, driven by a range of high quality content, and competition between cable and satellite operators. The next stage in its evolution is being shaped by on-demand services and the delivery of video content over broadband. Early evidence suggests strong demand for VOD, particularly when it is free-to-view (advertising

⁴⁹ This is also captured in the BBC's sixth public purpose, to help to deliver to the public the benefit of emerging communications technologies and services and, in addition, taking a leading role in the switchover to digital television.

⁵⁰ Since 2008, analogue channels have been switched off, region by region and replaced with digital television services. This trend will continue until 2012.

⁵¹ High Definition Services on Digital Terrestrial Television, Trust interim statement on BBC non-service application, April 2008.

⁵² The Future of Digital Terrestrial Television: enabling new services for viewers; Ofcom consultation, 21 November 2007, p. 4.

funded) and available on a television (rather than a PC).⁵³ We discuss this further in section 5.

- 3.1.4 The ability to offer a range of interactive services, however, is reliant on the strength of the platform, and DTT, with its limited bandwidth and lack of return path, is poorly served. The platform offers fewer broadcast channels (around 40 compared with 200 from Sky and Virgin) and has limited scope for developing HD services.⁵⁴ Recent developments have seen industry agree on an open standard for a return path, the MHEG interaction channel;⁵⁵ Canvas aims to further develop interactive capabilities, using internet protocol standards to enable access to online services and deliver an easier and richer user experience.⁵⁶
- 3.1.5 Crucially, for licence fee payers, the effect of proposals would be to increase significantly the range of services available on DTT using both broadcast and broadband distribution. Taking advantage of more efficient methods of delivery to improve choice advances the sixth public purpose and contributes to the first⁵⁷ by providing access to a greater range of content and advancing the media literacy agenda. (We discuss this further in section five.). The importance of this area was recognised by the Government in its final report on Digital Britain declaring that, "the ambition to bring together broadcasting and broadband services in a way that will ultimately benefit consumers is laudable."⁵⁸
- 3.1.6 By enabling broadcast and broadband delivery in a single receiving device,⁵⁹ audiences will have access to a broader range of content and services. The contribution of a wide range of commercial, civic and community providers in delivering public service content online was

⁵³ Value Partners, *Harnessing the value of VOD*, 2009.

⁵⁴ Enders, *Canvas drives digital Britain*, 31 July 2009.

⁵⁵ Consumer receiving equipment, based on DBook 6, should be available by early 2010.

⁵⁶ The MHEG interaction channel for broadband is intended to be an 'extended' red button experience, in which IP is used to deepen and enrich the broadcast interactive services as well as enable interactivity with the viewer.

⁵⁷ Of sustaining citizenship and civil society.

⁵⁸ DCMS, *Digital Britain Final Report*, June 2009, p. 140.

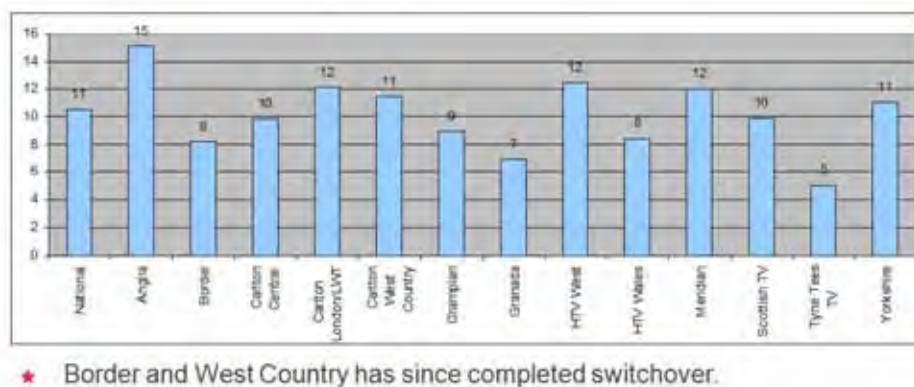
⁵⁹ For example, a set top box.

recognised by Ofcom in its PSB review.⁶⁰ Ofcom also underlined that the importance of ensuring such content was easy to find:

...this expansion of choice can create new challenges as well as opportunities. Audiences report some difficulties with finding and accessing content that meets their needs, both on digital television and online. Not all audiences currently benefit from access to online services, whether by choice or by exclusion. Ensuring easy access to and 'discoverability' of public service content is likely to become increasingly important in a digital age.

3.1.7 As with HD, the Canvas proposals represent a change requiring effective coordination and the development of new consumer-receiving equipment; with DSO underway, timing is also important. Around 14 million households in the UK (53%⁶¹) subscribe to neither digital satellite nor cable. Of these, close to 10 million are DTT homes, and three million are analogue-terrestrial which have yet to switch to digital reception (Figure 3.1).⁶²

Figure 3.1: Analogue percentage by region, Q1, 09



Source: Freeview

3.1.8 Securing universal access to broadband and increasing its take-up is another important element of the sixth public purpose as well as an aim of Government. Access to broadband is a pre-condition for the development and delivery of an increasing range of public services

⁶⁰ PSB review phase 1: the digital opportunity, paragraph 1.8, p.5, Ofcom, 10 April 2008

⁶¹ Based on 26.4 million households at the end of 2008, source: ONS.

⁶² Pay TV Review, phase 3: proposed remedies, p8, 26 June 2009

online,⁶³ and digital inclusion has become a policy objective, one that is 'not simply a question of economic competitiveness, but also of fairness'.⁶⁴ The Government-commissioned Caio Review stressed the importance of broadband both to the quality of life and economic competitiveness.⁶⁵

- 3.1.9 Recent years have seen significant progress; broadband availability stands at 99%; 66% of households have a residential connection⁶⁶ and faster speeds are more widely available but variations in uptake and performance persist. Gaps in current supply are dispersed across the UK, both in rural and urban areas.⁶⁷ In the 2009 Budget, the Government announced that it would 'pursue universal service in broadband, at a speed of two Megabits per second, by no later than 2012.'⁶⁸
- 3.1.10 Whilst universal service will address variations in availability, it will not of itself bring about universal adoption. The difficulty in driving uptake among hard-to-reach groups was highlighted by Ofcom research aimed at understanding obstacles to uptake and identifying possible remedies.⁶⁹ Whilst the majority of those without access either intend to subscribe or would do so with the right financial assistance and support, a significant minority needs 'more creative and personally relevant enticements'.⁷⁰
- 3.1.11 Given that the profile of analogue homes is both older and poorer – 66% are aged 45 and over and 41% are in the DE demographic – and therefore less likely to have broadband access (figure 3.2), Canvas may have a role in driving uptake of broadband among members of this group as switchover advances.

Figure 3.2: *Platform demographics by age and social grade*

⁶³ DCMS, Digital Britain Final Report, June 2009.

⁶⁴ BERR and DCMS, Digital Britain: The Interim Report, 2009, p. 13.

⁶⁵ BERR and DCMS, Digital Britain: The Interim Report, 2009).

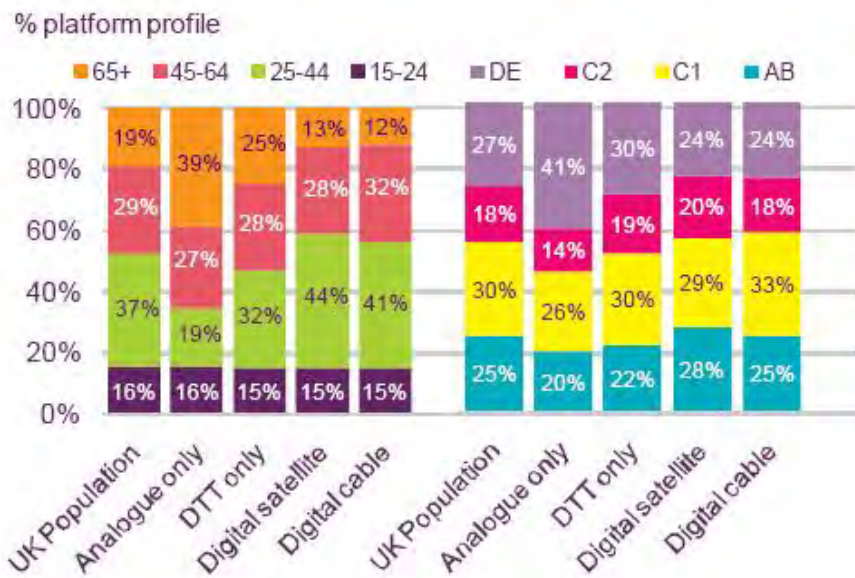
⁶⁶ Based on Value Partner estimates.

⁶⁷ DCMS, Digital Britain Final Report, June 2009, p. 54.

⁶⁸ DCMS, Digital Britain Final Report, June 2009, p. 57.

⁶⁹ Accessing the Internet at Home, a quantitative and qualitative study among people without the internet at home, by Ipsos Mori for Ofcom, 10 June 2009.

⁷⁰ Per footnote 58.



Source: Communications Market Report, 2009, Ofcom, p.142

3.1.12 This general point was made by the Government in its interim report on Digital Britain, which underlined a commitment to ensuring:⁷¹

...public services online are designed for ease of use by the widest range of citizens, taking advantage of the widespread uptake of broadband to offer an improved customer experience and encourage the shift to online channels. This demands affordable, reliable and easy to use IPTV boxes, particularly relevant to those households currently without a PC.

3.1.13 The Government invited the BBC 'to play a leading role in the process, just as it has in digital broadcasting, through marketing, cross-promotion and provision of content to drive interest in taking up broadband. Alongside other public service organisations, the BBC can drive the development of platforms with open standards available to all content providers and device manufacturers alike.'⁷²

3.1.14 Having considered the DMCS public policy framework, the suggested role for the BBC and broadband uptake, we now examine the broader external environment within which proposals sit.

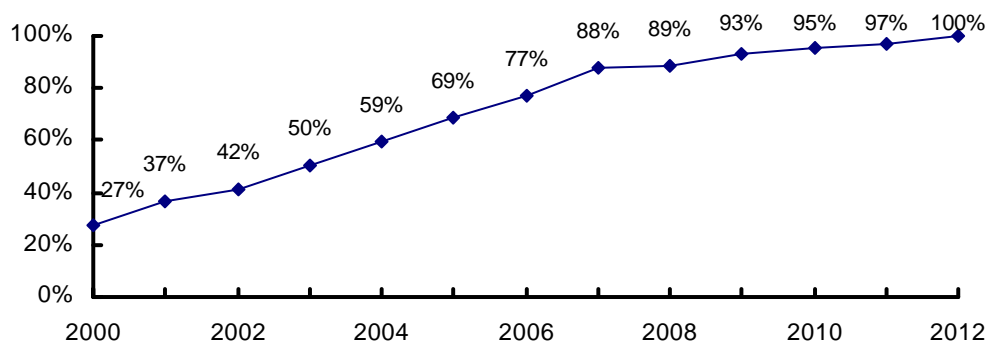
⁷¹ BERR and DCMS, Digital Britain: The Interim Report (2009), action 21.

⁷² DCMS, Digital Britain Final Report, June 2009, action 20, p. 234.

3.2 External context

3.2.1 UK broadcasting is undergoing a period of intense change; convergence⁷³ is accelerating; technology enabling more for less; whilst broadband penetration and PVRs are transferring choice and control to the user. Between 2000 and 2009, residential broadband connections grew from 0.2% to 67% whilst digital television penetration reached 93% over the same period (Figure 3.3).⁷⁴

Figure 3.3: *Digital television penetration, 2001-12, % of television HHs*



Source: Ofcom, Screen Digest

3.2.2 A growth in channels and choice, initially driven by demand for pay television services, has more recently been sustained by the transition of households from analogue to digital services as switch-over advances. Widespread uptake of broadband, meanwhile, is shaping audience expectations; broadcasters are experiencing rapid growth in demand for catch-up services, which in turn is creating focus on free-to-view, universal delivery.

3.2.3 Faster internet speeds and improved performance have broadened the appeal of video over the internet; 23% of adults with internet access claim that someone in their household watches online catch-up

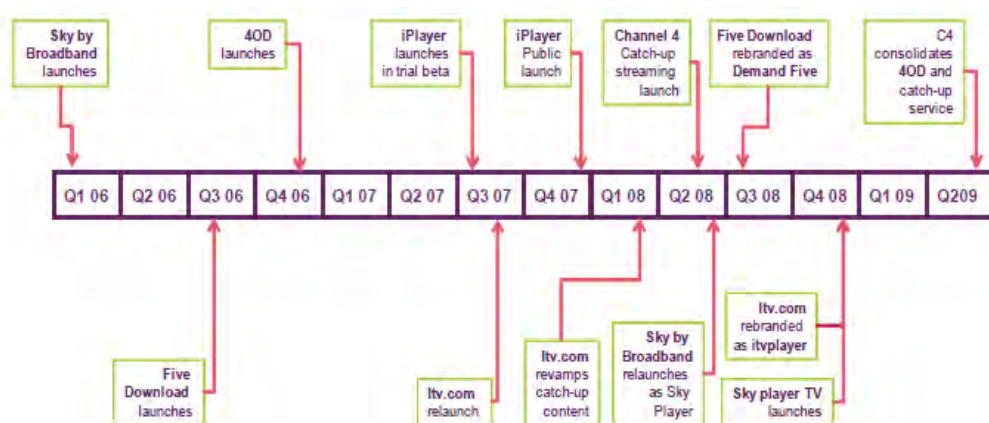
⁷³ Convergence is the tendency for different technologies to evolve toward performing similar tasks, for example, watching programmes on a mobile device.

⁷⁴ Over two thirds (18 million) of the country's homes receive digital television and radio services from Freeview, source: Freeview submission to the second BBC Trust consultation on project Canvas.

television, among those aged 15-24, this rises to 33%.⁷⁵ The popularity of the internet-only broadcast of England's international football match against Ukraine in October 2009 prompted analysts at Forrester to predict that more than two thirds of Britons will be watching television over the internet by 2014.⁷⁶

3.2.4 Technological developments are disrupting established business models and increasing competition for revenues and audiences. As audiences fragment, it has become harder for traditional broadcasters to sustain share and support concentration of investment. Television advertising, the primary source of revenue, has fallen. In 2008, it stood at £3.820bn, down 5.1% on 2007. Further reductions are expected in 2009,⁷⁷ fuelled by a combination of cyclical and structural change. In a bid to maintain share and generate new revenues, broadcasters have explored alternative distribution channels. Many now offer a selection of their schedules online, ranging from seven-day catch-up to archive material (Figure 3.4).

Figure 3.4: Timeline of major online catch-up television launches



Source: Ofcom, Communications Market Report, 2009, p.266

3.2.5 Early offerings focused on PC delivery: in 2006, Channel 4, Five and Sky launched video on-demand services, followed in 2007 by the BBC iPlayer and a re-launched itv.com. Whilst use of BBC iPlayer has grown steadily,

⁷⁵ Ofcom, The Communications Market Report, 6 August 2009, p. 267.

⁷⁶ Daily Telegraph (Business), 4 October 2009.

⁷⁷ According to data from the Advertising Association, as quoted in Ofcom's Public Service Broadcasting Annual Report, 2009, p. 28.

it was the 2008 launch of iPlayer on the Virgin Media platform that confirmed the appeal of a television-based offering. Virgin Media generates around 30% of all iPlayer requests yet accounts for only 22% of residential broadband connections.⁷⁸

3.2.6 Consumers regard viewing via the television as significantly more appealing than via the PC.⁷⁹ Early evidence suggests that many online video services take off only when they move beyond the PC;⁸⁰ 4oD achieves five million monthly viewers compared with two million on its PC catch-up service. The popularity of a television-based offering was reinforced by quantitative research by Continental in 2008 which found that 81% of Virgin subscribers who watch VOD content prefer watching programmes on television rather than on the PC.⁸¹

3.2.7 The UK market for IPTV is less advanced than that elsewhere.⁸² Although relatively nascent, it is characterised by numerous service providers, equipment manufacturers and aggregators. Whilst access to on-demand content delivered via television is currently overwhelmingly provided by pay platform operators such as Virgin Media and BSkyB, new services are emerging which enable 'over the top' delivery via television. FreeSat plans to launch an iPlayer and ITV player service in 2010.⁸³ Freeview will follow with its HD-ready, IP-connected devices and Fetch TV has launched a hybrid DTT set top box which enables access to broadcast and video on-demand content.⁸⁴

3.2.8 Content has emerged as a critical factor in a competitive landscape. Consumer electronics manufacturers have identified audio-visual content as a driver of retail sales and a number are evolving their platforms to support catch-up services. Many are becoming aggregators

⁷⁸ Ofcom, The Communications Market Report, 6 August 2009, p. 267; UK Broadband and Telephony Market Statistics, Q2 2009, Enders Analysis.

⁷⁹ Opinion Leader research undertaken for the BBC Trust, November 2009.

⁸⁰ Screen Digest, The Future of Online Media Distribution, October 2009.

⁸¹ Continental, Channel 4 and BBC, VOD usage and awareness survey, September 2008.

⁸² For a more detailed analysis refer to the MIA.

⁸³ A beta version of iPlayer is expected to be available starting December 2009; Freesat has also confirmed that ITV Player, the catch-up service from ITV, will join the platform in 2010, Source Broadband TV News, November 2009.

⁸⁴ The IP Vision Smart Box combines a VOD service, Freeview tuner and PVR.

of competing video services. Sony, Samsung and Panasonic, for example, have all launched content offerings for Ethernet-enabled television sets.

3.2.9 Despite evidence of demand,⁸⁵ VOD is a fledgling market and many analysts remain cautious as to its near-term potential.⁸⁶ As recently as 2009, for example, Enders Analysis has observed:

*We remain sceptical about the audience potential of VOD services over the next five to ten years, we note that (a) it took the better part of 10 years before PVR growth exploded into life and (b) the actual growth rates and longer term prospects of internet video viewing will depend hugely on the design of future navigation and search.*⁸⁷

3.2.10 A number of commercial and technical hurdles have yet to be overcome. Access to the internet is not universal. Whilst broadband availability has reached 99% and faster connection speeds are more widely available, variations in uptake persist.⁸⁸ Three in 10 UK adults do not have internet access at home,⁸⁹ for low-income households in particular, the combined cost of a broadband connection and PC equipment may put the internet beyond their means.⁹⁰

3.2.11 Consumer-receiving equipment that will allow delivery of both linear and on-demand content to a single device needs to be both widely available and affordable, which will depend on the achievement of sufficient scale. Audience expectations of quality are likely to be much higher when viewing on television than on a PC,⁹¹ thereby requiring improvements to the delivery of content over the internet.⁹² Distribution

⁸⁵ Such as that provided by the popularity of iPlayer on the Virgin platform.

⁸⁶ Further analysis of relevant markets is set out in the MIA.

⁸⁷ Enders, Canvas 'drive digital Britain', 31 July 2009.

⁸⁸ Ofcom, The Communications Market 2007, Nations & Regions, p.167-171.

⁸⁹ Aged 15 and above, Accessing the Internet at Home, a quantitative and qualitative study among people without the internet at home, by Ipsos Mori for Ofcom, 10 June 2009.

⁹⁰ Accessing the Internet at Home, a quantitative and qualitative study among people without the internet at home, by Ipsos Mori for Ofcom, 10 June 2009.

⁹¹ A number of stakeholders made this point, including Broadband Stakeholder Group in its submission to the Trust's consultation on proposals.

⁹² Through, for example, increased broadband speeds and advancements in compression and buffering technologies, Harnessing the value of VOD, Value Partners, 2009.

costs for broadcasters and content providers, meanwhile, are likely to rise⁹³ and economic models, such as subscription, advertising-funded and pay-per-view, have yet to be fully tested.⁹⁴

3.2.12 Recent developments are focused on these areas. Infrastructure providers, such as Akami and BT are deploying content delivery networks to improve internet delivery,⁹⁵ whilst platform operators are experimenting with targeted advertising.⁹⁶ Virgin Media is deploying a new 50Mbps broadband service across its network and BT is set to follow with a £1.5bn investment in new fibre to the cabinet technology.⁹⁷

3.2.13 Having examined both the broader public policy environment and external context, we consider, in the section that follows, the extent to which proposals fit with and further BBC strategic objects.

⁹³ Unlike broadcast transmission costs, which are fixed, IP delivery costs are variable and increase with usage.

⁹⁴ Value Partners, *Harnessing the value of VOD*, 2009.

⁹⁵ Value Partners, *Harnessing the value of VOD*, 2009.

⁹⁶ There is early experimentation with inserting advertising in VOD streams – Virgin is testing this with John Lewis, Royal Mail and Kelloggs, and Sky is developing the capability to insert targeted, un-skippable advertising.

into video delivered via its PVRs, Value Partners, *Harnessing the value of VOD*, 2009.

⁹⁷ To upgrade parts of its network.

4. Fit with BBC Strategy

4.1 Introduction

4.1.1 A growing appetite for on-demand content and a commitment to future-proof the DTT platform provide the Executive's strategic rationale for proposals. The Executive submits that Canvas represents a logical and necessary step in the evolution of DTT and that its launch would strengthen the platform by ensuring universal access to public service content:

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 [it] maintains a direct relationship with its audiences, regardless of their ability or willingness to pay for television services.⁹⁸

4.1.2 We agree that these are important objects, but can see further wider benefits to proposals and a clear link to the public purposes. DTT is the centrepiece of Government plans for switchover.⁹⁹ It must therefore form part of BBC strategy to support DTT and make its content available on such platforms. This is consistent with clauses 12 and 35 of the Framework Agreement, which respectively place a duty on the BBC to:

- Make the UK public services widely available in a range of convenient and cost effective ways
- Ensure that substantially the same proportion of UK households that receive analogue television services can receive all of the BBC's principal television services in digital form

⁹⁸ BBC Non service application.

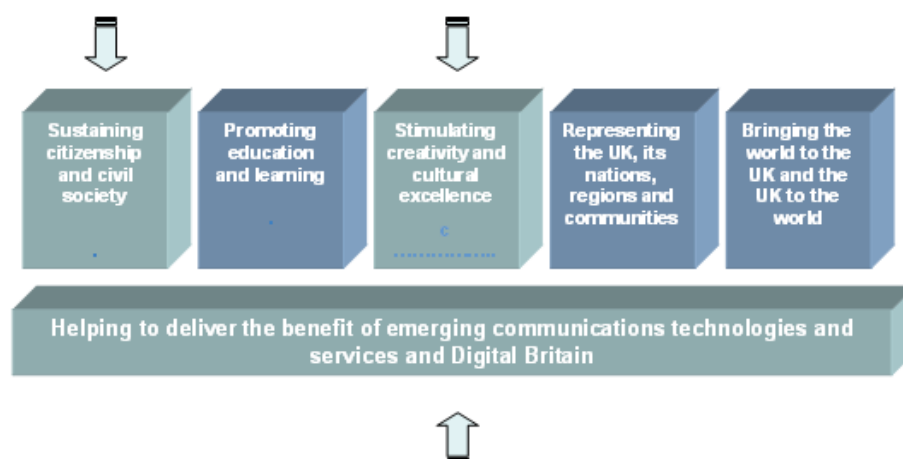
⁹⁹ Without prejudice to other platforms that consumers may choose for themselves.

4.1.3 Access to BBC services in a technologically changing environment is a key strategic driver, related directly to clause 12 of the Agreement, which places an obligation on the BBC to make its UK public services widely available:¹⁰⁰

The BBC must do all that is reasonably practicable to ensure that viewers, listeners and other users...are able to access the UK Public Services that are intended for them, or elements of their content, in a range of convenient and cost effective ways which are available or might become available in the future. These could include (for example) broadcasting, streaming or making content available on-demand, whether by terrestrial, satellite, cable or broadband networks (fixed or wireless) or via the internet.

4.1.4 Related to this, the Charter also places a duty on the BBC, in delivering its other purposes, to help deliver to the public the benefit of emerging communication technologies and services (the sixth public purpose, 'helping to deliver digital Britain', Figure 4.1).

Figure 4.1: UK public purposes



4.1.5 We recognise that the BBC must do all that is reasonably practicable to ensure that its audiences are able to access services in a range of convenient and cost effective ways.¹⁰¹ In support of the sixth purpose, as set out in its remit (and specifically related to Canvas), the BBC has a duty to:

¹⁰⁰ Framework Agreement, clause 12.

¹⁰¹ Consistent with the principle of universality.

- Make engaging digital content and services available on a wide range of digital platforms and devices
- Work in partnership with other organisations to help all audiences understand and adopt emerging communications technologies and services¹⁰²

4.1.6 The provision of Canvas was found to be consistent with all of the public purposes, particularly the sixth, by participants in our qualitative research and many felt it was both legitimate and appropriate that the BBC had a role to play.¹⁰³ This general view was also reflected in our public consultation, in which 67% of respondents believed Canvas would contribute to the sixth purpose.¹⁰⁴ One noted:

...it does achieve the sixth purpose; even elderly people do need to be helped into the 'digital age' and those who are less well off, in fact I would argue even more so, or they are in danger of being left behind...We all want a fairer society where no one is excluded and this includes any new technologies as they become available. The BBC should play a fundamental role in all of this enabling for everyone.

4.1.7 Others made the point that any contribution to the public purposes was contingent on Canvas being available nationwide (in respect of broadband delivery and network capacity).

4.1.8 We also note the findings of 2009 audience research by the Trust into perceptions of BBC performance in delivering its public purposes.¹⁰⁵ Whilst considered somewhat less important to licence fee payers than other areas, performance scores for the digital purpose tend to be lower for older age groups and lower social grades. Scores may be influenced by availability of and interest in using new technologies. It is important

¹⁰² The BBC should work with other UK bodies to end the 'digital divide' between those who enjoy the benefits of digital technologies and those outside that group, BBC Trust Public Purpose Remit, Emerging Communications, December 2007.

¹⁰³ Opinion Leader research undertaken for the BBC Trust, November 2009.

¹⁰⁴ Around two thirds of the individual respondents to the initial public consultation consider that the Canvas proposals would contribute to the BBC's public purpose of helping to deliver digital Britain.

¹⁰⁵ BBC Trust, Purpose Remit Tracking Survey, July 2009.

therefore, that the BBC improves its performance by helping to ensure the relevance of new technologies to all audience groups. We can see a clear potential role for Canvas in this respect.

- 4.1.9 Proposals also make a lesser but important contribution to the first and third purposes of sustaining citizenship and civil society and stimulating creativity and cultural excellence, furthering the media literacy agenda, supporting specific commitments to building digital Britain, broadening access to the DTT platform and enabling the delivery of a range of content and services.
- 4.1.10 More generally, the manner in which Canvas is delivered, via a joint venture partnership, will help to advance other important strategic objects. In undertaking Canvas through a joint venture arrangement, the BBC also effectively seeks to create value through partnerships.
- 4.1.11 The BBC has historically played a central role in the development of broadcasting standards and technologies, accelerating the acceptance of new services and platforms, from Teletext and NICAM stereo sound to DAB, HD and catch-up, and delivering their benefits to audiences and industry. Several stakeholders recognised that the BBC could help both coordinate and accelerate the adoption of IPTV, one, Arqiva, noted:

Given the key role that the BBC has played in developing the underlying technology for digital television; its unique position as a trusted guide to new technology; and its position as the producer and commissioner of the majority of high quality UK-originated content; the BBC should be at the centre of the next development of free-to-air TV platforms through its proposed investment in Canvas.

- 4.1.12 Freeview and Freesat likewise demonstrate how the BBC can play a leading role, enabling the market to develop in a competitive manner, and supporting the wider broadcasting ecology. Research by the BBC found that its campaigns associated with DSO, 'stimulated interest in digital television generically, and [reduced] levels of resistance'. BBC

involvement was found, more generally, to help 'tackle confusion in the marketplace.'¹⁰⁶

4.1.13 In the remainder of this section, we examine more closely the strategic objectives and importance of evolving the DTT platform and of the BBC maintaining a direct relationship with its audience.

4.2 Evolution of the DTT platform

4.2.1 Consistent with our approvals of the On-Demand proposals in April 2007 and HDTV the following November, we agree that the BBC must maintain the appeal and relevance of its output as a precondition for the effective delivery of its public purposes. In order to protect the interests of licence fee payers and secure the continued relevance of DTT, therefore, it needs to evolve the free offer.

4.2.2 Canvas helps to sustain the platform, safeguarding delivery by the BBC of its public purposes and bringing wider benefits to other industries through its broader R&D contribution.¹⁰⁷ By proposing low barriers to entry, it also aims to further strengthen the platform and ensure its continued relevance by delivering a wider range of content and services. (We return to this point in section five.)

4.2.3 The Trust acknowledges the importance of DTT, both from an audience and a public policy perspective. We also recognise that it currently delivers a higher viewing share for BBC programmes relative to other platforms, such as cable and satellite (Table 4.1).

Table 4.1: Viewing share for PSB channels by platform¹⁰⁸

% share of viewing 2008-09	All platforms	Freeview	Cable/Satellite
Terrestrials (including C4 + 1)	60.7	63.4	47.8

¹⁰⁶ Progress towards achieving digital switchover: a BBC report to the Government, p. 20.

¹⁰⁷ As with previous broadcasting technologies.

¹⁰⁸ Source BARB. Terrestrials: BBC One, BBC Two, ITV1, Channel 4 (including + 1), Five, S4C
PSBs (strict): those defined as PSB channels by Ofcom: BBC One, BBC Two, BBC Three, BBC Four, CBeebies, CBBC, BBC News, BBC Parliament, BBC HD, ITV1, Channel 4 (including 1) and Five PSBs and portfolios: all of the above channels, with their spins offs, including ITV2, ITV3, ITV4, E4, More4, Film Four, Fiver, Five US and their +1s.

PSBs without portfolio channels	64.7	68.6	51.3
PSBs with portfolio channels	73.9	80.7	59.3

4.2.4 Securing the future of the DTT platform is therefore important, as recognised by Ofcom during its DTT review in 2007:

DTT will become the means by which we can ensure that viewers have ready access, free-to-air to Public Service Broadcasting.

The DTT platform will therefore have a critical role in ensuring the delivery of high quality television to the people of the UK. This is a role reflected in successive decisions by Parliament, the Government and Ofcom.¹⁰⁹

4.2.5 The Executive submits that free-to-air television should maintain parity with pay alternatives and that access to on-demand services should not be confined to those who are willing and able to subscribe to pay television. We accept this, as do several stakeholders.

4.2.6 Given that the combined audience share of the five terrestrial channels drops from 63% on Freeview to 48% on cable and satellite, the outlook for PSBs¹¹⁰ is linked to the ability of DTT to provide an attractive, subscription-free alternative to pay platforms.

4.2.7 With a commitment to invest around £1.8 billion of licence fee money in DTT,¹¹¹ the BBC has a broader legitimate interest in securing its long-term future. A public policy commitment to the platform by Government, meanwhile, has seen the industry and consumers invest significant sums in transmission infrastructure and receivers.

4.2.8 The next stage in its evolution is being shaped by on-demand services and the delivery of video content over broadband. Clear consumer

¹⁰⁹ Ofcom, The Future of Digital Terrestrial Television, 21 November 2007, paragraphs 1.4 and 1.5.

¹¹⁰ In terms of maintaining viewing share.

¹¹¹ BBC has procured high-powered digital services from Arqiva through a competitively-let contract worth approximately £1.8 billion over 25 years (including inflation), The BBC's Preparedness for Digital Switchover, NAO, 2007.

interest first emerged in 2008, following the launch of a number of major online broadcaster catch-up services. Despite growing demand, however, widespread acceptance of VOD services is likely to emerge only when they are available on television, as evidenced by the 2008 launch of iPlayer on Virgin Media. The platform generates around 30% of all requests yet accounts for only 22% of residential broadband connections.¹¹²

4.2.9 We found evidence of consumer demand for a television-based offering – over three quarters of those surveyed (78%) were interested in catch-up on television, with one third (34%) stating they were 'very interested'.¹¹³ Further, respondents to the Trust's initial public consultation on the Canvas proposals generally agree that it is important that the BBC improve access to its on-demand and online video content in the run up to digital switchover and the launch of terrestrial HD television. Most respondents also believe that Canvas will improve access to on-demand and online video content, particularly given a free-to-air option.¹¹⁴ For many, the television simply represents a more natural viewing environment.

4.2.10 Although use of television VOD is still quite low, we recognise its potential in better serving DTT homes. An integrated offering, as envisaged under proposals, based upon viewer familiarity and delivered via the television set, may find favour with a broad demographic (we consider this point further in section five). Having invested heavily in the DTT platform, it is a logical place to start. Such a move may enable the R&D contribution of the BBC to benefit the broadcasting industry and further the partnerships agenda with a sustainable proposal that leverages the cornerstone role played by the BBC in broadcasting.¹¹⁵

¹¹² Ofcom, The Communications Market Report, 6 August 2009, p.267; UK Broadband and Telephony Market Statistics, Q2 2009, Enders Analysis, Virgin Media has 3.7 million subscribers (22% of all broadband households), around 17 million UK households (65%) have a fixed broadband connection.

¹¹³ Opinion Leader research undertaken for the BBC Trust, November 2009.

¹¹⁴ Public Knowledge, Summary of Responses to the Public Consultation, page 9.

¹¹⁵ In June 2008 the BBC Trust challenged the BBC Executive to develop a range of potential partnerships designed to build value for public service broadcasting in the UK. The Trust believes the BBC has a real role to play in delivering innovative solutions to the problems facing PSB.

4.2.11 By broadening access to on-demand services, Canvas may deepen appreciation of BBC content and services and help PSBs to sustain presence and significance in a world of unlimited content.¹¹⁶ BBC involvement in Canvas may also help to increase reach to its services.¹¹⁷ In the near-term, however, we expect any uplift to be marginal, as discussed in section five. A similar point was made by several stakeholders, including Ofcom, which set out its initial response to proposals in a letter to the Trust:¹¹⁸

*We believe that Canvas has the potential to be an exciting and innovative proposition which could offer a number of consumer benefits. In particular we recognise that Canvas could improve the reach and availability of public service content.*¹¹⁹

4.2.12 Some stakeholders have argued that the need to safeguard the future of DTT is important but should not be overstated in near term. With a different value proposition from cable and satellite, they maintain that DTT does not have to offer a comparable range of services.

4.2.13 Others suggest that, whilst the BBC has certain specific duties in relation to the development of DTT, these do not extend to the type of intervention outlined under proposals. One, Sky, did not consider it necessary for the BBC to enter into a joint venture to achieve its stated objectives, noting that 'the BBC's primary purpose is to create public service content and to distribute it as widely as possible, without discrimination as to their chosen means of delivery.'¹²⁰ Others were concerned that Canvas may encourage PSB members of the joint venture to deny or frustrate syndication of their content to third parties.

¹¹⁶ Thereby supporting the BBC's partnership agenda.

¹¹⁷ In its application, the Executive stated that this benefit 'arises because ...proposals generate a more robust competitive position for the UK TV platforms on which the BBC's linear services have higher reach and share'.

¹¹⁸ Letter from Peter Phillips, Ofcom, to Nicholas Kroll, BBC Trust on Canvas proposals, 17 April 2009.

¹¹⁹ Ofcom also raised points as regards implementation, which have been taken into account (referred to in the MIA).

¹²⁰ BSkyB's response to BBC Trust consultation on Canvas proposals.

- 4.2.14 We agree that the impact of intervention should not be overstated in the short term, but consider that the inclusion of on-demand services (and other internet content) on DTT will be integral to securing the platform's viability over time. Several stakeholders, including Arqiva, also made the point that inter-platform competition is critical to the development of the UK's broadcasting ecology. We also recognise that any expansion of the platform's capabilities must sit alongside a robust BBC syndication policy.
- 4.2.15 Our assessment of the proposals therefore needs to take account of the need for DTT to remain relevant to consumers. In the same way that Freeview provides competition to pay operators and helps to sustain a thriving broadcast ecology, co-operation among joint venture partners on the development of IPTV standards may help to safeguard the future of DTT and combat the threat of disintermediation, as discussed below.

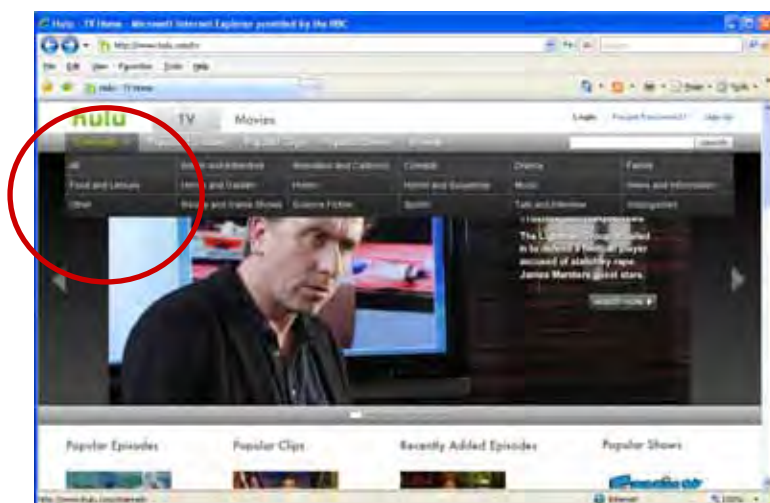
4.3 Maintaining a direct relationship with audiences

- 4.3.1 We accept that alternative modes of delivery are likely to fragment (or disintermediate¹²¹) the provision of content over time. Such a development may be positive allowing choice and flexibility of access. However, we also recognise that there is value in having certainty as to points of access for free-to-air content, including that of the BBC, particularly on DTT. We therefore consider that it benefits licence fee payers for the BBC to maintain a direct role in platform provision and innovation.
- 4.3.2 More fundamentally, the delivery of the purposes and the creation of public value are contingent on direct engagement with licence fee payers, to ensure that access to BBC output continues to meet their changing needs and expectations. The launch of iPlayer demonstrates the value to the BBC of maintaining this relationship, establishing control over the presentation of BBC content and influencing the user experience in a way that aids navigation and benefits audiences.

¹²¹ Disintermediation is an economics term, relating to the removal of intermediaries from the supply chain. In the case of broadcasting, it allows aggregators to offer content directly to consumers or viewers, thereby breaking or weakening the relationship between broadcasters and their audiences.

- 4.3.3 Canvas may also have a role to play in preventing or slowing disintermediation, or at least preserving the DTT platform as a point of access for free-to-air content. In pursuit of scale, several broadcasters have entered into agreements with aggregators and service providers to bring VOD offerings to a wider (and generally younger) audience. The BBC syndicates its content to both platform providers, such as PS3, Nintendo Wii and iPhone, and website aggregators, such as YouTube;¹²² commercial PSBs pursue similar strategies. In pursuit of scale, however, broadcasters may have to forfeit a degree of control over how their content is categorised and presented.
- 4.3.4 This loss of control may also extend to technological innovation, development, and the capabilities of the interface. Visitors to Hulu,¹²³ a US video website, for example, search for content by genre, thus decoupling the brand from the product or programme (Figure 4.2).

Figure 4.2: US video content website Hulu



¹²² The BBC syndicates its content widely, examples provided are not exhaustive.

¹²³ Hulu is a joint venture between NBC Universal and News Corporation, free ad-funded service. The site attracted over 457 million views in July, according to ComScore, making it the fourth most-watched video site. http://www.deloitte.com/view/en_US/us/Insights/hot-topics/2009-Industry_Outlook/article/a5391ec6f6001210VgnVCM100000ba42f00aRCRD.htm

- 4.3.5 We recognise that disintermediation may be a more significant issue in an on-demand world. Third parties to whom the BBC may syndicate may have the capability or the incentive to alter the fundamental characteristics of a BBC service and the selection and arrangement of its content.¹²⁴
- 4.3.6 BBC research suggests that audiences tend to gravitate to sites where the broadest range of content is available. Over time, syndication may therefore become the primary route of reaching certain groups, potentially severing the direct relationship the BBC has developed with its audience.
- 4.3.7 This is particularly relevant when considering the importance of brand in the battleground for younger viewers, thereby ensuring a 'return path' to PSB content as they mature. Aggregators such as Hulu tend to target a younger demographic,¹²⁵ many of whom may come to associate the aggregator rather than the originator with the programmes they watch. A search for Monty Python clips on YouTube, for example, uncovers over 50,000 clips, but few of these attribute the BBC (Figure 4.3).¹²⁶

Figure 4.3: *BBC Monty Python clips on YouTube*

¹²⁴ A similar point was made by the Executive in its application, that many platforms to which the BBC syndicates do not enable editorial flexibility or rich interactivity (i.e. as the BBC enjoys on the web).

¹²⁵ Such as 'generation Y', comprising mainly individuals in their twenties, born between 1977 and 1995, technologically literate, highly individualistic, and advertising-adverse.

¹²⁶ The YouTube channel was an attempt to avoid this decoupling but most viewers avoid the channels and go straight to the content.



- 4.3.8 We accept, therefore, that, absent Canvas, there is a credible risk that third parties may appropriate more of the value from syndicated content over time.¹²⁷ Given the appeal of Canvas is higher among younger audiences (our research found that those aged 18-34 were more likely to be interested in proposals than older audiences),¹²⁸ Canvas may have a role to play in maintaining reach and relevance to this group (we return to this area in section five).
- 4.3.9 That is not to say that we do not recognise both the value of syndication and the duties of the BBC to make its content available. The Trust generally considers that there is public value in syndication and encourages the Executive to make content available as widely as possible.¹²⁹ Rather, we recognise the risks of there being no primary route to free-to-air on-demand content that is easily understood and accessible to all audience groups.¹³⁰
- 4.3.10 In conclusion, proposals both fit with and further the public purposes, evolving the DTT platform and helping to maintain a direct relationship with audiences. We recognise, however, that whilst Canvas may help to combat disintermediation, it will not eliminate it. More generally, it appears likely that the UK will continue to rely on terrestrial

¹²⁷ As aggregators build a user base and develop a strong brand and presence, their reliance on content providers is reduced, the experience of US broadcasters suggests this poses a credible threat.

¹²⁸ Opinion Leader research undertaken for the BBC Trust, November 2009.

¹²⁹ Trust On-Demand Syndication Policy, available on the Trust's website.

¹³⁰ The Executive maintains, in its Non service application, that Canvas would be seen as a complement, rather than as a substitute to syndication on pay platforms.

broadcasting predominantly; proposals therefore support Government policy and respond to audience expectations.

4.3.11 Having examined the fit with BBC strategy, we now consider, in the section that follows, the extent to which Canvas will deliver value, both to licence fee payers and to society as a whole.

5. The BBC Trust's Assessment

5.1 Introduction

5.1.1 The BBC exists to serve the public interest and its main object is the promotion of the public purposes. The extent to which proposals will ultimately generate value rests, therefore, on their ability to advance the purposes (as considered at section four).

5.1.2 Our assessment of the public value of the proposals is structured around four key questions:

- Is there consumer demand for IPTV?
- Is there a role for the BBC and what form should this take?
- In which ways will BBC involvement deliver value to audiences – taking account of reach, impact, quality and value for money?
- What will happen in the absence of Canvas (the counterfactual)?

5.1.3 In order to assess the likely public value, we need to understand audience expectations. As a starting point, therefore, we examine consumer demand for, and benefits of, the Canvas offering.

5.2 Is there consumer demand for IPTV?

5.2.1 Estimating demand is somewhat speculative, with a number of complicating factors at play. Uncertainty increases where the product is new to the market, as with Canvas; external forces are complex, demand uncertain, awareness low and pricing complicated.

5.2.2 Despite this, our research uncovered clear interest in proposals. We found evidence of demand for a wide range of content and a willingness to pay (as discussed further below). Audiences expect a high degree of functionality¹³¹ which, in turn, is shaping consumption habits, whilst a growth in residential broadband connections – to 66% of UK households – has accelerated acceptance of new consumer propositions.

¹³¹ In accessing content.

5.2.3 Bringing iPlayer to the television is a strong pull.¹³² An integrated offering employing a consistent user interface, and offering catch-up, PVR and HD capabilities, found favour with a broad demographic (Figure 5.1). Our audience research found significant interest in Canvas and broad support for BBC involvement (although many noted that this should not come at the expense of its core programme-making remit).¹³³ In quantitative research, 61% of the respondents was interested in Canvas,¹³⁴ (a slightly higher proportion of respondents to the public consultation), while 81% agreed that proposals were 'attractive from a consumer point of view'.¹³⁵ The subscription free element was particularly valued, and several respondents underlined the importance of a vibrant, competitive alternative to pay-television services. One noted, 'it is critical to ensure there is choice ... and I believe this proposal will help.'

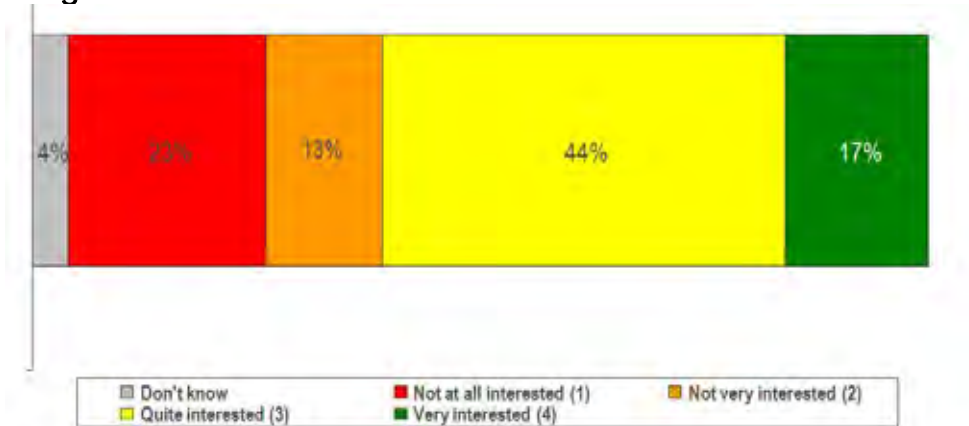
¹³² Research for the Trust found that 78% of those surveyed were interested in catch-up television via the internet, with 34% stating they were very interested. Opinion Leader research undertaken for the BBC Trust, November 2009.

¹³³ For example, an individual respondent noted that Canvas was an attractive proposition 'in terms of simplifying the mechanism for watching on-demand content on a standard television'.

¹³⁴ Opinion Leader research undertaken for the BBC Trust, November 2009.

¹³⁵ Per the findings from BBC Trust public consultation on Canvas proposals, 81% agreed in principle that proposals were attractive from a consumer point of view. There were some reservations, based particularly on cost, regarding the need for better broadband services and an additional set-top box.

Figure 5.1: *interest in Canvas*



Q7. Overall, how interested or not interested would you be in using a product with these features if it was available?
BASE: 2171 (all)

Opinion Leader, November 2009

- 5.2.4 In the qualitative research, interest sometimes waned on further consideration given most features are readily available elsewhere.¹³⁶ The availability of comparable features was also raised by several respondents:

They're not offering anything that we don't have one way or another.

Social grade A, with broadband, Sky basic package, pre-school children, London

- 5.2.5 This is particularly important when considering the delta between Canvas and the counterfactual, in which internet-enabled digital television devices are launched, offering access to on-demand content.
- 5.2.6 In general, interest tended to be higher among younger consumers from higher socio-economic groups (those in broadband households with multichannel television) and somewhat less so among older people, lower socio-economic groups and analogue-only homes.¹³⁷ We recognise however, that the benefits that accrue to this last group are

¹³⁶ Consumers already have access to HD ready sets, Freeview+ allows users to pause, record and rewind 'live TV', whilst PC users can access BBC iPlayer.

¹³⁷ This is consistent with the Executive's own research.

potentially higher.¹³⁸ Respondents to our public consultation generally agreed that the BBC should improve access to its on-demand services and many supported the concept of a subscription-free offering.¹³⁹

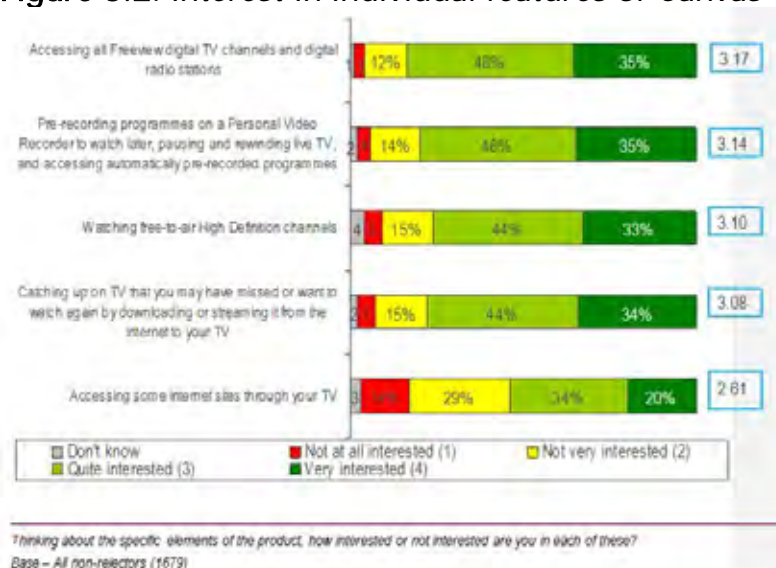
5.2.7 Whilst interest may not necessarily translate into actual demand, it does indicate a clear appetite for a Canvas type proposition. Our assessment of the separate elements of Canvas, in respect of consumer demand and benefits, is set out below.

Canvas Device Specification

5.2.8 Canvas brings together a suite of features which will allow households to upgrade and broaden their viewing experience. Although the specific configuration of a Canvas device may vary by manufacturer, it will include an Ethernet port for internet connection, enabling catch-up television and access to non-broadcast content. In addition, it is likely to include a personal video recorder and HD capabilities.

5.2.9 The interest in each of these aspects was thereby explored as part of the research undertaken by Opinion Leader, as set out in Figure 5.2 below.

Figure 5.2: Interest in individual features of Canvas



¹³⁸ Owing to access and usability provisions, for example.

¹³⁹ A number of stakeholders also signalled their support for services that were offered free at the point of use

5.2.10 Overall, our research found interest in each of the different elements of Canvas.¹⁴⁰ We consider each of these in turn and their appeal to different audience groups in the sections that follow.

PVR Functionality

5.2.11 Canvas devices will mandate a minimum storage capacity to enable off air recording and reduce the strain on IP networks. The inclusion of PVR functionality is anticipated but will be left to individual manufacturers.

5.2.12 Following their introduction to the UK in 2000, PVRs have entered mainstream technology; nearly nine million devices have been sold for use with cable, satellite and terrestrial television platforms.¹⁴¹ Devices are increasingly advanced, offering consumers greater convenience and control over their viewing via search functionality and 'push' video on demand.¹⁴²

5.2.13 More than a quarter of consumers (equivalent to around seven million homes) claim to have used a PVR according to 2009 Ofcom research. In multichannel homes, this jumps to 31%. Widespread adoption, assisted by falling prices (the average retail price of Freeview PVRs fell to £106 at the end of March 2009¹⁴³), has accelerated new forms of viewing. 'Time shifting' - recording broadcast programmes for later viewing - accounted for 15% of all viewing across the five main PSB channels in 2008.¹⁴⁴ Among PVR owners aged 16-34, this jumps to 19% compared with 11% for those aged 55 and over.¹⁴⁵

5.2.14 Widespread availability is shaping audience expectations; research undertaken by Human Capital found that PVR capability was particularly

¹⁴⁰ Opinion Leader research undertaken for the BBC Trust, November 2009.

¹⁴¹ Ofcom, The Communications Market Report, 6 August 2009, p. 5.

¹⁴² Whereby a portion of the hard drive on the device is partitioned so that programmes can be downloaded to the set-top box.

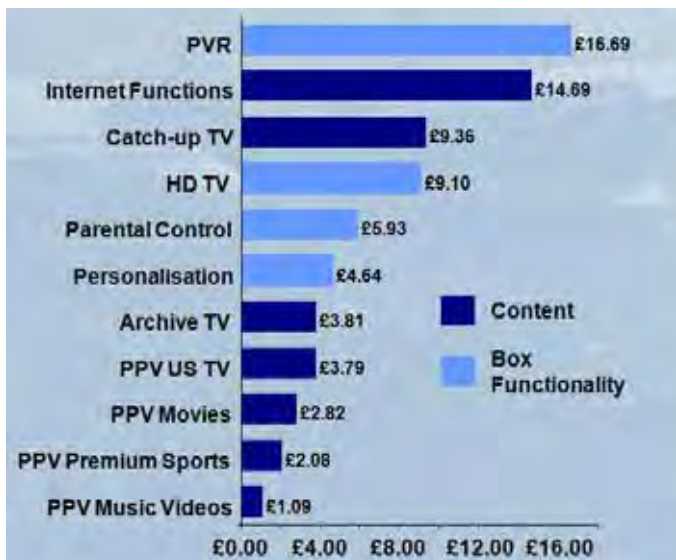
¹⁴³ Ofcom, The Communications Market Report, 6 August 2009, p. 40.

¹⁴⁴ Ofcom, The Communications Market Report, 6 August 2009, p. 40.

¹⁴⁵ Ofcom, The Communications Market Report, August 2009, p.40,

valued by consumers,¹⁴⁶ followed by internet access, catch-up and HD television (Figure 5.3).¹⁴⁷

Figure 5.3: Feature values, broadband households



Source: Human Capital: 'Conjoint research', February 2009

5.2.15 Freeview households in particular valued the twin capabilities of PVR and catch-up (Figure 5.4). Similarly, our own research found that PVR functionality held significant appeal, emerging as the most popular feature, alongside catch-up, with 81% expressing an interest.¹⁴⁸

I think everyone likes the opportunity to be able to plan what they're going to watch and it just means you don't have to watch the rubbish or you know you're going to sit down and watch something you want

Social grade, C2; with broadband, Freeview; with pre-school children, London

5.2.16 The increase in PVR penetration could, in part, explain the increased appeal of PVR functionality between studies conducted in 2008 and 2009. Proof of concept research conducted for the BBC in June 2008¹⁴⁹

¹⁴⁶ In broadband households.

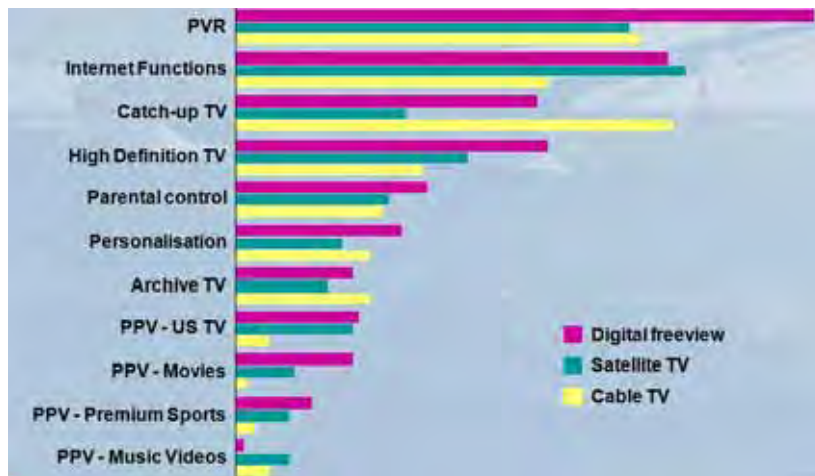
¹⁴⁷ On behalf of the Executive into Canvas proposals.

¹⁴⁸ Opinion Leader research undertaken for the BBC Trust, November 2009.

¹⁴⁹ TW Research, Concept development for an IPTV service, June 2008.

found PVR functionality fourth in the hierarchy of desired features (after TV, catch-up and archive). The PVR was crucial for those households that currently had one, but marginal for those without. By contrast, conjoint research conducted for the BBC in February 2009 found PVR functionality to be the most important feature for respondents.¹⁵⁰

Figure 5.4: *Feature values by platform type, broadband households*



Source: Human Capital: 'Conjoint research', February 2009

5.2.17 Several industry stakeholders also supported the inclusion of PVR functionality in Canvas devices. By mandating storage capacity, Canvas would enable push-VOD capabilities which could be used to minimise distribution costs and offset pressure on network infrastructure caused by growing demand for high quality video services.¹⁵¹ Others cautioned that a Canvas push-VOD service should not take priority over existing services from commercial providers.¹⁵²

High Definition Programmes

5.2.18 After years of implementation and slow penetration, high definition television has reached a tipping point, driven by the launch of new channels, affordable receiving equipment and heavy marketing investment by platform operators and device manufacturers (Figure 5.5). The number of homes with access to HD channels more than

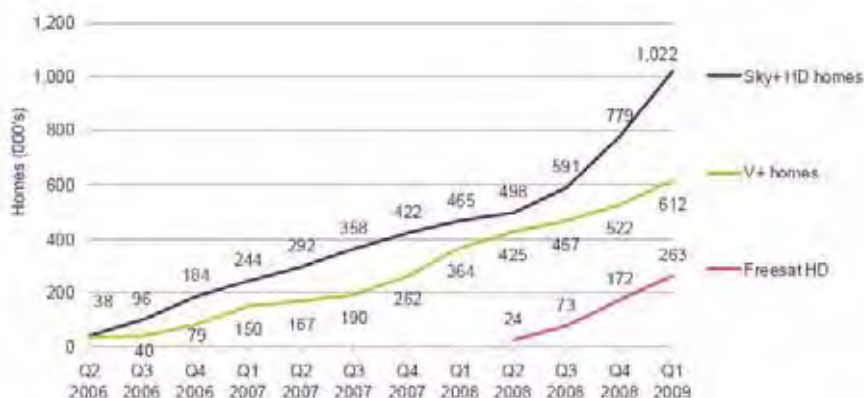
¹⁵⁰ In broadband households, Human Capital, Conjoint research, February 2009.

¹⁵¹ Paragraph 2.4.3 of the BBC Trust's consultation document.

¹⁵² Stakeholder responses to the BBC Trust consultation.

doubled in the first quarter of 2009; reaching 1.9 million, up from 829,000 for the same period in 2008.¹⁵³

Figure 5.5: *Number of broadcast HD homes: BSkyB, Virgin Media, Freesat*



Source: Ofcom; 'Communications market report', 6 August 2009, p.75

5.2.19 Demand for HD was evident in our own research, with 77% of those surveyed expressing an interest in this feature.¹⁵⁴ Its appeal is particularly strong among pay-television subscribers and those aged 35-54. A 2008 research study by Continental revealed significant interest in HD services among cable households (Figure 5.6).¹⁵⁵ More generally, HD is seen to enhance overall television viewing.

5.2.20 Awareness, and hence, demand, is likely to grow still further as more people experience HD, particularly in relation to sports and movies.¹⁵⁶ The planned launch in 2010 of HD channels on the Freeview platform is also likely to increase adoption. The first HD broadcasts aired in December 2009 in Liverpool and Manchester; HD signals are also

¹⁵³ Ofcom, Communications market report, 6 August 2009.

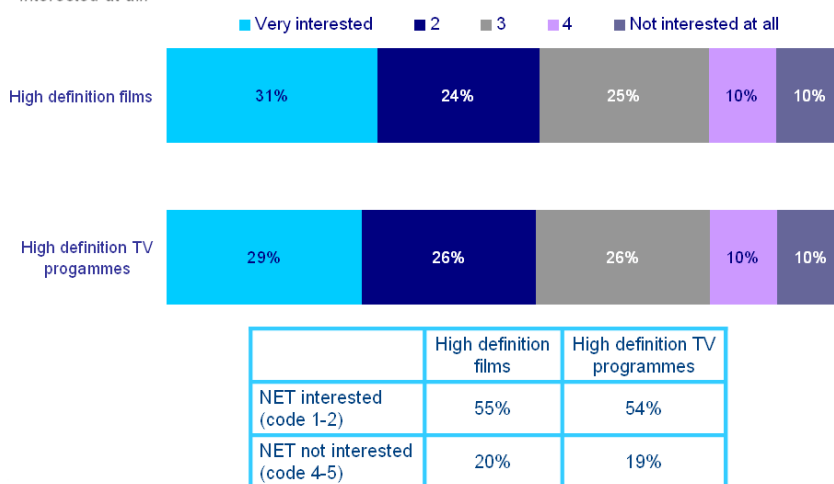
¹⁵⁴ 33% of the respondents were 'very interested', Opinion Leader, November 2009.

¹⁵⁶ Against this, it is arguable that the popularity of HD has been on the back of some heavy marketing and that BARB data might suggest that many consumers may well be indifferent for many genres of television output. However, the consensus of opinion seems to be that once households shift their consumption to HD viewing they are unlikely to want to shift back to SD viewing.

available from the Crystal Palace transmitter in London. By Christmas 2010, Freeview HD channels will be available to 60% of the UK.¹⁵⁷

Figure 5.6: *The majority of cable households are interested in high definition*

How interested would you be in watching high definition films and TV programmes on demand? Could you please indicate your level of interest using a score out of 5, were 1 means very interested and 5 means not interested at all.



Base : All ever used VOD: 1,014

Source: Channel 4 and BBC, VOD usage and awareness survey, Continental,

Catch-up Television

5.2.21 Clear consumer demand for online catch-up television first emerged in 2008, following the launch of a number of major online broadcaster services. Twenty-three per cent of adults with internet access claims that someone in their household watches online catch-up television. This figure rises to 33% for 15-24-year-olds.¹⁵⁸ This general trend was reflected in our public consultation, in which 62% of respondents thought it 'very important' that the BBC improved access to its on-demand services in the run-up to switchover.

5.2.22 Consumer research by Essential found that audiences are 'becoming conditioned to [expect] a degree of control and; indeed, often [attach]

¹⁵⁷ Viewers wishing to receive HD channels will need to buy new receiving equipment, which incorporates MPEG-4 compression and DVB-T2 transmission technologies, The Communications Market Report, Ofcom, 6 August 2009, p. 75.

¹⁵⁸ Ofcom, The Communications Market Report, 6 August 2009, p. 267.

huge value to innovations that [make] it more convenient to watch their favourite programmes'.¹⁵⁹ Essential went on to note that 'mainstream audiences are increasingly able to offer examples of VOD benefits, and are referring to VOD in positive terms in general TV conversation.'

5.2.23 Usage has been fuelled by service availability (Figure 5.7). All major public service and some multichannel broadcasters now offer a selection of their schedules online, ranging from seven-day catch-up to archive material; the majority of which is viewed on a computer (see Figure 3.4 above for the timeline of major online catch-up television launches).¹⁶⁰

5.2.24 Whilst use of internet VOD is growing, television continues to play a central role in people's lives.¹⁶¹ In the 2009 Ofcom Communications Market Report, 51% of consumers claim that watching television is the media activity that they would miss most, a figure similar to 2007 records. Despite recent growth in VOD services, mainstream audiences' understanding remains low and usage infrequent.¹⁶² The majority of usage is driven by convenience and catch-up and used mostly to extend viewing after users have exhausted linear schedules.¹⁶³ Even among cable households, with access to VOD services, linear television remains the default option (Figure 5.7 below).

¹⁵⁹ VOD State of Play; a consumer research report by Essential, September 2008.

¹⁶⁰ Ofcom, Communications market report, August 2009.

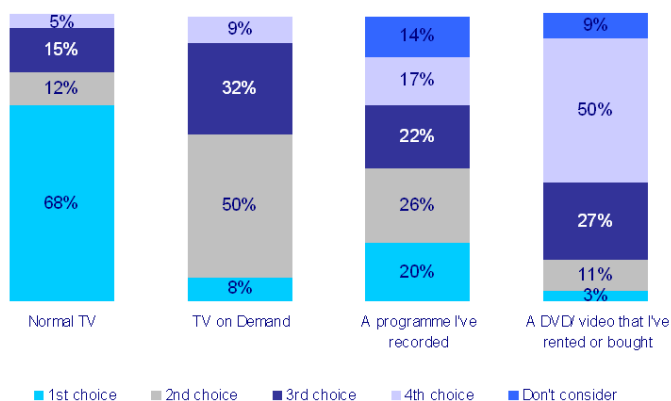
¹⁶¹ Ofcom Second PSB review, phase 2: preparing for the digital future, paragraphs 1.2 and 2.39.

¹⁶² VOD State of Play; a consumer research report by Essential, September 2008.

¹⁶³ VOD State of Play; a consumer research report by Essential, September 2008.

Figure 5.7: *Normal television remains the first choice, VOD second, among all VOD users.*

Thinking about when you want to watch something on TV – please rank the following in order of what you normally watch



Source: Channel 4 and BBC, VOD usage and awareness survey, Continental, September 2008

5.2.25 For most consumers, the PC remains a significant barrier to use. Essential found 'overwhelming consumer demand – across all levels of technical confidence' for long-form on-demand content delivered via television.¹⁶⁴ These findings are supported by our own research, in which 78% of 'non-rejectors' of Canvas expressed an interest in catch-up television and 34% was 'very interested'.¹⁶⁵ For many, the television represents a more natural viewing environment than a PC or a laptop:¹⁶⁶

..If there's two of you then you don't want to hide around that small laptop....I mean, if it was against watching, like, a premium film on a laptop compared to us all watching an old film on the telly, then I would watch the telly just because it was more comfortable.

Social grade C2; with broadband; Freeview; with pre-school children, London

5.2.26 Just over one-half of respondents (54%) to our public consultation believed that Canvas would have a positive effect on consumption of

¹⁶⁴ VOD State of Play; a consumer research report by Essential, September 2008.

¹⁶⁵ Opinion Leader research undertaken for the BBC Trust, November 2009.

¹⁶⁶ Opinion Leader research undertaken for the BBC Trust, November 2009. Another stakeholder also noted the importance of the BBC improving access to its on-demand and online video content.

on-demand content by increasing overall demand and improving user choice.¹⁶⁷ Whilst some expressed concerns over cost, others welcomed the prospect of easier access to on-demand services:

[Proposals are] very attractive; ever since iPlayer has been available, I have assumed that the next step would be to integrate the two services so that they would be equally accessible in one's living room and would not require a PC...

Respondent to BBC Trust consultation on Canvas proposals, 2009

5.2.27 This view was shared by several other stakeholders. In preparing its submission ACNI engaged different audience groups and individuals, one of whom observed:

There is a certain sense of luxury in being able to choose what you want to watch. It's the consumer culture; it's what we expect now. It would mean less stress as you would not mind missing a programme you wanted to watch as you can see it another time. It gives you more freedom.

5.2.28 Participants in the Essential research complained that PC-based consumption was a 'solitary activity' which did not lend itself to shared viewing. Further, Essential noted, 'British households have invested heavily in living room entertainment... particularly flat-screen TVs and home cinema systems – and therefore feel frustrated if the content they can actively choose is confined to a different screen or a different room (in most cases meaning a lower picture and sound quality and less comfort).'¹⁶⁸

5.2.29 We found some evidence that Canvas can reinforce the values of the living room, providing opportunities to further develop interactive capabilities of the internet and better engage the audience. Our own research found that family viewing, via a television screen, was highly

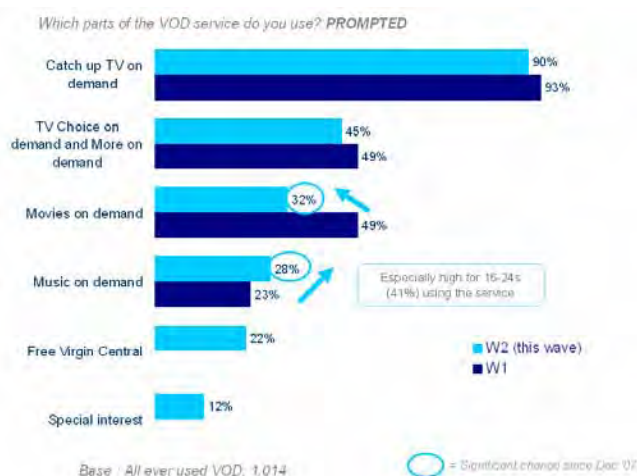
¹⁶⁷ Analysis of responses to BBC Trust public consultation on Canvas proposals; Public Knowledge, July 2009.

¹⁶⁸ VOD State of Play; a consumer research report by Essential, September 2008.

valued by participants.¹⁶⁹ One viewer noted, 'it will move iPlayer from 'sit forward' to 'sit back in comfort'.¹⁷⁰ As such, Canvas proposals demonstrate potential consumer and citizen value (and thereby impact) in terms of the opportunities for family viewing and better engagement with audiences.

5.2.30 This general view was further reinforced by 2008 quantitative research into VOD usage in Virgin Media homes, in which over 80% of users said they would rather watch programmes on a television set.¹⁷¹ Among cable households, research by Continental found that catch-up remains, by some margin, the most popular VOD service (Figure 5.8).

Figure 5.8: *overall, catch up television on demand remains the most used VOD service among cable households*



Source: Channel 4 and BBC, VOD usage and awareness survey, Continental, September 2008

5.2.31 Despite growing demand, widespread acceptance of VOD services is likely to emerge only when they are available on the television set.¹⁷² The availability of catch-up on free-to-air television is likely, therefore, to deliver a step-change in demand, as evidenced by the popularity of

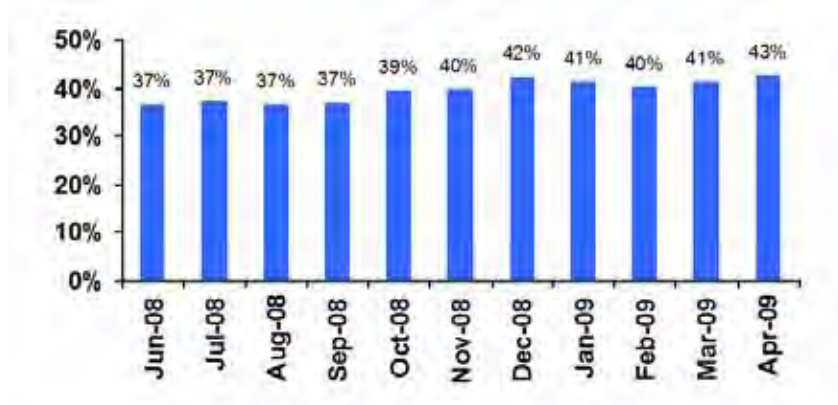
¹⁶⁹ Catch-up was seen by many as a complement, rather than a substitute, to PVRs; one allowed users to pre-plan their viewing, the other to catch-up on programmes that may have been overlooked.

¹⁷⁰ Audience Council for Northern Ireland, response to Canvas consultation, 2009.

¹⁷² Value Partners, Harnessing the value of VOD, 2009.

iPlayer on Virgin Media, which generates 30% of all requests, yet accounts for only 22% of residential broadband connections (Figure 5.9).

Figure 5.9: % of Virgin Media households using the TV iPlayer



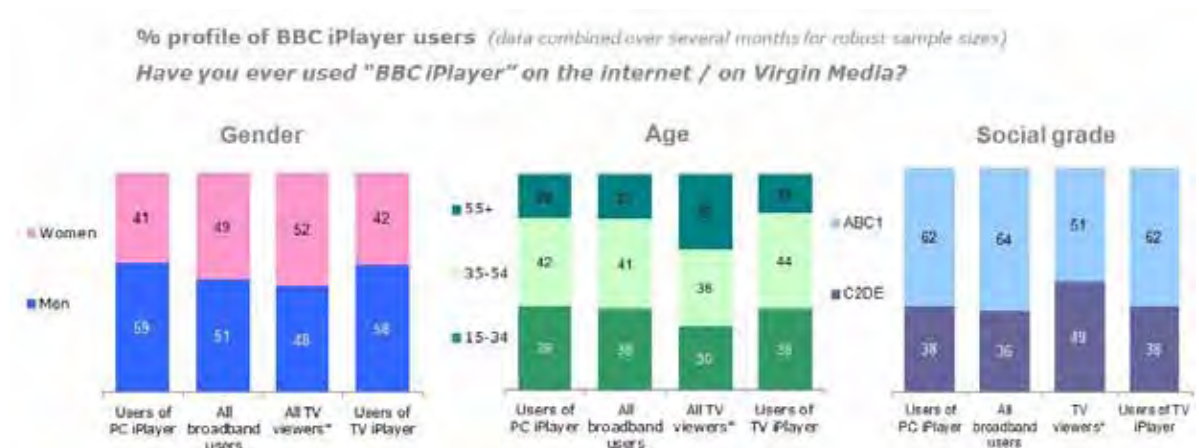
Source: Human Capital: 'Conjoint research', February 2009

5.2.32 In general, awareness and advocacy is highest among those that have used a catch-up service. Three quarters of cable customers are familiar with the concept of catch-up, and almost two thirds have used the service. Among this group, catch-up is the second choice after live television viewing, ahead of PVR.¹⁷³

5.2.33 The profile of users of both PC and television iPlayer remains similar – both skewed towards men, those under 55 and ABC1 adults. The demographic profile of iPlayer remains consistent across all platforms – slowly evening out in gender terms, but remaining strongly for those under 55 from higher social grades, and corresponding closely with BBC Online use (Figure 5.10).

¹⁷³ Continental Research: Channel 4 & BBC VoD Survey, September 2008.

Figure 5.10: Demographic profile of BBC iPlayer users



Source: BBC iPlayer PBTS tracking survey data, May 2009

5.2.34 The removal of practical barriers may help to broaden the audience base. Only 10% of those aged over 65 with internet access claims that someone in their household has watched online catch-up television.¹⁷⁴ Whilst most audiences express a preference for television viewing, Essential has found that younger age groups are generally more comfortable watching video content on PCs or laptops.¹⁷⁵ This may represent a generational shift but, equally, it may be that younger audiences are more likely to consume short-form clips which are better suited to PC consumption.

5.2.35 This is further reinforced by Vorhaus¹⁷⁶ who found that consumers gravitate towards the television for long-form narrative, whilst discerning a generational shift among 18- to 24-year-olds, for whom the PC offers an alternative viewing platform. Research is divided, however, on both the pace of change and its impact upon consumption over time. A cohort of 16- to 24-year-olds is experimenting with new media and this level of activity may not sustain itself as they enter their thirties. Early adopter behaviour may not therefore translate into general use.

Internet Access

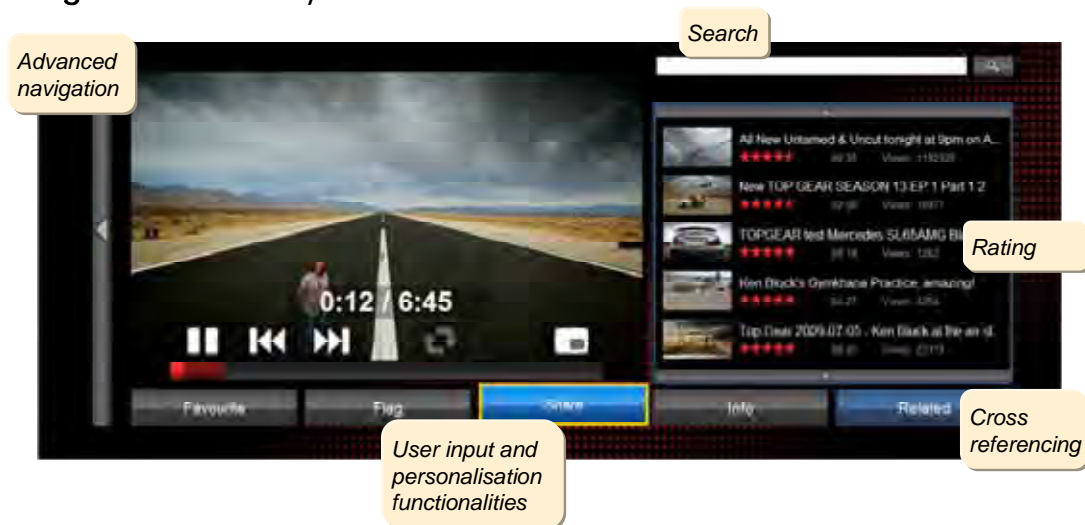
¹⁷⁴ Ofcom, The Communications Market Report, 6 August 2009, p. 267.

¹⁷⁵ VOD State of Play; a consumer research report by Essential, September 2008.

¹⁷⁶ Vorhaus, M (9 October 2007) For Longer Content, Typical Consumer Prefers the TV, *Advertising Age*; Vol. 78 Issue 36, p30-30

5.2.36 Canvas will support an advanced, flexible interface,¹⁷⁷ which allows for a richer experience (Figure 5.11) and enables delivery of a wide range of targeted content and interactive services. In this respect, it differs from D-Book 6 which was developed mainly to support the distribution of VOD from existing broadcasters and is more limited, therefore, both in the content it offers and its presentation.

Figure 5.11: Example of a flash-based user interface



Source: YouTube

5.2.37 Research conducted by Human Capital on behalf of the Executive found a high degree of interest in internet access, particularly among non-broadband households and those aged over 50 (Figures 5.12 and 5.13). A wide range of commercial, civic and community providers delivers public service content online, often in areas where the economics of linear television are challenging, and several signalled their support for proposals.

¹⁷⁷ Enabled by the use of HTML JavaScript and Flash for the front-end.

Figure 5.12: *Most important features for non-internet households*

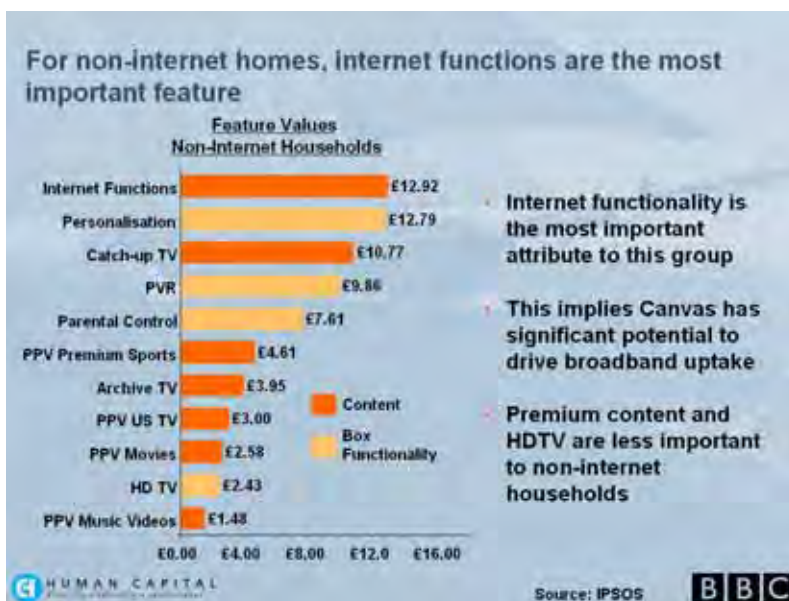
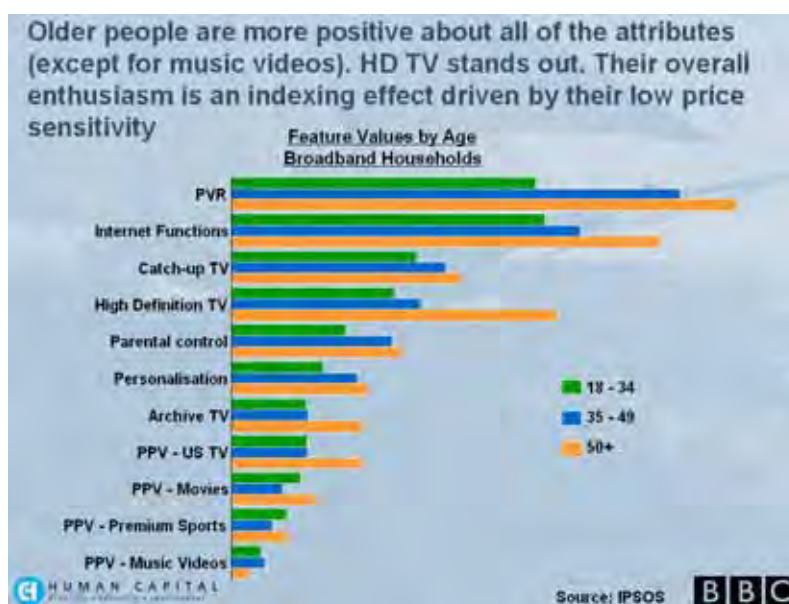


Figure 5.13: *Feature value by age (broadband households)*



5.2.38 Demand for internet access was somewhat less evident in our own research, falling slightly below HD, catch-up and PVR. Of those surveyed, 54% was interested, with 20% 'very interested'.¹⁷⁸ Given the relative novelty of the concept, however, it may be that people found it

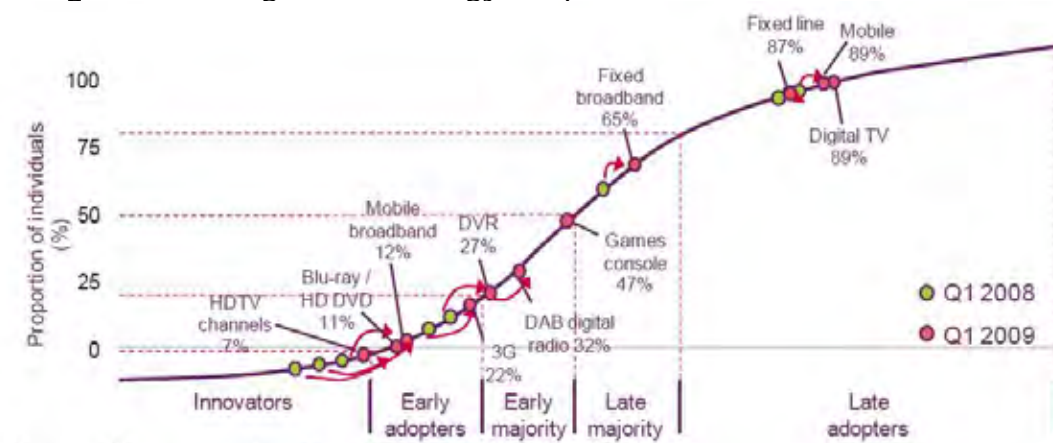
¹⁷⁸ Opinion Leader research undertaken for the BBC Trust, November 2009.

difficult to envisage the benefits of web access or the way in which they might use such functionality.

5.2.39 In general, internet access via a television screen was not seen as a substitute for full access via a PC. Many people draw a distinction between television as an entertainment medium, used principally for relaxing, and the internet used for the acquisition of information, social networking and collaboration. Whilst Canvas may deliver, or precipitate, a step-change in demand, in the near-term, mainstream audiences are likely to remain relatively conservative in the value they ascribe to such a service.

5.2.40 We accept, however, that different groups tend to accept new technologies at different rates. The process of adoption over time (seen in Figure 5.14) helps us to understand likely demand. Further, the internet can have a transformational effect on behaviours and routines.

Figure 5.14: *Digital technology adoption, Q1 2008 and Q1 2009-09*



Source: Ofcom, Communications Market Report, 2009

5.2.41 At the time the Opinion Leader research was conducted, Canvas was envisaged to include only a subset of internet content. When judging a limited selection of websites, internet availability drew a mixed response. Several participants felt strongly that Canvas would need to offer a wider range of content and services to be viable as a product. For some, there was an expectation that it would, as a minimum provide access to email, travel, shopping and social networking sites.¹⁷⁹

¹⁷⁹ Opinion Leader research undertaken for the BBC Trust, November 2009.

I would have thought [Canvas] would be the whole of the internet, because, remember now, on a mobile phone you can get the internet, and if you can get that on a mobile phone, why can't you get it on a new product that's being offered?

Social grade D; with broadband; Sky premium; with older children; London

- 5.2.42 More recent studies have demonstrated the popularity of internet access via the television screen, as one individual noted, 'no point in a half measure. If I want to access the internet I want to get it all.'¹⁸⁰ The prospect of television access to a broader range of content was also welcomed by respondents to our public consultation, one of whom observed:

On-demand content is brilliant so improved access will only be better...If it would allow me to watch iPlayer content on my TV, yes Canvas would help. If there was pay-to-view content in addition to extra free-to-air content, it would add to [the] variety.'

- 5.2.43 Moreover, a number of stakeholders identified the benefits for consumers and citizens of access to a growing range of public services and local information. One, ACNI, saw 'particular opportunities to enhance digital civic participation through internet access to a wider audience through television'. It also noted 'the comparatively low cost of entry is very attractive to content providers who may not be able to afford access to television. Project Canvas has significant potential to provide public value through enabling distribution of community television and providing a platform for content providers to reach an audience'. (We consider these points further below).

- 5.2.44 Stakeholders were generally supportive of plans to minimise entry barriers to the platform, and several called for full internet access. One, PACT, noted:

Failure to provide full and accessible access to the internet would risk either severely limiting Canvas' appeal, or would also

¹⁸⁰ ACNI response to Canvas consultation, April 2009, p. 7.

potentially restrict the development and innovation of new online services by restricting their access to the public, or most likely a combination of the two.

Willingness to Pay

5.2.45 Whilst the joint venture is not responsible for mandating the cost of Canvas devices, price clearly impacts take-up. Whilst thresholds varied, our audience research found that more than half (53%) of 'non-rejectors' was prepared to pay at least £99 for a set-top box, while the majority (84%) was prepared to pay at least £49.¹⁸¹ In qualitative research, price sensitivity was, not surprisingly, more acute among lower income groups, for whom the cost of a device could represent a barrier to take-up.

Figure 5.15: 'Non-rejectors' preparedness to pay for Canvas device



Q. Would you be prepared to pay the following price for the set top box to access this product?

BASE: All non-rejectors (1679)

Notes: Price points were shown one by one, starting with the highest.

This chart has been calculated cumulatively, i.e. all those who said yes for £249 have been included in all subsequent price points.

Source: Opinion Leader, November 2009

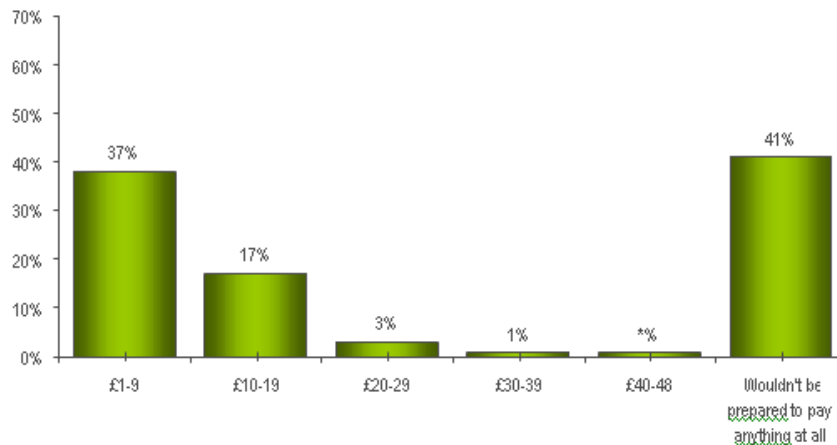
5.2.46 On preparedness to upgrade internet connections to access Canvas, 29%¹⁸² felt their existing package was already adequate. One in five (20%) was prepared to pay an additional monthly charge. Of the

¹⁸¹ Opinion Leader research undertaken for the BBC Trust, November 2009.

¹⁸² Of non-rejectors with internet access, Opinion Leader, November 2009.

members of this second group, 37% was **willing** to pay between £1 and £9, whilst 17% was willing to pay between £10 and £19 (Figure 5.16).

Figure 5.16: *Additional monthly internet charge that people are prepared to pay*



Q. What additionally would you be prepared to pay per month to upgrade your internet connection?

BASE: All non-rejectors of paying extra (764)

Source: Opinion Leader, November 2009

5.2.47 Evidence of a willingness to pay for the Canvas devices and an upgraded internet connection demonstrates consumer demand and thereby provides an indication that consumers place value on proposals.

5.3 Is there a role for the BBC and what form should this take?

5.3.1 In assessing public value, we considered the shape and scope of BBC involvement in the delivery of Canvas, starting with a brief discussion on partnerships.

5.3.2 In June 2008, the Trust challenged the Executive to develop a range of potential partnerships, designed to build value for public service broadcasting in the UK. The Executive was tasked with developing sustainable proposals which leveraged the cornerstone role played by the BBC in broadcasting without diminishing its service to audiences. In delivering Canvas, the Executive will rely on a range of partnerships with broadcasters, manufacturers and technology providers. In considering BBC involvement, therefore, we have regard to the wider partnership agenda.

- 5.3.3 Despite the emergence of alternative offerings, the concept of Canvas has attracted support from a broad church, both from industry, which welcomes the universal deployment of IP to the television, and from individual licence fee payers, many of whom expect the BBC to play a central role in its development.
- 5.3.4 There were mixed views and little consensus, however, as to the nature and extent of BBC involvement. Whilst some stakeholders were critical of any intervention that might dampen innovation and investment in a nascent sector, others recognised that the BBC could potentially help both coordinate and accelerate the adoption of new standards. Many argued that BBC involvement was essential not only to establishing the standards but also to providing the overall proposition with the credibility necessary to achieve scale. A number believed its involvement was a key factor in bringing Canvas to market. Ofcom drew on Freeview to illustrate the potential benefits of BBC involvement:

The BBC's leading role in Freeview and active participation in the Digital Television Group are good examples of how benefits for service providers and economies of scale in the consumer equipment market are achievable through the use of fully open standards which have broad cross industry support.

- 5.3.5 In its 2009 report, 'Canvas drives digital Britain', Enders Analysis noted that proposals would 'increase the speed of IPTV growth, increase confidence of consumer electronics designers, manufacturers, retailers and consumers. The nearest analogy – the Freeview marketing venture – was hugely beneficial in creating consumer awareness.'¹⁸³
- 5.3.6 A number of stakeholders argued that the BBC should be at the centre of the next development of free-to-air television. In its response, Media Trust recognised the 'significant contribution of the BBC to the take up of digital television in the UK', noting that it was ideally placed 'to drive the development of a platform with open standards, available to all content providers and device manufacturers alike.' It called for a careful balance, however, between 'the commercial imperative of BT, ITV and other Canvas venture partners with the public service priorities of the

¹⁸³ Enders Analysis, Canvas drives digital Britain, 2009.

BBC.' Whilst supportive of proposals, Freeview called for 'clear and simple communications that optimise understanding of [Canvas] alongside existing consumer trust in Freeview (particularly through switchover).'

- 5.3.7 Others questioned the 'free-to-air principle' underlying Canvas, which was stated by the Executive as being central to the rationale for BBC involvement. In particular, Sky commented that:

The statement that there is a free-to-air principle underlying the Canvas venture is fanciful when considering that: (i) the BBC accepts that the joint venture cannot discriminate in favour of free-to-air services over pay services; and (ii) the BBC's founding joint venture partner is a pay television provider which intends to cease to provide its own platform so that it can replace it with the Canvas platform once launched.

- 5.3.8 Our public consultation found support for BBC involvement in the venture, although many cautioned that this should not come at the expense of its core programme-making remit. Around three quarters of respondents (74%) believed that Canvas was a good use of licence fee money.¹⁸⁴ One noted:

*I pay a licence fee and I don't want my enjoyment of BBC services to be limited to a fixed schedule. The BBC needs to be at the forefront of emerging technologies and I expect part of my licence fee to contribute to these types of developments.*¹⁸⁵

- 5.3.9 Whilst some expressed reservations about broadband access, there was recognition that the BBC must invest in services which are not immediately accessible to all. In formulating its response, ACNI engaged

¹⁸⁴ We note that consultation responses were submitted based on the initial costs proposals put forward by the Executive.

¹⁸⁵ Respondent to BBC Trust public consultation on Canvas proposals, BBC Trust, Project Canvas Assessment, Summary of Responses to the Public Consultation, Public Knowledge, 21 July 2009.

a number of audience groups, including Community Service Volunteers,¹⁸⁶ one of whom noted:

The BBC has to provide services to a wide range of people and it cannot possibly only provide services that everyone will use. For instance, a lot of radio output is specialised such as programmes for ethnic minorities. I have no problem with my licence fee being spent on this even though I do not use it. I feel the same way about project Canvas.

- 5.3.10 Several stakeholders, however, argued that whilst the BBC has certain specific duties in relation to the development of DTT, these do not extend to the type of intervention outlined under proposals. One, Sky, did not consider it necessary for the BBC 'to enter into a joint venture to achieve its stated objectives'. It maintained that the BBC's public purposes and obligations could be discharged more efficiently and proportionately through a broad policy of syndication across third party platforms and services. 'Such a policy', noted Sky, 'would support the development of a wide variety of devices and services capable of distributing audiovisual and audio content to consumers in innovative and efficient ways'. (We consider these points in section four, above.)
- 5.3.11 Another, IP Vision, whilst supportive of the continued development of the UK's free-to-air digital television platforms, was critical of the venture, claiming that it would 'only serve to generate confusion amongst licence fee payers and will both damage prospects for adoption of on demand services and increase costs to the consumer.' This was reinforced by a stakeholder who expressed concern regarding the way in which Canvas is advertised and communicated to the public, particularly in relation to potential confusion that may arise, thereby delaying the purchase by consumers of products for digital switchover.
- 5.3.12 There was general agreement, however, that BBC involvement would provide further momentum to the development of IPTV and that a structured approach, working via the Digital Television Group,¹⁸⁷ was an

¹⁸⁶ Media trainees and staff, representing a mix of age groups including younger adults and a wide variety of media consumer experiences.

¹⁸⁷ The DTG is the industry association for digital television in the UK and is both independent and platform-neutral. For many years, the DTG has set out the detailed

effective way to bring about the next stage in the evolution of DTT. IP Vision was one of a number of stakeholders calling for support for DTG and Freeview standards: 'We believe that the interests of the licence fee payers are best served by the BBC through the BBC's full support for the evolution of Freeview through support for D-Book 6 and not by attempting to create additional standards.'

- 5.3.13 DTG similarly argued that failure to properly engage with its members would limit the value of proposals and lessen the likelihood of universal adoption by manufacturers, 'this puts at risk the quality of the consumer experience and would ultimately limit the platform's reach.' This point was made by several stakeholders, including Intellect, which called for greater industry engagement and alignment with pan-European initiatives:

We firmly believe that the UK should be at the forefront of digital communications technology development. The BBC has played a vital role in ensuring the UK is a leading country in the development and application of cutting edge broadcast technology. However, the BBC must seek to adopt open standards and work on a European and global scale.

- 5.3.14 Failure to do so, cautioned Intellect, would lead to the UK becoming a 'technological island'.
- 5.3.15 We can see a clear rationale for, and public expectation of, BBC involvement in the joint venture; both in protecting the universal reach of the full range of its service and in helping to deliver to the public the benefits of emerging communication technologies and services. We also take account of comments made by stakeholders as to the BBC's role here. We recognise the importance of industry engagement and the role it may play in securing widespread adoption of new receiving devices. We also note the point made by a several stakeholders that the wider objective of universal deployment of IP to the television may be best achieved via industry consensus, working within established industry

technical standards for digital terrestrial TV in the UK. Its members include government agencies, manufacturers, platform operators and broadcasters.

mechanisms.¹⁸⁸ We thereby encourage the Executive to engage with industry.

5.4 In what way will BBC involvement deliver value?

5.4.1 Isolating the individual drivers of demand,¹⁸⁹ whilst useful, is less important than understanding the importance of the proposition overall and the value it delivers to licence fee payers. Underlying BBC involvement in the joint venture is an ambition to protect universal reach to the full range of its services.¹⁹⁰ Enabling access to a wider range of content and services on DTT, therefore, will help to ensure parity with pay platforms, protecting scale and safeguarding delivery by the BBC of its public purposes.

5.4.2 The extent to which Canvas ultimately contributes to the public purposes rests on its ability to deliver value to audiences, taking account of impact, reach, quality and distinctiveness; and value for money.¹⁹¹ Of these, impact - in terms of consumer and citizen value - forms part of our consideration of demand, set out above. In the section that follows, we consider the remaining key drivers, beginning with a discussion on reach.

Will Canvas extend or maintain BBC reach?

5.4.3 The basis of our reach assessment is whether people would adopt Canvas in sufficient absolute numbers and whether it would extend or maintain BBC reach.¹⁹² Our assessment of reach is then considered against the costs of the Canvas proposals to determine value for money (considered below).

5.4.4 Reach measures the number of people in all relevant audience groups who access BBC content. It is a key driver of public value and a useful

¹⁸⁸ In July 2009, in response to a request from the Trust for further detail on key aspects of proposals, the Executive made clear a commitment to work more closely with industry on the development of the Canvas standard.

¹⁸⁹ As set out above.

¹⁹⁰ The Executive's non-service application.

¹⁹¹ Considering the four drivers of public value.

¹⁹² In terms of the number of users and the consumption of content.

basis on which to assess the value of proposals. The Agreement places a duty on the BBC to do all that is reasonably practicable to ensure that audience groups can access its public services in a range of ways.¹⁹³

5.4.5 On-demand delivery, of the nature offered by Canvas, makes it easier for audiences to access content at a time of their choosing and value is created if this helps to maintain or increase consumption levels. We made a similar point in our approval of the on-demand PVT in November 2007. Similarly, the BBC has a role in serving minority and underserved audiences; a further useful measure of reach therefore is the extent to which BBC content reaches particular groups.¹⁹⁴

5.4.6 We have therefore looked at reach from three perspectives:

- I. Total household penetration of Canvas
- II. Reach and benefits of Canvas to under-served audience groups
- III. Impact upon the consumption of BBC content

I. Total household penetration of Canvas

5.4.7 Estimating reach is somewhat speculative, with a wide range of operational, social and market forces at play. Uncertainty increases where the product or offering is not only novel, but also based on a new technology, as with Canvas. Given these uncertainties, we have considered a range of scenarios,¹⁹⁵ low, base (best estimate) and high, below.

Table 5.1: Sales of Canvas devices across three scenarios by 2015

Scenario	Base	High	Low
Total Canvas devices (millions)	4	8.3	1.2
On primary sets	2.5	5.6	0.7
On secondary sets	1.5	2.8	0.4

¹⁹³ Clause 12, Framework Agreement.

¹⁹⁴ In making our assessment, we consider reach to all television households, as the costs of any service will be borne equally by all licence fee payers.

¹⁹⁵ Projections are based on modelling by Value Partners. Value Partners built a detailed model to forecast the potential demand for Canvas for the five calendar years to 31 December 2015. The assumptions used to build the model and the outputs generated are discussed in the Trust's MIA document and in detail in the Value Partner's report.

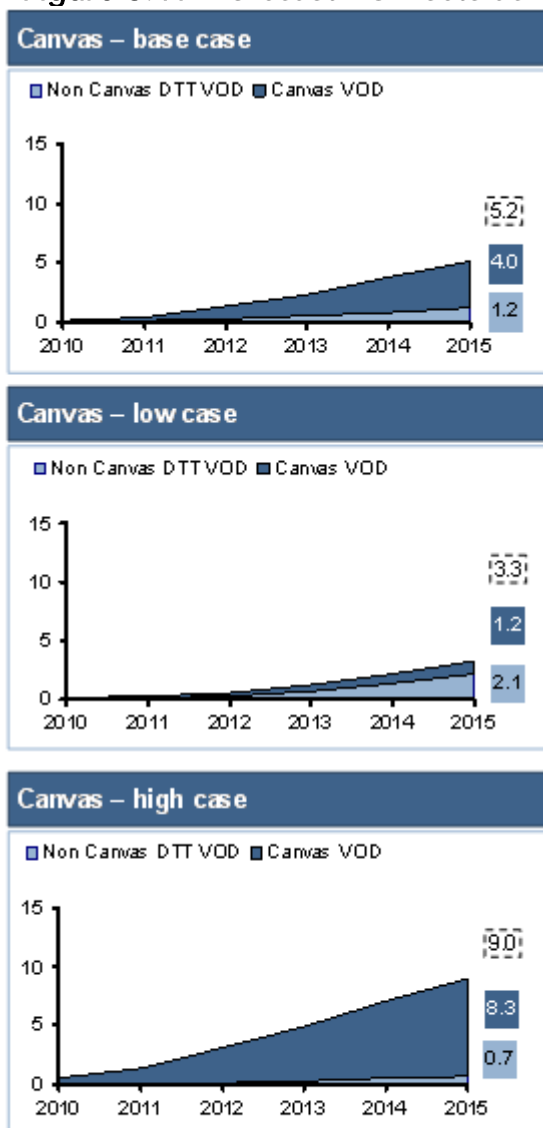
% of DTT HHs using Canvas on primary set	23	50	7
% of all TV HHs using Canvas	9	21	3

- 5.4.8 Whilst we consider a range of scenarios, we discount the low case, which has little impact on our overall assessment,¹⁹⁶ but note that, even here Canvas would still generate public value by delivering the benefits of accessibility and usability, which provide potentially high value to certain audience groups.
- 5.4.9 The high case assumes that Canvas becomes the default device for hybrid DTT IPTV connectivity. It also allows for some level of subsidy from ISPs to their broadband customers, which helps grow overall volumes. The high case is deliberately aggressive. It therefore represents an upper bound.
- 5.4.10 Our base case sets out the best estimate of potential take-up of Canvas by 2015. This assumes that the proposition is marketed by early 2011 and does not suffer significant technical difficulties. Our forecasts are consistent with other available industry projections, which suggest that any variance from the base case is likely to be positive with higher volumes¹⁹⁷ (Figure 5.17).

¹⁹⁶ Further details on the assumptions used in this modelling can be found in the Trust's MIA.

¹⁹⁷ For example, Screen Digest forecasts 3.5 million Canvas homes by 2014.

Figure 5.17: Forecast VOD sets across three Canvas scenarios



Note: Excludes Sky Darwin StBs

5.4.11 It suggests that Canvas will reach 4 million households by 2015. This compares with 6.2 million and 9 million devices under the Executive's high and low case scenarios.¹⁹⁸ We consider the projections used by the Executive in its application to be somewhat aggressive and have adopted a more cautious approach.

5.4.12 Initial interest, and therefore uptake, is likely to be higher among younger consumers from higher socio-economic groups, and somewhat less so among older people, lower socio-economic groups and analogue

¹⁹⁸ Estimated take-up based on number of fully compliant primary and secondary sets, removing legacy boxes, Canvas, proposition and public value case, non-service approval.

only households.¹⁹⁹ We therefore anticipate slower uptake among this group, and reflected this in our modelling. Whilst reach is limited initially by the cost of access, however, we reasonably expect this to climb as the price of devices falls.

5.4.13 Whilst our projections demonstrate clear demand for Canvas, we recognise that, for many households, it is not yet seen as a 'must have'. In the short-term, therefore, the effect of Canvas on BBC reach is largely neutral. Over time, however, as audiences are exposed to on-demand services and increasingly come to expect their delivery to a television set, Canvas may play a valuable role in maintaining aggregate reach of BBC content on the DTT platform. Its impact over time, therefore, is likely to be more significant.

5.4.14 We now examine more closely in the section that follows ways in which Canvas delivers value, by way of reach and benefits, to different audience groups.

II. Reach and benefits of Canvas to under-served audience groups

5.4.15 As part of our assessment, we considered whether Canvas would increase reach of BBC content and drive broadband adoption among particular audience groups, which are underserved by the BBC and therefore have special relevance to the delivery of its public purposes.

Lower income households and vulnerable groups

5.4.16 As well as delivering personal value, many participants in our research believed Canvas would offer wider societal benefits by, for example, providing an entry-level internet product for vulnerable groups. As set out above, delivering the benefits of emerging communications technologies and services is one of the core public purposes of the BBC and a central strand of the Executive's application:

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.

¹⁹⁹ This is consistent with the Executive's own research.

5.4.17 A number of stakeholders raised similar points, one, Media Trust, observed:

We believe Canvas can help make a significant contribution to the delivery of the BBC's public purposes – in particular supporting specific commitments to building Digital Britain. Canvas looks to be an exciting initiative that will help create public value and provide a positive stimulus for the use of new digital technologies as well as encouraging wider broadband adoption.

5.4.18 Audience Council for Northern Ireland signalled its support for opportunities to extend digital inclusion given 'Northern Ireland's relatively low and unevenly distributed digital take-up' but cautioned that this would 'require particular promotion and support to clarify the benefits and encourage uptake'.²⁰⁰

5.4.19 Audience Council for Wales meanwhile acknowledged that Canvas 'could improve access to the internet for many members of the audience, by providing a more easily understandable means of access.'²⁰¹ Similarly, around two thirds of respondents to our public consultation (67%) believed that proposals would help accelerate broadband adoption, although many had reservations regarding cost, network capacity and support for vulnerable groups.²⁰²

5.4.20 It should be noted, however, that those groups identified by others in our research as potentially benefiting in this regard (such as older consumers and low income households) were themselves less interested.²⁰³ (This is not surprising as they are less likely to have broadband at present.) At first glance, the benefits of flexibility and control are offset to some degree by the technical nature²⁰⁴ and cost of

²⁰⁰ Audience Council Northern Ireland, Canvas consultation response, April 2009.

²⁰¹ Audience Council Wales, Canvas consultation response, 2009.

²⁰² Project Canvas Assessment, summary of responses to public consultation, Public Knowledge, July 2009.

²⁰³ Trust Research 2009.

²⁰⁴ Requiring not only a broadband connection but the customer to set up and install the device. While not a primary barrier to adoption, the acquisition and installation of a home

the offering. Whilst Canvas is subscription-free, users will still need broadband access, raising questions over willingness (and ability) to pay. For some low-income households, the combined cost of broadband connection and new receiving equipment may put Canvas beyond their means.²⁰⁵ Despite consumer appetite, the current recession may also have a temporary deleterious effect on the willingness or capability of households to pay, particularly among low-income groups.²⁰⁶ Less certain, therefore, is its ability to drive broadband uptake.

5.4.21 A growing demographic of older and disabled users is disenfranchised by technological advances according to research by Professor Allan Newell.²⁰⁷ The difficulty in driving broadband adoption among these hard-to-reach groups was highlighted in 2009 research by Ofcom aimed at understanding obstacles to uptake and identifying possible remedies.²⁰⁸ Seventy per cent of UK adults have access to the internet at home. The remaining 30% fall under three main groups:

- Those intending to get internet access in the next six months (20%)
- Those who lack interest or need, this groups tends to be older and retired (42%)
- Those who lack the financial resources, knowledge or skills (30%)

5.4.22 Whilst the majority of those without access either intend to subscribe or would do so with the right financial assistance and support, a significant minority need 'more creative and personally relevant enticements'. Even among those who claim to lack either the interest or need, there may be deeper underlying barriers to adoption or a misunderstanding of the potential benefits of internet use.

internet connection also emerged as an area of considerable confusion for most non-users, according to research conducted for the BBC by Essential and Ipsos Mori in October 2009.

²⁰⁵ It is also worth noting that a higher proportion of those with disabilities live at the margins, making affordability an even greater consideration.

²⁰⁶ One stakeholder made this comment in their submission.

²⁰⁷ Newell, Demographic Challenges in User Centric Design, 2009.

²⁰⁸ Accessing the Internet at Home, a quantitative and qualitative study among people without the internet at home, by Ipsos Mori for Ofcom, 10 June 2009.

- 5.4.23 More recent research undertaken for the BBC by Essential and Ipsos Mori²⁰⁹ found that 'non-internet users'²¹⁰ were both significantly older than the general population (with an average age of 61, over half were aged over 65 whilst one third was aged over 75) and more likely to belong to lower socio-economic groups. Those under 55 were most likely of all to be from DE groups. Given that a significant minority of non-users were younger, with 14% aged 15-34, findings suggest that low income and media literacy levels (not just age) play a key part in reinforcing digital exclusion.
- 5.4.24 Whilst those without broadband face practical hurdles, conjoint research for the Executive found that, for non-internet households, internet functions were highly valued. Twenty-eight per cent of this group said they would 'probably' or 'definitely' get access to broadband if Canvas was available.²¹¹ Given that the members of analogue households are both older and poorer – 66% are aged 45 and over and 41% are in the DE demographic – and therefore less likely to have broadband access, Canvas may have a role in driving uptake among the members of this group as switchover advances. Television consumption, for example, is highest among those over 65²¹² and Canvas may provide the right incentives to get these consumers online.
- 5.4.25 This general view was reinforced by Essential and Ipsos Mori which found that internet-connected television could offer a potential means of access for some, with one in six non-internet users expressing an interest in the concept.²¹³ In its interim report on Digital Britain, the Government noted, 'technology innovation has taken broadband beyond the PC to other devices, the mobile phone and television set-top boxes, that those sections of society who are not PC-enabled are more inclined

²⁰⁹ Encouraging Home Broadband Adoption, a report prepared for the BBC by Essential Research and Ipsos Mori, October 2009.

²¹⁰ Those without access to the internet at home who did not use it outside the home either, for example, at a public library.

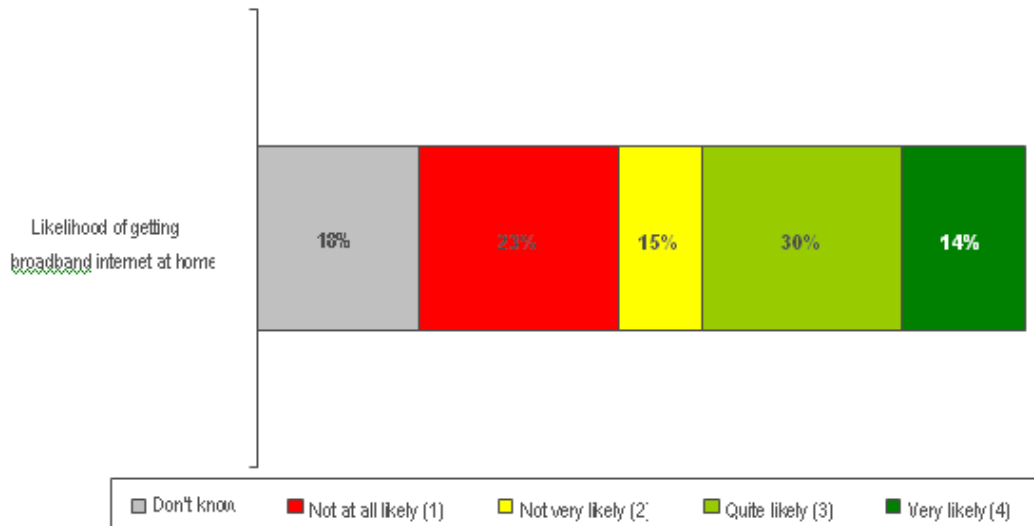
²¹¹ Human Capital: Conjoint research, February 2009.

²¹² There are more TV viewers over 65 than in any other age group at most times of the day, Ofcom 2009 communications report, television industry, p. 78.

²¹³ Encouraging Home Broadband Adoption, a report prepared for the BBC by Essential Research and Ipsos Mori, October 2009.

to use'.²¹⁴ For many, however, lack of access to the internet remains a significant barrier. Whilst Canvas has the potential to drive broadband uptake, in reality, its impact should not be overstated. Our own research found that, whilst 44% of 'non-rejectors'²¹⁵ without broadband at home would consider subscribing in order to access Canvas, only 14% was 'very likely' to do so (Figure 5.18).

Figure 5.18: Likelihood of getting broadband at home



Q. To access this product you will need to have a broadband internet connection at home to download programmes from the internet to your TV. How likely or not likely would you be to get broadband internet connection at home to access this product?

BASE: Non-rejectors without internet at home (338)

Source: Opinion Leader, November 2009

5.4.26 Those who did not reject getting broadband at home were then asked how much they were prepared to pay for this a month. The most common response was £10-£19 (39%) or £20-£29 (18%), with 69% prepared to pay less than £30.²¹⁶

5.4.27 The addition of a monthly fee, or higher charges for a bandwidth intensive service, may be prohibitive to those on the lowest incomes, acting as a barrier to broader uptake among hard-to-reach groups. In its response, Media Trust underlined the importance of adequate

²¹⁴ Digital Britain, Interim Report, January 2009, p. 54.

²¹⁵ Those who did not reject the Canvas proposition.

²¹⁶ Opinion Leader research undertaken for the BBC Trust, November 2009.

consumer protection and labelling to ensure consumers fully understood their contracts, noting that:

Many households are locked into a basic broadband package which restricts them to a limited number of data downloads. The prohibitive cost of exceeding such limits may prove a highly unwelcome surprise to the bill payer.

5.4.28 The need to address affordability and cost confusion was reinforced in separate research for the BBC by Essential Ipsos Mori, which found 'confusion about the cost of internet access [which] suggested that non-users may benefit from access to simple explanations and comparisons of the costs involved in standalone and bundled contracts'.²¹⁷ This was reinforced by several stakeholders, including Kryton TV and Media Trust who expressed concern over internet monthly usage policies and the possibility that consumers could incur significant costs to download modest content or be forced to upgrade their current subscriptions. In its response the Audience Council for Northern Ireland also noted, 'considerable concern [among consumers] about the cost of exceeding download capacity on broadband packages'.

5.4.29 Whilst financial hurdles remain, ISPs are able to charge higher access prices for faster broadband packages, Virgin is actively migrating customers to higher speeds and Sky is marketing its 20m/b/s for an additional £10 a month. We recognise that scope to rebalance retail offers potentially brings entry-level broadband packages within reach of lower income households.

5.4.30 By delivering a broader range of content and services, Canvas may therefore act as a stimulus for broadband adoption for those who do not fundamentally reject the internet and for whom cost is not a barrier. Our own projections suggest that it will act as an incentive for between 490 and 870K households to adopt broadband over the period under review.²¹⁸ In addition, Canvas also overcomes, to some extent, the cost

²¹⁷ Encouraging Home Broadband Adoption, a report prepared for the BBC by Essential Research and Ipsos Mori, October 2009.

²¹⁸ Based on Value Partners' projections, Canvas is forecast to increase household penetration of broadband by 2% for those who do not fundamentally reject the internet and

barrier of having to buy a PC and associated software. The Government is also providing support and assistance to low-income groups to enable them to purchase PCs and related equipment, but stakeholders were divided on whether this would extend to Canvas devices and help, at the margins, to drive adoption.²¹⁹

Younger audiences

- 5.4.31 Given the appeal of Canvas is higher among younger audiences²²⁰ (our research found that those aged 18-34 were more likely to be interested in proposals than older audiences), Canvas may also have a role to play in maintaining reach to this group where BBC share is under pressure.²²¹
- 5.4.32 Whilst mainstream audiences gravitate towards the television for long-form narrative, the PC is an alternative viewing platform for 18-24 year-olds and many PC-based catch-up services attract a younger demographic. In its 2008 Communications market report, Ofcom found that iPlayer had a younger audience than the BBC's broadcast audience and the UK population as a whole. As a result, the BBC needs to ensure that delivery of its content is not confined to traditional broadcast channels.

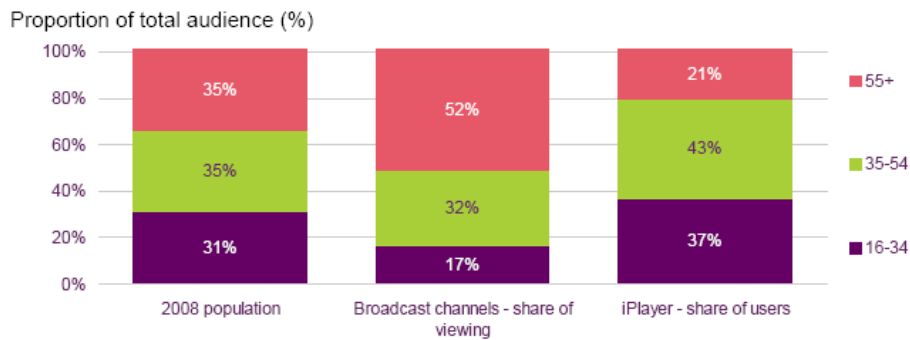
for whom cost is not a barrier (overall penetration increases from 79% in the counterfactual to 81% in the Canvas base scenario).

²¹⁹ This general point was made by the Digital Inclusion Unit in discussions with the Trust Unit. The Unit supports easier access to public services²¹⁹ but makes the point that, in the short term and possibly beyond, certain groups will require direct contact with service providers.

²²⁰ NXVision Ltd raised what it believes to be a key concern in this context: namely, the portability of media. It believes Canvas should be extended to allow full access to Canvas content on mobile phones and other devices.

²²¹ Research undertaken by Opinion Leader into project Canvas, 5 May 2009

Figure 5.19: Difference in profile of BBC broadcast and iPlayer audiences



Source: BBC, BARB and ONS estimates for 2008 population, The Communications Market report, Ofcom, 14 August, 2008

5.4.33 We accept, however, that younger audiences tend to be light viewers of linear television and many expect targeted services and thematic channels. Moreover, those under 24 place a high value on mobility and for many, viewing occurs outside of the home.

5.4.34 More generally, by enabling television delivery of third party targeted content and services, Canvas may appeal to a younger demographic, but this will not, of itself, necessarily give rise to an attendant increase in BBC reach among this group. It is important, therefore, not to overstate its impact on this group in the near term.²²²

III. Impact on consumption of BBC content

5.4.35 A further useful measure of reach is the impact of proposals on consumption of BBC content generally. As a hypothetical product, this area is challenging, as usage and impact are difficult to predict. Nonetheless, around half of all respondents to our public consultation believed Canvas would have a positive effective on their consumption of both on-demand television and radio content²²³ and 55% of those surveyed in our audience research expected their use of catch-up to increase.²²⁴ A similar point was made by several stakeholders, including

²²² We also note the findings of the on-demand PVT, which found that young people tend to cite the content proposition rather than the distribution mechanism as influencing their propensity to view.

²²³ Project Canvas Assessment, summary of responses to public consultation, Public Knowledge, July 2009.

²²⁴ Opinion Leader research undertaken for the BBC Trust, November 2009.

Ofcom, which set out its initial response to proposals in a letter to the Trust:²²⁵

We believe that Canvas has the potential to be an exciting and innovative proposition which could offer a number of consumer benefits. In particular we recognise that Canvas could improve the reach and availability of public service content.

- 5.4.36 In broadening access to on-demand services, Canvas may also deepen appreciation of BBC content and services and increase demand for niche content. In retail examples, online channels drive a shift in sales towards the tail,²²⁶ as evidenced by the diversity of programme genres consumed on BBC iPlayer. The BBC's top 20 broadcast programmes in April 2008 were all scheduled on BBC One, of these, 95% were drama. There was more diversity, however, in genres consumed online. Factual and drama accounted for 60% and 40% respectively, of the top 20 programmes. The range of shows was also broader, with 11 different programmes in the top 20 and no single programme accounting for more than a quarter of the total.²²⁷
- 5.4.37 Whilst Canvas is likely to have a neutral effect on consumption of BBC content in the near term, it is reasonable to hypothesise that, over time, it may increase the consumption, reach and relevance of the UK public services. It may also, equally, increase satisfaction levels among audience groups. This is supported by 2009 research by Ofcom which found that users of non-linear television claimed that it enhanced their general viewing experience.²²⁸
- 5.4.38 Having assessed likely reach and associated benefits, we now consider whether proposals are of high quality and distinctive.

²²⁵ Letter from Peter Phillips, Ofcom, to Nicholas Kroll, BBC Trust on Canvas proposals, 17 April 2009.

²²⁶ The Long Tail, see Anderson, 2006.

²²⁷ Ofcom, Communications Market Report, 2008, section 1, p. 63.

²²⁸ Ofcom, Public Service Broadcasting Annual Report, 2009.

Are Canvas programmes of high quality and distinctive?

5.4.39 Our findings support the multifarious nature of quality; expectations vary by audience group, as do incentives to adopt Canvas. Perceptions depend on various factors, such as the appeal of different elements of the offer, envisaged use, current equipment and services, and response to cost. In general terms, quality and distinctiveness relate both to the underlying technical product and to the user experience.²²⁹

5.4.40 Essentially Canvas constitutes the following elements:

- A high quality user experience, extending to:
 - Guaranteed quality of service
 - A single user interface, with a focus on access and usability
 - Parental controls
- Subscription-free access to linear and on-demand services
- Low barriers to entry for content providers
- Provision of customer support

5.4.41 We consider each of these areas in turn in the section that follows.²³⁰

A high quality user experience

Quality of service

5.4.42 The Executive submits that Canvas is not seeking to pursue a technology solution in terms of provision of quality so much as an audience outcome that will 'enable and reward innovation'. Canvas would lead to a significant increase in the volume of video traffic and stakeholders sought assurance that it would deliver a high quality viewing experience, a refraction perhaps of uneven broadband coverage and a disparity in speeds not only across locations but also between providers and throughout the day.²³¹ Recognising both the costs

²²⁹ Of the user interface and EPG.

²³⁰ As they relate to quality and distinctiveness.

²³¹ Over 95% of homes in the UK can in theory receive a headline speed of 2Mbps with most homes able to access connections with much higher peak speeds ranging from 8 – 50 Mbps.

associated with onward carriage to the consumer and the desire to create a simple audience proposition, the Executive set out the following principles:²³²

- Canvas would be open to all ISPs that can offer a quality experience, based on the concept of a minimum quality threshold.
- The joint venture would work with ISPs to help identify opportunities arising, for example, by differentiating tariffs through their ability to deliver a quality viewing experience.
- Canvas would ensure that the interests of ISPs were reflected in any resulting Canvas venture or standards body.

5.4.43 In seeking to guarantee service levels in this way, Canvas acts as a coordinator to achieve a higher quality and more consistent output than a fragmented range of offers could provide. This is particularly important given consumer expectations of quality differ markedly when viewing on a television set and a PC screen. Our audience research found a general expectation that Canvas would be quick and easy to use, free from buffering and delays.²³³ This point was made by several stakeholders, one of whom, Tiscali, commented that audiences would be intolerant of delays of any kind through the television. Others drew attention to the variable performance of broadband networks and the difficulty in ensuring quality of service.²³⁴ In its submission, BSG noted:

...In some locations it will be difficult for ISPs to provide a quality of service sufficient to support Canvas. In addition, customers on basic broadband packages are likely to find that even modest Canvas usage causes them to exceed their broadband fair usage policies. These will be difficult messages to convey to consumers and there will be a need for all parties to work together to effectively communicate to ensure that consumers have an informed and reasonable understanding of what to expect.

However, actual broadband speeds vary widely, both geographically and depending on time of day. Further detail is set out in Annex III.

²³² For additional information submitted to the Trust in July 2009, see section 4, IP distribution and related issues.

²³³ Opinion Leader research undertaken for the BBC Trust, November 2009.

²³⁴ In April 2009, Ofcom found that average UK broadband speeds were 4.1Mbit/s and that 70% of broadband users received average speeds of more than 2Mbit/s.

- 5.4.44 ACNI raised concerns regarding bandwidth capacity for households which supported consoles and computers and called for these to be addressed both in practice and in promotional material.²³⁵ Others queried the ability of the network to support delivery of high-bandwidth video content, and in particular, HD.²³⁶
- 5.4.45 There was a range of views and little consensus on how Canvas should address quality of service delivery. In additional information submitted in July 2009, the Executive sought to make clear its approach to content delivery, both 'managed' and 'over the top'.²³⁷ Given the difficulty in guaranteeing reliable, real-time, over-the-top delivery of video data peak times, it set a minimum quality threshold in its original application, which it further developed in July:

All long form (TV) video is subject to the same TV quality standard, whether it is delivered in a managed or over the top manner. The details of this quality standard are being developed, but it is expected to be comparable to a DTT channel, define a minimum bit rate (reviewed periodically) and a requirement to play continuously once started.

...The Canvas device specification will include mechanisms to allow the standard to be met for over the top video, for example by delaying the start of playback until sufficient content has been buffered to enable continuous playback to take place.

There will be clear signalling to the end user at the point of selection if content is available to play immediately with 'managed delivery', or if there may be a delay before it is ready to play.²³⁸

²³⁵ ACNI consultation response, April 2009.

²³⁶ BBC Trust public consultation on Canvas proposals, Public Knowledge, 2009.

²³⁷ Managed delivery is where the ISP uses a system of choosing to improve delivery of certain content to Canvas - an agreement is required between content provider and ISP to achieve this. Over-the-top delivery is where data are delivered to the Canvas device via an ISP's broadband network on the same basis as any other data delivered over the public open internet (email, web video, etc.)

²³⁸ Additional information submitted by the Executive, section 4, IP distribution and related issues, July 2009.

- 5.4.46 Content may also be available through the use of off-air recording (push-VOD), which will deliver a comparable quality to broadcast programmes without placing any dependence on the capability of the network. In cases where network throughput is insufficient, therefore, Canvas would still be available through push-VOD and progressive download capabilities.
- 5.4.47 The use of a Canvas kite mark²³⁹ to signal which ISPs were capable of meeting minimum quality thresholds drew a mixed response. Whilst some argued that it could be an effective solution to quality of service, others were critical about the criteria used to award the standard and regulation of the scheme by the joint venture and pressed for independent oversight.

Single user interface

- 5.4.48 A core principle underpinning Canvas is a desire by its members to establish a common user interface. The Executive argues that this will bring cohesion to the DTT platform whilst guaranteeing consumers a consistent user interface with access to a standardised pool of content.
- 5.4.49 With control of the user interface comes an opportunity to implement best practice for accessibility and usability²⁴⁰ and provide safeguards for vulnerable groups.²⁴¹ Universal accessibility is a core requirement of proposals. The Executive submits that a consistent experience 'is critical to the BBC's ambitions to diminish barriers, both real and perceived, confronting audiences seeking to access new technology'.
- 5.4.50 This is consistent with the Charter and Framework Agreement, which requires the BBC to 'do all that is reasonably practicable' to ensure that audiences can access output in 'a range of convenient and cost effective ways'. Particular requirements in respect of accessibility are placed on the BBC elsewhere. The Communications Act 2003,²⁴² the Framework

²³⁹ Or accreditation scheme.

²⁴⁰ For those audiences who are deaf and hard of hearing, blind and partially sighted, or with dual sensory impairment.

²⁴¹ Children, for example.

²⁴² Section 303.

Agreement²⁴³ and Ofcom's Code on Television Access Services set out provisions for access services on broadcast television for audiences who are deaf and hard of hearing, blind and partially sighted, or with dual sensory impairment.²⁴⁴

5.4.51 Online, the Disability Discrimination Act (as amended) brings similar obligations, but under a legal rather than a regulatory framework. The Audiovisual Media Services Directive,²⁴⁵ meanwhile, whose implementation becomes effective in December 2009, contains obligations on Member States to encourage providers of on-demand services to ensure that these are progressively made more accessible to those with disabilities affecting their sight or hearing or both.

5.4.52 In meeting these obligations, the Executive suggests that Canvas goes beyond the D-Book,²⁴⁶ which sets the receiver specification for Freeview, and seeks to impose a discipline on the user experience, one which conforms to best practice in terms of accessibility.²⁴⁷ This overarching principle is underpinned by five design objectives based on the following characteristics:

- Simple for anyone to use
- With an integrated and seamless broadcast and broadband content
- Familiar, building on existing EPGs
- With a light touch and unobtrusive
- Personal, capable of being adapted by the user

²⁴³ Framework Agreement, clause 59.

²⁴⁴ Subtitling, signing and audio description.

²⁴⁵ It amends and renames the Television without Frontiers Directive, providing less detailed but more flexible regulation. The new directive covers audiovisual media services including video-on-demand (non-linear services). It is implemented in UK law by the Audiovisual Media Services Regulations 2009, SI 2009/2979 (9 November 2009).

²⁴⁶ The D-Book does not currently specify the look and feel of receivers' user interfaces such as electronic programme guides (EPGs). The accessibility specifications focus on the delivery of access services for linear broadcast content and associated metadata. Best practice guidelines also cover product design although there are no guidelines for customisation, VOD accessibility or connectivity to accessibility enabled devices.

²⁴⁷ Canvas would also be DSHS-compliant, supporting the Government's target help scheme to help the most vulnerable during digital switchover.

5.4.53 Table 5.2 sets out the Executive's current thinking as to access and usability provisions envisaged under the proposals, both at launch and as part of subsequent software upgrades. Given that this is not a final position, relative weight has thereby been accorded to this area.²⁴⁸ Although some accessibility features do exist on commercial offerings, the extent of provision envisaged under Canvas makes it a distinctive offering in this respect.

5.4.54 A growing demographic of older and disabled users is disenfranchised by technological advances according to research by Professor Allan Newell.²⁴⁹ Many have multiple minor impairments, reduced sensory and motor abilities or cognitive dysfunction and would benefit from the inclusion in Canvas of specific accessibility features. Common problems faced by blind and partially sighted people, for example, typically fall under three broad categories:

- Finding out what is on television 'now' or 'next'
- Problems navigating television programmes, using the remote control and on-screen menus
- Problems following the content of television programmes

5.4.55 We can therefore see the benefits of such an approach; consistency fosters familiarity, which aids usability, delivering benefits not only to the 11 million disabled people in the UK²⁵⁰ but also to older groups, those less confident with new technology and audiences more generally.²⁵¹

²⁴⁸ Further, the Executive has informed the Trust that it is planning to develop assistive technology software as part of its work on the user interface which will aid the accessibility of Canvas to vulnerable groups, for example, by way of text to speech capabilities. We note that PIXSAN stated in its consultation responses that it has been working with BERR, DTG, The Switchover Help Scheme and charities such as the RNIB to create accessibility technologies including new technology such as Text to Speech for partially sighted people.

²⁴⁹ Newell, Demographic Challenges in User Centric Design, 2009.

²⁵⁰ 11 million, according to the 2001 Census

²⁵¹ According to the RNID, there are over nine million deaf or hearing impaired people in the UK and over 450,000 who are registered blind. With an aging population, these figures are likely to grow. Disability also increases with age; 50% of those over 65 have a disability, compared with 4.3% of children (source, BBC audiences).

Table 5.2: Canvas accessibility and usability features

Feature	Included at launch?	Software upgrade?
Access Services		
Subtitles for SD linear broadcast content	Y	
Subtitles for HD Linear broadcast content	Y	
Subtitles for VOD and other off-schedule content	Y	
Audio description for SD linear broadcast content	Y	
Audio description for HD linear broadcast content	Y*	
Audio description for VOD and off-schedule content (iPlayer standards)	Y	
Signed alternatives for VOD content (iPlayer standards)	Y	
Navigation for access services ¹	Y	
Delivery of a separate AD audio mix via the digital output	N (hardware will be capable, but software upgrade will be required to activate this)	Y
Accessibility Features		
Magnifier with dedicated button on the supplied remote control	Y	
Alternative high visibility user interface ²	Y	
Alternative user interface colours for those with Dyslexia, ADHD or ASD ³	N	Y
Audio feedback ⁴	Y	
Screen typeface that will ensure the core UI is a legible and readable	Y	
Optional opaque interface background to improve text readability and legibility	Y	
Text to speech	N	N**
Support for onscreen remote control and keyboard for switch users ⁵	N	Y
Connectivity		
Support for standard USB HCI drivers for keyboards, gamepads and mouse buttons ⁶	N	Y
A simple API to emulate remote control key presses. ⁷	N	Y
An API for accessibility and second screen style applications ⁸	N	Y
Ability to navigate Canvas metadata using a screen reader	N	Y
Access to the UI using a second high visibility screen ⁹	N	Y
Support for all other assistive technologies ¹⁰	N	Y

* Where a feature is marked Y*, the Executive aims for it to be available at launch, or shortly thereafter, as part of a software upgrade

** Canvas devices will be able to support text to speech, however this will be via a separate device. The Canvas box will enable connectivity via the APIs listed in the table.

¹ Support in the metadata architecture for British sign language and audio description content to be found using specific search key words and as alternative categories

² The ability to swap the colour scheme of the core UI to super high visibility, low luminescence

³ The ability to swap the colour scheme of the core UI to specific colour schemes designed for specific use groups with recognised cognitive disorders.

⁴ That will enable a person with poor vision to determine whether or not an action has been successful. In an attempt to standardise this feature the Canvas feature is closely modelled on the Help Scheme Audio Feedback feature

⁵ The ability for applications to be developed that could sit on top of the core UI and would support alternative switch input devices.

⁶ This will enable the development or adaption of accessibility hardware input devices such switches to control the Canvas UI.

⁷ This will allow any accessible device with a bespoke RC application to pair with a Canvas STB and act as a remote control.

⁸ That allows contextualised control of the device, e.g. 'present a list of available options on a menu, and allow selection of one of them'. This will enable any type of accessible interface to be developed on any accessible device such as a tablet PC

⁹ This will enable the development of more accessible UIs on second devices such as iPhones or Netbooks. These would enable better access for users with very poor vision than relying on a television screen interface that is 10 feet away.

¹⁰ For example, eye tracking devices or sip and puff controllers.

5.4.56 This general point was made by several stakeholders, including the RNIB, which noted:

Canvas presents a real opportunity to bring together broadcast and broadband services in a totally accessible product which could prove very attractive to blind and partially sighted people.

Its support was conditional, however, on a commitment by Canvas to 'aim higher and...strive to implement technologically feasible solutions over and above what markets are now delivering'. The National Federation for the Blind also signalled its support for 'an easy-to-use interface which enables users to locate channels or programmes easily', whilst urging all content providers on the platform to meet minimum standards in respect of the user experience.

5.4.57 The importance of accessibility in relation to digital television can be traced back to early discussions on analogue switch over. In its 2004 report, 'Persuasion or Compulsion: Consumers and Analogue Switch-off',²⁵² the Consumer Expert Group observed:

The accessibility of digital television equipment is a significant concern and barrier to take-up for many consumers, particularly people with disabilities and older viewers, but is not confined to these groups. There is a range of access issues, from those specifically relating to people with disabilities to those which are more general such as usability, in relation to which digital TV generally performs poorly in comparison to analogue television. These issues form a barrier to switchover for a significant proportion of consumers.

5.4.58 In many areas, audiences are poorly served. Electronic programme guides are not readily accessible to many groups, including the blind

²⁵² Persuasion or Compulsion? Consumers and analogue switch-off', a report to the Broadcasting Minister by the Consumer Expert Group, October 2004.

and partially-sighted, and those with cognitive difficulties and impaired dexterity.²⁵³ Yet broadcast media plays an important role in the lives of these groups: a 2006 study by the University of Birmingham, for example, found that 87% of blind and partially sighted people regularly watched television and videos or DVDs.²⁵⁴

5.4.59 This is especially relevant when considering the challenge of navigating both linear and on-demand content. Whilst the design of the EPG does not inform purchasing decisions,²⁵⁵ it does influence satisfaction levels and in particular the ability of users to access the full range of services. This general point was made by Ofcom in its PSB review:

*An expansion of choice can create 'new challenges as well as opportunities. Audiences report some difficulties with finding and accessing content that meets their needs, both on digital television and online....ensuring easy access to and 'discoverability' of public service content is likely to become increasingly important in a digital age.*²⁵⁶

5.4.60 For the vast majority of audiences, long-form VOD content needs to be available via the television screen to gain widespread acceptance.²⁵⁷ Beyond this, it needs to offer a simple intuitive experience, which integrates VOD content with linear services. By embedding these principles, proposals are likely to find favour with a broad demographic beyond the Freeview and Freesat households with internet access initially targeted. Research by Essential for example, found that many viewers 'attach considerable value to innovations that might help to manage that choice, ensuring they can watch the programmes they really want to watch'.

²⁵³ Accessibility issues are increased by on-demand services, which rely on the ability of the user to see and operate on-screen guides and menus.

²⁵⁴ RNIB response to BBC Trust consultation on Canvas proposals.

²⁵⁵ Even Best EPGs don't drive Television Subscriptions, Forrester, 14 July 2006; Trust Unit primary research, omnibus survey, September 2009.

²⁵⁶ Ofcom's Second Public Services Review; Phase One: The Digital Opportunity; 10 April 2008, p. 5.

²⁵⁷ VOD report, BBC research, TU research, VM iPlayer stats.

5.4.61 Several stakeholders qualified their support for Canvas with certain conditions. The Audience Council for Northern Ireland was one of many entities which underlined the importance of accessibility in its submission:²⁵⁸

To appeal to a wider audience of television viewers it is essential that Project Canvas is easy to use [and] easily learnt and includes features which make it simple and rewarding to find and access relevant content.

5.4.62 Other stakeholders highlighted the importance of this area including one who noted that it had every expectation that the usability needs of diverse groups would be covered by the Canvas specification. Arqiva meanwhile was 'particularly pleased to see that it is the intention for Canvas to conform to best practices in terms of accessibility, as this is an area where existing online content services do poorly.'

5.4.63 We found consensus on the need for simple and accessible design but far less agreement on how this could be achieved. Stakeholders were divided on the merits of mandating the user experience, one, Sky noted:

Freeview does not have a uniform UI, and differences between the UI's of different boxes, and in particular, their ease of use, is often referred to in product reviews as a key distinguishing feature. Notwithstanding these differences, Freeview has been a success.

5.4.64 Another stated that the Canvas joint venture should be explicitly precluded from controlling the user experience, on the basis that intense innovation and development needs to occur in this area, and it should therefore be left to market forces to evolve.

5.4.65 Avtrex agreed that metadata should be standardised but cautioned against mandating its presentation to the user, arguing that Canvas should instead 'allow for innovation and evolving understanding of best practices and presentation to the user.' In its submission,²⁵⁹ Virgin argued that a mandatory user interface was not required to reduce

²⁵⁸ Audience Council for Northern Ireland, submission to Canvas consultation, 2009.

²⁵⁹ Response to the Executive's additional information documents, 11 September 2009.

barriers to entry, to underpin the Canvas brand or to ensure that the benefits of IPTV were understood and enjoyed by all audiences.

In summary our view is that by mandating a single, homogenous core UI for Canvas, the Executive risks stifling innovation in what is a dynamic and rapidly evolving area: the search and navigation of linear and non-linear content.

5.4.66 Others, however, welcomed a more prescriptive approach; users in particular valued ease of use and for many, this also extended to the device.²⁶⁰ Our audience research found a clear appetite for an intuitive EPG to aid navigation.²⁶¹ Many believed the inclusion of provisions to aid usability was key, one noted:

Please can you take account of, at this stage, the needs of people with disabilities, such as [me], to ensure accessibility is assured right from the outset so that when any such provision becomes available, it is also completely accessible and usable by as many people as possible?

5.4.67 Several industry stakeholders have argued that Freeview is not hampered by the absence of a single EPG. We accept this and recognise that certain consumers grasp and adopt new technology relatively quickly. We make the point, however, that as content offerings become more complex, a single user experience that goes beyond basic principles and conforms to best practice in terms of usability and accessibility is likely to grow in importance. We accept the limitations of commercial provision in this area and recognise the value their inclusion brings not only to under-served groups but also to audiences more generally. By exceeding the duties placed upon the BBC with regard to access provisions, therefore, Canvas potentially sets itself apart from alternative products and promises to deliver value to all licence fee payers.²⁶²

²⁶⁰ In addition to the user experience.

²⁶¹ Opinion Leader research undertaken for the BBC Trust, November 2009.

²⁶² By way of quality and distinctiveness.

5.4.68 It may be, however, that some degree of flexibility on the UI that goes further than the Executive envisaged in its application, may be desirable, without compromising the core principles of usability and access.

Parental controls

5.4.69 Consumer expectations of quality may also extend to editorial standards.²⁶³ Editorial control is limited by reference to legal limits, as set by applicable law and the Audiovisual Media Services Directive,²⁶⁴ whose implementation becomes effective in December 2009.²⁶⁵ Canvas will aim at minimum legal compliance rather than seek to impose standards on the content it carries. Users seeking to block access to unwanted content would instead have to rely on parental controls.

5.4.70 We found appetite among audiences and stakeholders, however, for some kind of guidance in respect of the different type of content that is available. Our audience research revealed a clear preference for a number of safeguards, such as built-in virus software and parental controls.²⁶⁶ In its submission, the Broadband Stakeholder Group drew attention to the risk of allowing access to harmful or offensive material, urging the Trust to pay 'very close attention' to this area.

5.4.71 Several stakeholders assumed that BBC participation in the joint venture would of itself give rise to higher editorial standards and many expected the BBC to assume the role of a 'trusted guide'. One submitted that any content standards in respect of Canvas should align with the regulatory

²⁶³ The joint venture will decide which IPTV services can be made available on the platform; the basis of its decisions would relate only to technical integration and compliance with minimum standards.

²⁶⁴ It amends and renames the Television without Frontiers Directive, providing less detailed but more flexible regulation. The new directive covers audiovisual media services including video-on-demand (non-linear services). It is implemented in UK law by the Audiovisual Media Services Regulations 2009, SI 2009/2979 (9 November 2009).

²⁶⁵ Linear channels would require an Ofcom licence to gain access to the linear section of the Canvas EPG.

²⁶⁶ Opinion Leader research undertaken for the BBC Trust, November 2009.

regime whilst underlining the importance of safeguarding audience confidence and trust.²⁶⁷

- 5.4.72 Others were keen to ensure that the imposition of minimum technical standards would not allow the joint venture to restrict access to the platform and many cautioned against the creation of an editorial gatekeeper and custodian. Elsewhere, stakeholders drew attention to online identity, security and the use of 'take down' policies, which many believed required further consideration.
- 5.4.73 The importance of safeguards and the risk from exposure to potentially harmful or inappropriate material on the internet was highlighted by the Government in its report on Digital Britain.²⁶⁸ The report drew on the Byron Review,²⁶⁹ which found, inter alia, that parental decisions about what is harmful and inappropriate, as opposed to illegal, are largely subjective. Among Byron's recommendations was better regulation in the form, wherever possible, of voluntary codes of practice.²⁷⁰
- 5.4.74 We recognise that if Canvas is to provide users with internet access, it must combine a secure means of so doing with an experience that provides appropriate safeguards. Whilst Canvas will support parental controls,²⁷¹ we also recognise the value of some sort of guidance or signposting. This is particularly relevant when considering the relatively low number of parents who make use of password protection devices on their television sets to block unwanted content. In its Communications Market Report 2008, Ofcom found that only 31% of parents with children aged 8-11 years and 26% with children aged 12-15 claims to use the PIN or password protection devices on their television sets to block unwanted content.²⁷²

²⁶⁷ Confidential stakeholder response to Canvas consultation, 22 April 2009.

²⁶⁸ Ofcom, Digital Britain Final Report, June 2009, p.203, paragraph 68.

²⁶⁹ Safer Children in a Digital World, the report of the Byron Review, 27 March 2008.

²⁷⁰ Ofcom, Digital Britain Final Report, June 2009, p. 203, paragraph 68.

²⁷¹ Based on information contained in content metadata supplied by content providers

²⁷² Ofcom, Communications Market Report, 2008, pages 15 and 231.

Subscription free access to linear and on-demand services

5.4.75 The Executive submits that a simple to use proposition, available on a free-to-air basis, is critical to the distinctiveness of proposals. Respondents to our consultation generally agreed that the BBC should improve access to its on-demand services and many supported the concept of a subscription-free service. The Audience Council for Northern Ireland welcomed a subscription-free offering, noting that 'on-demand television is particularly attractive to audiences that do not already have access to these benefits through a subscription services.' In formulating its response, ACNI engaged different audience groups and individuals, one of whom observed:

The unique selling point for audiences is that Project Canvas provides greater access to programmes without a subscription.

A similar point was made by several stakeholders, including Freeview which, in its response, noted:

In order to secure the long term future of the DTT platform there needs to be an upgrade path for existing Freeview households and we welcome the fact that under Canvas, consumers who've chosen to receive free-to-air digital television and radio will have the opportunity to enjoy a whole new range of audiovisual services without needing to switch TV provider. We firmly support the aim of not leaving households unwilling or unable to pay a subscription for these services at a disadvantage.

5.4.76 Nearly a third of respondents to our public consultation highlighted subscription-free access as a main point of difference. A few, however, questioned whether Canvas marked a shift from free-to-air PSB content by mandating an internet connection and some were critical of having to pay for a broadband subscription. One noted:

I would rather pay my licence fee and get this service from the BBC than pay another service provider who will include in its charges the cost of receiving BBC services. I do not want to pay twice!

5.4.77 In general, however, the combination of features in a single, subscription-free product was perceived to be of value.²⁷³ In the quantitative phase of the study, the opportunity to access all Freeview channels and radio stations was the single most important feature, ahead of PVR and HD, with more than eight in ten (83%) expressing an interest and just over one third (35%) 'very interested'.

5.4.78 Its appeal was highest among Freeview households with broadband, many of whom perceived Canvas as 'Freeview with added functionality'. By contrast, pay-television subscribers expressed some interest in proposals but not a corresponding willingness to cancel their subscription. The propensity of these households to switch may be curbed by competitive pricing packages of triple/quad-play offerings from commercial providers.²⁷⁴

Provision of customer support

5.4.79 Provision of support is important, particularly for vulnerable groups. This is especially so given the technical nature of the proposition. Set up and maintenance were identified as a concern in our audience research; those with pay-television subscriptions in particular questioned whether there would be assistance for customers. Several industry stakeholders made similar points; others observed that this area extended to product configuration, diagnosis and repair. A few noted that, once a device is connected to a broadband network, these issues are magnified. In its submission,²⁷⁵ Alcatel-Lucent advocated the use of support mechanisms to eliminate or reduce fear of adoption (particularly among elderly groups and low-income households).

5.4.80 The Executive envisages a light operational support model, which centralises and routes calls, guiding customers to the appropriate third party depending on the nature of their query.²⁷⁶ The model also aims to reduce unnecessary calls to ISPs, thereby easing the burden on their support costs. The Broadband Stakeholder Group suggested that further

²⁷³ Opinion Leader research undertaken for BBC Trust, November 2009.

²⁷⁴ Trust MIA of Canvas proposals, December 2009.

²⁷⁵ Submission to BBC Trust Canvas consultation, 17 April 2009.

²⁷⁶ For example, content provider, payment provider, ISP and equipment vendor.

information on the management and resourcing of the call centre would be useful. The Voice of the Listener and Viewer accepted that support was necessary, but raised concerns over the costs of supplying this to customers.

- 5.4.81 We recognise the importance of a simplified, centralised structure in reducing barriers to use, and welcome its inclusion in proposals, but also accept the limitations of 'pass through' telephone-only support, particularly for vulnerable groups.

Lower entry barriers for content providers

- 5.4.82 Canvas will allow providers to exploit an affordable route to a wider market, enabling them to establish new business models and broaden their audience base.²⁷⁷ Greater access to a wider range of content delivers improved choice and broader value to licence fee payers, allowing providers to secure maximum value from their material.

- 5.4.83 A wide range of commercial, civic and community providers delivers public service content online, often in areas where the economics of linear television are challenging, and several signalled their support for proposals. Many are committed to enabling the widest access to their material across all platforms, but often lack the means to do so. One, the British Film Institute, noted:

The BFI has assets for which we know there is ever growing demand. What we can be certain of is that assuming consumers do warm to the notion of IPTV, then take up for this content is almost certain to be significant.

- 5.4.84 Broadening access to the television set has gained widespread support. The Government is keen to see local television develop on a multi-platform basis and play a more active role in the wider local media

²⁷⁷ Canvas potentially offers lower barriers to entry for content providers, allowing anyone with a website access to a Freeview audience.

ecology.²⁷⁸ Several stakeholders saw a role for Canvas in bringing about these developments.²⁷⁹

5.4.85 Media Trust believed that it could be used 'by any number of community-based channels and local television stations to distribute content cheaply and easily directly to television sets in millions of homes. It could also provide regional and local newspapers with a cheap and simple route to market to millions of homes across the country, with opportunities to generate new revenue streams and win new audiences', but cautioned that this would 'only be the case if free access is granted to the widest available group who wish to provide content using the Canvas standards.' Another similarly recognised the potential of Canvas to help PSBs extend their offer beyond the core broadcast platform.²⁸⁰

5.4.86 In its response, the Audience Council for Northern Ireland anticipated 'significant opportunity in the provision of enriched internet content to provide information about public services and to support digital civic participation.'²⁸¹ The benefits of a richer and more varied range of services were highlighted by Ofcom in its pay television review:

*It is not difficult to imagine a world in which libraries of movies are accessed more directly, via various forms of IPTV or internet download. The enhanced level of choice this would offer is likely to be highly attractive to consumers....innovation will only take place if the right content is available, with a payment mechanism that is convenient for consumers.*²⁸²

²⁷⁸ DCMS, Digital Britain Final Report, June 2009.

²⁷⁹ The Trust notes that the BBC will not control the commercial behaviour of the Canvas joint venture and decisions by the Joint Venture will thereby be made on a commercial basis.

²⁸⁰ Confidential stakeholder response to Canvas consultation, 22 April 2009.

²⁸¹ A similar point was made in the Digital Britain report, which recognised the need to consider how and to whom services are targeted and whether an online only or multi-channel approach is needed, rather than a 'one-size-fits-all approach'. Digital Britain, Final Report, June 2009, p. 211.

²⁸² Pay TV phase three document, proposed remedies, consultation document, p.8, paragraph 1.40, 26 June 2009, Ofcom.

5.4.87 Ofcom went on to note 'clear evidence of demand for access to premium content on DTT-based platforms', going on to suggest that 'the success of the BBC's iPlayer service, and the level of interest in Project Canvas, suggests that the demand for pay IPTV services based on premium content may be significant.'²⁸³

We consider further particular points and issues as to entry barriers to content providers below.

Content re-authoring

5.4.88 In order to deliver the widest range of content and services, Canvas will need to ensure that access to the platform is both easy and affordable. Existing VOD services are delivered almost exclusively online and developed using standard internet technologies, the two most common being HTML JavaScript and Flash.

5.4.89 The development of a single technical standard to reduce re-authoring costs was welcomed by several stakeholders. By providing support for these technologies, Canvas will, in most cases, only require an adaptation of the source code, whereas trans-coding to MHEG (for D-Book 6 devices) demands a full re-write, incurring greater effort and expense.²⁸⁴ Further, Flash and JavaScript developers are more common in the market than those with MHEG expertise. This is particularly relevant for smaller, non-broadcast players, which may have limited access to individuals with MHEG expertise.²⁸⁵

²⁸³ Pay TV phase three document, proposed remedies, consultation document, p.8, paragraph 1.40, 26 June 2009, Ofcom.

²⁸⁴ To content providers, even where a full re-write is necessary for Canvas, it is expected to be significantly easier compared with MHEG, whereby each content and service provider is required to create bespoke services authored in broadcast standard technologies, rather than commonly used web authoring tools, Value Partners, technical annex to Canvas report, 3 August 2009.

²⁸⁵ Canvas would also offer a software developer kit to enable content providers without standing capabilities to quickly integrate their existing web services with the platform, source: Additional information submitted by Executive, section 2, EPG and enabling access for content and service providers, 24 July 2009.

5.4.90 Taken together, this could, potentially, increase the range and variety of content available via Canvas, particularly from smaller companies and not-for-profit organisations, delivering wider benefits for audiences and licence fee payers.

Fees and cost recovery

5.4.91 Fees were an area of concern for several stakeholders; the Executive maintains these will be charged on a cost recovery basis, but many noted the potential to generate significant revenues and pressed for greater certainty. The Executive sought to clarify its approach to fees in additional information submitted in July 2009:²⁸⁶

- They would be levied on a 'cost recovery' basis
- They would vary according to the type of content, reflecting the different cost bases for IP-linear channels, on-demand services and web-based interactive content
- They would be the same for all providers of a given type of content

5.4.92 One or two, however, envisaged pressure by joint venture partners to recover costs via higher access fees. In the absence of further explanation on the quantum of fees, many felt unable to properly assess this area or the impact on their access to the Canvas platform. We understand the concerns of stakeholders in this area and the difficulties in assessing access fees without knowing the level at which they will be set. If Canvas charges for access in a way that limits the ability of providers to access the platform, some of the positive benefits associated with the proposals may be lost. It is important therefore that costs are transparent and the principle of cost-recovery is protected.

Terms of access

5.4.93 Canvas will not impose editorial standards on the content it carries but several stakeholders suggested that it may employ technical criteria to block or restrict access. Others feared it would use such levers as capacity restrictions and control of the UI to shape the platform in its own interests. In its submission, Arqiva noted that 'the proposal raises

²⁸⁶ In response to the Trust's request for further detail in key areas of the application.

the prospect of a 'gatekeeper' function with implications both for a reduction in the range of content and services available to the consumers who purchase Canvas-enabled receivers and for the abuse of the gatekeeping function for anti-competitive purposes.'

- 5.4.94 PACT acknowledged the potential of Canvas to accelerate take-up of on-demand content but cautioned that if it unfairly excluded third party services, it may 'restrict the development of those services, dampening the growth of the nascent on-demand market and raising potential competition issues.' Others raised concerns that they would be required, as a condition of access, to use a mandated CDN provider.

Visibility and prominence

- 5.4.95 All respondents highlighted the importance of fair and reasonable access. Several pressed for a better understanding of the rules governing visibility and some suggested that control of the UX would place venture partners in a position of editorial control, which they may exploit in favour of their own services. Others raised concerns that a mandated user interface would favour PSBs and may not ultimately coincide with viewers' interests. The Executive has set out several underlying principles in respect of visibility and prominence:

- Linear DTT channels will be determined by existing DMOL guide numbers.
- Where IP delivered linear channels and on-demand services seek to join the platform simultaneously, an objective measure of allocation will be used (for example, but not limited to, the reach of services). Once operational, listings to be allocated on a 'first-come, first-served' basis, potentially within genre categories.
- For web and interactive material, users would be able to browse all content, ordered by objective measures (categories, alphabetical, most used).

- 5.4.96 We welcome the use of objective measures to prevent undue prominence of major existing services, and accept that this area is subject to further work by the joint venture partners. We also acknowledge the concerns of some stakeholders that even a 'first-come,

first-served' approach may give joint venture partners preferential access to the menu ahead of other providers.

Payment models

- 5.4.97 Several respondents were critical of a lack of clarity on monetisation options and the requirements necessary to deliver these. Many, including Pact, suggested that Canvas accommodate different business and revenue models. Others went further, arguing that arrangements did not give sufficient weight to the interests of commercial content aggregators. Several pressed for a centralised system that simplified the payment process for users and providers alike.
- 5.4.98 Others called for the infrastructure to support paid services to be available from launch. One, FremantleMedia observed, 'experience elsewhere shows that it is difficult if not impossible to take a delivery platform which has become established as free and reposition it subsequently as a paid-for service'. Others sought to clarify the use of DRM and one or two pressed for the inclusion of conditional access hooks²⁸⁷ at launch.
- 5.4.99 The Executive agreed with stakeholders that Canvas should not prevent the development of pay models on the platform,²⁸⁸ and set out its support for third parties to run a wide range of subscription and pay-per-view services.²⁸⁹ Whilst signalling support for conditional access, however, the Executive does not believe it appropriate for a 2010 launch product, preferring to consider the option 'as part of the longer-term Canvas roadmap'.
- 5.4.100 The inclusion of a wide range of payment models will deliver benefits to audiences via greater choice. From a public value perspective, we would not, therefore, expect Canvas to preclude their development on the

²⁸⁷ Conditional access hooks are just an enabler to download a particular conditional access technology into a device so that it will work with the existing software in that device.

²⁸⁸ Additional information submitted by Executive, section 2, EPG and enabling access for content and service providers, 24 July 2009.

²⁸⁹ Whilst this did not extend to a centralised payment system, we understand that the joint venture is considering ways in which to facilitate billing (by, for example, ensuring each Canvas device has a unique ID).

platform and consider that this area may benefit from further engagement with the DTG or other industry bodies.

Use of audience data

5.4.101 Some stakeholders expressed concerns regarding the handling of usage data by the joint venture, pressing for disclosure only at an aggregate level. In further information, published in July 2009 by the Trust, the Executive made clear that aggregated data will be made available but only with the full agreement of content providers.²⁹⁰

5.4.102 In conclusion, quality and distinctiveness is clearly a key area for the delivery of public value. Although issues are raised as to quality assurance and further clarification may be required, the accessibility and usability of the interface, coupled with non-subscription access to a broad range of content and services, and progressive technical standards, demonstrate clear potential value.

Will proposals benefit consumers and citizens?

5.4.103 As set out in section 5.2, proposals have potential citizen and consumer benefit and thereby impact. The concept of Canvas has attracted support from a broad church and, given clear consumer demand for its different elements, our overall conclusion is one of positive benefits. By evolving the capabilities of DTT, Canvas will enhance the free-to-air offer, helping to ensure parity with alternative platforms and delivering the benefits of greater choice. Consumers regard viewing via the television as significantly more appealing than via the PC. By providing for delivery of on-demand content to the television, Canvas also contributes to the value placed on family or group viewing.

5.4.104 We recognise that initial take-up is likely to be gradual but over time, expect its impact to be more significant helping to combat the threat of disintermediation, delivering the benefits of new technology to all audience groups and acting as a stimulus for broadband adoption. The inclusion of access provisions, meanwhile, brings benefits not only to

²⁹⁰ Additional information submitted by Executive, section 2, EPG and enabling access for content and service providers, 24 July 2009.

underserved groups but also to audiences more generally. By exceeding the duties placed upon the BBC in this area, therefore, Canvas potentially delivers wide-ranging benefits over different time horizons.

Does Canvas represent an appropriate use of licence fee funds?

5.4.105 A key component of proposals is their ability to deliver value for money to licence fee payers. As part of our assessment, therefore, we had to satisfy ourselves that BBC involvement represented an appropriate use of licence fee funds. The original application was based on shared costs between four partners under which the BBC would incur costs of £6 million over a five-year period.

5.4.106 These original calculations were revised and resubmitted to the Trust for consideration. The total cost of BBC participation in the venture over the period under review now stands at £24.7 million based on four partners sharing an equal share of total costs.²⁹¹ Clarification as to the change in costs is set out below.

5.4.107 In summary, the Trust considers that the Canvas proposal represents value for money for licence fee payers, by providing a new, cost-efficient way of allowing viewers access to previously transmitted programming as well as other additional content and internet access, coupled with the inclusion of accessibility and usability features.

Our approach to assessing cost and value for money

5.4.108 The Canvas proposal can be seen as part of a general obligation on the BBC to make its content as widely available as possible, and as part of its ongoing commitment to new and emerging technologies. In assessing public value, it is only by considering the costs involved alongside the benefits anticipated that we can conclude on value for money. In undertaking our assessment, we have considered the following key questions:

²⁹¹ The Executive maintains that the revised figures take into account a more detailed analysis of costs, based on information which was not available at the time of submission.

- What is the **cost to the BBC** of the Canvas proposal?
 - How much will the proposal cost to deliver, taking account of different numbers of partners in the joint venture?
 - Are there any indirect financial costs or benefits of the proposal?
- Does the proposal offer **value for money**?
 - What value will be created for the proposed spend?
 - How does this compare with other comparable BBC offerings?

5.4.109 We have exercised some caution in making direct comparisons with existing BBC content-based services due to their fundamentally different nature. The current proposals are not concerned with the origination of new content; rather, they are a delivery mechanism for existing BBC and other content.

5.4.110 We have questioned the Executive on its cost estimates in order to understand the figures they contain, how they have been prepared and the risks affecting different components, so that we may come to a view as to their reasonableness. We note that the numbers were prepared, where appropriate, using the principles of UK GAAP and the internal financial controls operating within the BBC are, more generally, subject to review by the BBC's own internal audit function, in addition to the annual external audit.

5.4.111 Further we note that, subject to Trust approval, the costs provided by the Executive will form the basis for agreeing all future related budgets.

5.4.112 Our assessment is based on four partners as set out in the Executive's application. Where necessary, we have considered the cost adjustments which would be required if there were a greater number of partners. Based on information provided by the Executive, we would not expect less than four partners. Further, as this is a joint venture with many partners and funding streams, we have confirmed that all costs were prepared on a full-cost basis rather than the marginal basis used for previous BBC-only propositions.

Clarification on the change in costs

- 5.4.113 Several stakeholders remain dissatisfied with the revised costs information provided by the Executive. Sky's main concern in this area is that 'the BBC has not disclosed all relevant costs, particularly those in developing the proposals prior to the ongoing costs of operation.' IP Vision considers the presentation of the costs to be misleading, and 'would have expected the figures to have been presented on a comparable basis to that information published previously and a variance in style presented accordingly.'
- 5.4.114 Another stakeholder pressed for the full costs incurred so far by the BBC on Canvas to be publicly declared in the interests of transparency. One believed that some of the revised figures were inaccurate in that the total expenditure on promoting the Canvas brand would be far greater than just the £48 million in the published costs. Others queried the change in costs.
- 5.4.115 The Executive's initial application provided that the cost of the proposals was £6 million over five years, which represented the incremental cost of Canvas when considered alongside Freesat. The most recent figure of £24.7 million represents the full standalone cost of the proposal. The Executive has subsequently explained that the original cost (i.e. net of Freesat) at the time of the application was approximately £16 million and Canvas was costed alongside Freesat to highlight the associated synergies.
- 5.4.116 These two different approaches give the impression that costs have increased by 400%, which was asserted by one stakeholder. As clarification, the £6 million and £24.7 million figures are not directly comparable - the £6 million includes the benefit of Freesat whereas the £24.7 million²⁹² represents the cost of the Canvas as a free-standing proposition. We understand that the revised costs are based on a more detailed and thorough examination of this area, relying less on broad estimates and more on quantifying different cost areas and incorporating information that became available in the intervening period.

²⁹² Based on the £98.6 million joint venture total split four ways.

5.4.117 We consider that the original figure provided by the Executive in its application was not entirely accurate or sufficiently developed (having risen by around 50%) and note the concerns raised by stakeholders. We are also mindful that proposals involve investment in a new and untested area for the BBC such that anticipating the exact costs is somewhat difficult.

5.4.118 Our following detailed assessment is based on the £24.7 million figure provided by the Executive. The Executive has also provided further detail on costs already incurred in respect of development work on IPTV (see annex II). The Trust has been assured by the Executive that these costs were incurred in respect of general research and development work. They do not, therefore, form part of our assessment.

Overall cost analysis

5.4.119 The operating expenditure the BBC will be incurred in providing the full proposal in the application (based on four partners with an equal share): £24.65 million over 5 years = £4.9 million per annum. The BBC's total UK expenditure on public service activities was £3,345.6 million in 2008/09. The expenditure of the Canvas proposals thereby amounts to 0.15% of the annual BBC expenditure. The cost to the BBC is explored further according to a greater number of joint venture partners below:

Table 5.3: Costs for individual partners

Costs for individual partners (equal share)*	(Oct-Dec) CY 09	CY 10	CY 11	CY 12	CY 13	(Jan-Sept) CY 14	BBC cost
Four partners	1	7.2	6.3	4.4	3.9	1.9	24.7
Five partners	0.8	5.7	5	3.6	3.1	1.5	19.7
Six partners	0.7	4.8	4.2	3	2.6	1.3	16.4
Seven partners	0.6	4.1	3.6	2.5	2.2	1.1	14.1

* NB: The figures do not include the costs of research and development to the end of August 2009.

5.4.120 Accordingly, the cost of the proposals to the BBC decreases the greater number of joint venture partners. The cost to future joint venture partners post launch of the Canvas proposals would likewise be equally shared among the partners, including retrospective contribution to costs already incurred. Further, although the costs are spread over five

years (with the proposal only operational for four of these years), it is still instructive and were the analysis to be extended beyond the five-year period under consideration then we would expect annual costs would fall further.

5.4.121 Partners of the joint venture will contribute (in cash) equally to the operating and marketing costs of Canvas by each paying the same contribution in the form of a service charge invoiced to the partners by the joint venture on a monthly basis. Where partners are able to offer in-kind contributions in lieu of cash contributions, the Canvas board may consider accepting such in-kind contributions but only in circumstances where:

- the asset being offered by way of in-kind contribution has been identified as an asset required by the joint venture, as contemplated by the current business plan; and
- the value of such in-kind contribution can be objectively determined.

5.4.122 This funding model, which is also used in Freeview, allows the commercial joint venture partners to deduct the service charge from their gross revenues for tax purposes and will also permit the Canvas joint venture to reclaim tax. This would not be the case if all partners fund the venture's operations by way of subordinated loans (with a very low prospect of recovery), as originally contemplated. Every new partner will need to pay a proportionate share of the costs already incurred by the joint venture and share future costs on an equal basis with the original partners. This new proposal does not change the underlying corporate structure of the joint venture, the service charges invoiced to third parties or its non-profit objective.

5.4.123 The BBC has proposed that it will frontload investment in the joint venture on behalf of the commercial PSBs only during year one, by contributing towards the service charges invoiced to commercial PSBs. It is thereby effectively granting a loan on a commercial basis next to the funding mechanism described above. This initial frontloading will be levelled out to ensure that over four years, all PSB contributions are of equal value. The BBC will only consider frontloading another PSB's contribution towards the total costs of the joint venture in circumstances where it is confident it has taken every precaution

reasonably necessary to ensure that frontloaded contribution will be recouped.

5.4.124 The Executive has informed us that this arrangement sits outside the shareholders' agreement, and that the commercial terms applied to any such 'loan' have been benchmarked against, and are in line with, similar loans available in the market.

5.4.125 The joint venture will also be investing approximately £5 million between October 2009 and any final approval of Canvas by the Trust. Joint venture partners will fully pay their share of that funding under a cost sharing agreement.²⁹³ The Trust is mindful, however, of the risks associated with future repayments or recovery, which may result in additional costs accruing to the BBC.

5.4.126 Separately, the BBC has invested in ongoing R&D and feasibility work, investigating the viability and potential of internet-connected television.²⁹⁴ Costs incurred by the BBC in undertaking this work (until end of September 2009) will not be subject to later reimbursement by the Canvas partners on the basis that they represent expenditure that the BBC would be incurring pursuant to business as usual activity.²⁹⁵

Cost of Canvas to the Joint Venture

5.4.127 The table below sets out the detailed annual costs of the proposals to the joint venture as a whole. Further explanation as to the individual cost areas are set out at annex II. On the basis that there are four joint venture partners, BBC costs represent a quarter of the total amount.

²⁹³ The BBC is assuming the financial risk of Canvas not being approved by the Trust because, in the event the preliminary conclusions are not favourable, all the assets created between October 2009 and the date of such preliminary conclusions will remain with the BBC.

²⁹⁴ The Executive has informed us that this comprises R&D spending which is relevant to IPTV and DTT more generally - for example it has assisted the inclusion of a return path in DVB-T2 set top boxes and the development of flash technology used in iPlayer on the Wii platform. The Executive submits that the investment would have been incurred by the BBC even in the venture's absence and is classed as 'Business as Usual' activity.

²⁹⁵ In addition, the BBC has incurred approximately £0.7 million to support the Canvas non-service application (as set out at annex II).

Table 5.4: Annual cost of proposals

Workstream	CY 09 (Oct- Dec)	CY 10	CY 11	CY 12	CY 13	CY 14 (Jan - Sept)	Total
JV Overhead *	146	2,632	2,518	2,391	2,436	1,860	11,983
Marketing	124	10,515	15,287	10,673	8,965	2,855	48,420
Technology	3,024	11,515	5,010	3,526	4,037	3,194	30,306
Operations	0	2,756	4,078	4,256	3,917	2,636	17,643
Product Management	449	661	512	523	533	407	3,086
UX Design	311	1,156	760	692	704	538	4,160
Contingency	0	0	0	0	0	0	0
Total Cost	4,054	29,235	28,166	22,060	20,593	11,491	115,598
Cost Recovery	0	-570	-3,083	-4,291	-5,092	-3,941	-16,976
Balance	4,054	28,665	25,083	17,769	15,501	7,550	98,622

* Includes JV leadership team, support staff and accommodation, legal fees, etc

5.4.128 Canvas has three main reach projection scenarios²⁹⁶. All the costs above, and throughout this document unless otherwise stated, are based on an October 2010 launch date.²⁹⁷ There are no anticipated additional rights costs as a result of Canvas. Rights deals are generally negotiated so that payments cover all platforms so the Executive has informed us that the rights to show content on DTT and online already exist. The cost of Canvas to the BBC would be higher if this were not the case.

Cost recovery in relation to Project Canvas

5.4.129 In order to mitigate the cost of Canvas to its joint venture partners, some of the planned investment is expected to be recovered. The charges cover various activities, including listings, web services for technical compliance, manufacturer licence fees and so forth (as set out in detail in the table below). The Executive has explained that, where possible, charges have been benchmarked against other platforms. However, the resulting fees are, by design, currently set at the lower end of this spectrum and will only therefore recover a fraction of the total

²⁹⁶ Based on work undertaken by Value Partners and set out in section four, on our assessment of reach.

²⁹⁷ If there was a delay in launch, this may result in a reduction of spend over the current licence fee period such that a small amount of spend would be deferred until the following licence fee period.

overall cost of Canvas. We recognise however that such an approach is consistent with the objective of making the platform attractive to a larger number of content and service providers.

5.4.130 As it stands, the table below summarises the various types of recovery currently being examined and some of the associated details:

Table 5.5: Cost recovery

Recovery type	Description	Precedents?
Content Provider	<ul style="list-style-type: none"> • Flat fee charge to run VOD service on Canvas • Includes a slot in on-demand section of UI and metadata integration for Canvas level search etc. 	<ul style="list-style-type: none"> • N/A for closed platforms • Revenue shares more common on web platforms
Linear EPG	<ul style="list-style-type: none"> • Flat fee for new IP-delivered channels added to EPG • Flat fee for broadcast channels who wish to use advanced features of Canvas linear EPG (all Freeview channels will appear) 	<ul style="list-style-type: none"> • Freesat [x] per channel • Sky £70k-£3m per channel
Web Apps	<ul style="list-style-type: none"> • Fee to be registered developer (supported with APIs etc.) • Fee to list applications in directory • Fee for pin protection (or other Canvas functionality needed) 	<ul style="list-style-type: none"> • DMOL – no EPG charges • iPhone: [x] • Sky: [x]
ISP charges		• N/A
Manufacturer licence fees	<ul style="list-style-type: none"> • Per box licence fee for use of Canvas software • Potential requirement for additional marketing support 	<ul style="list-style-type: none"> • Common for software components • Not charged by Freesat
Other Sources	<ul style="list-style-type: none"> • Potential fees from reports or live data services • Payment from preferred service providers 	

Measuring the value for money of Project Canvas

5.4.131 Having considered the nature of some of the detailed costs within the proposal, we now turn to the questions of value for money and cost efficiency. While it is possible to measure the costs of BBC services or activities in financial terms, measuring the value created by the proposals is more subjective and thereby difficult to calculate definitively in numerical terms. This is because there are many different ways in which value can be assessed, some of which lend themselves to mathematical expression and some which are more intangible in nature and for which financial measurement may not be appropriate or suitable.

5.4.132 In assessing the value for money of the proposals, we have been mindful of measuring the value of the delivery mechanism itself without undue influence from the actual value of the content to be delivered. There is also the additional difficulty that most approaches are dependent on the reliability of the future reach and consumption estimates.

5.4.133 During the initial public consultation on the proposals, 74% of individual respondents considered that Canvas was a good use of licence fee money.²⁹⁸ Since the public consultation was based on the initial lower costs figures provided by the Executive, we have given relative weight to these conclusions, bearing in mind that views may vary according to the revised cost figures. Our analysis on the value for money is thereby essentially based on analytical and comparative analysis. The following tables illustrate this comparative analysis.

5.4.134 As a starting point, it is worth examining the per annum investment in Canvas compared with other broadly comparable BBC services or delivery mechanisms, despite the difficulties involved of finding appropriate benchmarks.

Comparative Table 1

Service	Total costs per annum (£ million)	Source/Basis
Canvas	4.9	BBC Project Canvas team.
Nine hr BBC HD service	2.5*	BBC HD Service Licence Budget 09/10, BBC Trust website.
iPlayer	5.1**	BBC Online Service Licence Budget 09/10, BBC Trust website (includes build out/development charge).
DTT/Freeview	[x]***	Budget for 2009/2010 (source: BBC Finance)

* This service licence does not include Distribution or Infrastructure / Support costs. For 2008/2009 these costs were £2.7 million and £1.9 million respectively (08/09 BBC Annual Report)

** This forms a part of the overall BBC Online service licence and so does not include Distribution or Infrastructure / Support costs.

*** Includes Distribution and Marketing costs. Total costs set to rise over the period of the Canvas proposal

²⁹⁸ 66% say yes and a further 8% think yes but with some reservations.

5.4.135 It is important to note that both HD DTT and iPlayer were costed on a marginal basis. By comparison, Canvas used a full cost basis, making comparison more difficult. However, the comparisons are relevant as they allow for a fuller picture of the financial context within which these proposals must be considered.

5.4.136 As a delivery rather than a content-based proposal, a straightforward comparison of the total cost of Canvas and the number of hours of original output that could have been funded in its place does not seem appropriate, as Canvas will not offer original content per se.

Analysis of costs against the reach projections

5.4.137 Most of the costs associated with Canvas, though not 'fixed', can be planned and so the level of variability of these costs under different reach projections appears to be low. In general we see, like many new proposals, a similar pattern emerging where costs are largely fixed, so costs per user hour start high in the early years but fall away as volumes grow. This implies that cost efficiency will notionally improve as broadband take-up increases over the remainder of the licence fee period and costs per user drop.

5.4.138 Canvas has three main reach projection scenarios based on the work done by Value Partners Management. For the purposes of this assessment, it seems sensible to use the average base case projections, in attempting to conduct any comparisons. The table below sets out current or projected reach figures using the services and offerings as in the previous table:

Comparative Table 2

Service	Total reach estimated (million)	Source/Basis
Canvas	4.7	Base case estimate of average no of Canvas households 2011-2015 is 2 million (Source: Value Partners study 2009), and the average number of people per household is approximately 2.35 (source: ONS, General Household Survey, 2007). We have extrapolated on these bases.
Nine hr HD DTT service	2.4	Reach for first six months of 2009 based on people who watched for at least 15 minutes. (source: BBC Performance)
iPlayer	3.8	Average weekly users over last six months from Sept 09. (Source: iPlayer Press Pack, NB does not include Virgin cable downloads.)
DTT/Freeview	[x]	Freeview penetration in m TV sets, both primary and secondary is [x] million (source: BBC Finance), and again using the average number of people per household of 2.35. We have extrapolated using these bases.

5.4.139 The following tables compare the costs to the licence fee payer and per user of the BBC services and offerings already featured in the tables above and thereby provide an indication of the value for money of the proposal:

Comparative Table 3

Service	Total costs per licence fee payer per annum (£'s)	Source/Basis
Canvas	£0.19p*	BBC Project Canvas team
Nine hr BBC HD service	£0.10p*	BBC HD Service Licence Budget 09/10 (as before)
iPlayer	£0.20p*	BBC Online Service Licence Budget 09/10 (as before)
DTT/Freeview	[x]*	Budget for 2009/2010 (source: BBC Finance)

* 2009 Television Ownership in Private Domestic Households was 25.9 million.
 Source: BARB (http://www.barb.co.uk/facts/tvOwnershipPrivate?_s=4)

Comparative Table 4

Service	Total cost per user (£'s)	Source/Basis
Canvas	£1.04	Base case estimate of average number of Canvas households 2011-2015 is 2 million (Source: Value Partners study 2009). The average number of people per household is approximately 2.35 and we have extrapolated on this basis. (Source: ONS, General Household Survey, 2007)
Nine hr HD DTT service	£1.04	Weekly 15-minute reach March '09. Source: BBC Annual Report 08/09
iPlayer	£1.34	Average weekly users over last six months from Sept 09. Source: iPlayer Press Pack (does not include Virgin cable downloads)
DTT/Freeview	[x]	Freeview penetration in m TV sets, both primary and secondary (source: BBC Finance)

5.4.140 This final comparative table suggests that Canvas is broadly similar in terms of cost per user in relation to other BBC content delivery mechanisms and services. If one includes a rough approximation for additional iPlayer usage through Virgin Media of 25% (based on the relative number of unique requests), one would arrive at a figure that is even closer to the cost of the HD Channel, Freeview and Canvas. These

figures suggest that the relationship between the total cost and projected reach of Canvas has been pitched at the appropriate level. We believe that this provides a strong indication that Canvas can be quantified as delivering a similar level of value as that of other existing platforms and services, in addition to the qualitative factors provided elsewhere in this assessment.

5.4.141 In assessing the cost and value for money, and taking account of the points raised during the public consultation and revealed in our audience research, we have also given consideration to the peripheral costs that would be incurred by individuals receiving Canvas. In particular, we note that the cost of having broadband in the home is variable from provider to provider, and the decision to subscribe is unlikely to be based solely on the ability to avail of a proposition such as Canvas. Additionally, licence fee payers will need to purchase the appropriate receiving device, the price of which is expected to be not insignificant and will likely form an important part of a prospective user's decision.²⁹⁹ As set out above, our audience research found demand for the proposals and evidence of a certain willingness to pay. Although peripheral costs do not form part of the detailed analysis below, we consider that they are relevant, especially in assessing the cost per household of providing the Canvas platform.

5.4.142 Although not inevitable, it seems likely that the BBC would be making some form of investment in IPTV based on the direction of the industry and consumer demand for this type of technological development. This assessment is based on the proposals as submitted by the Executive. The counterfactual analysis is set out below at section 5.5.

Commercial matters and other possible benefits relating to the proposal

5.4.143 We have also considered other possible financial benefits relating to the proposal as well as any implications on the commercial operations of the BBC.

²⁹⁹ Canvas will not set the price of set-top boxes and it is not possible to provide exact forecasts. However, set-top box prices are initially expected to be between £200 and £249 but prices will fall over time to between £49 and £99 by 2015.

Commercial return from BBC Worldwide

5.4.144 The Executive does not presently expect any significant impact on BBC Worldwide sales as a result of the provision of Canvas. It is possible that increased exposure of certain popular content may actually help build strong programme brands and thus aid commercial revenue generation. At this time we understand that any future involvement with BBC Worldwide would be at its discretion and it would accordingly be treated in the same way as any other party.

Behavioural cost implication

5.4.145 It is possible that the introduction of Canvas may further cement BBC branding in the mind of the licence fee payer. Additionally Canvas, by moving television consumption further into the on-demand world where programmes popular on scheduled services receive the majority of attention, may help facilitate the BBC's stated objective of producing less output but further maintaining and possibly improving the production values and quality on popular programmes. This may assist plans for overall cost efficiencies for the wider BBC by helping to encourage a reduced level of programming and a focus on the broadcasts that matter to viewers the most.

Effect on licence fee evasion

5.4.146 The Executive has consulted the BBC's licence fee unit and believes that Canvas will only have a marginal effect on this area. A small but positive effect potentially accrues if PC-only households are incentivised to purchase a Canvas-enabled device to watch catch-up on a television screen, thereby requiring a television licence.

Conclusion on costs and value for money

5.4.147 In conclusion, we consider that the proposal will deliver a cost-efficient way of providing IPTV to BBC audiences. The above analysis indicates that the proposals will likely generate value for money to the licence fee payer over the five-year period under review. It is our view, therefore, that Canvas offers the licence fee payer value for money. This value is evident in the context of the proposals, in terms of the overall cost, and

the cost per user and household in comparison with other BBC offerings.

5.4.148 The costs represent a comparatively low proportion of BBC investment on UK public services. As previously discussed, it amounts to 0.15% per year of the licence fee (based on four-equal share partners), or 19p per licence fee household per year, and so should not significantly affect the provision of existing service activities undertaken by the BBC. Given the relatively low costs of BBC participation, we consider that there would need to be a sizeable increase in the total costs of the Canvas proposal for it to no longer constitute value for money.

5.4.149 By choosing not to develop an IPTV proposition in isolation, the BBC can also be seen as seeking value for money for licence fee payers, by sharing the overall costs. The Trust considers, however, that although there are clear economies of scale and thereby cost savings in pooling resources, no third party must be allowed to derive an economic benefit from licence fee funding. If any benefit is to be taken from the existence of Canvas it must be on a commercial basis.

5.4.150 We agree with the Executive's suggestion that it should aim for an open standard system such as Canvas to promote universality and that the Canvas specification fits within the BBC's broader aim to provide a consistent access across all platforms and a cost-efficient way of allowing access to BBC content.

5.5 What will happen in the absence of Canvas?

5.5.1 In assessing public value, we have regard to what will happen in the absence of Canvas. That is, the counterfactual.

5.5.2 For audiences there are a number of facets to the counterfactual:

- The ability to access BBC on-demand content, free-to-air, via the main platforms (DTT, satellite and cable) through a digital television device.
- The ability to access linear and non-linear BBC content, free-to-air via DTT through a television set.
- The availability of IP-enabled devices with the functionality envisaged by Canvas.

5.5.3 Although audiences are increasingly familiar with on-demand products and services, this is an emerging area and growth is difficult to predict. Given the inherent uncertainty, we have therefore taken a conservative approach to the counterfactual, and assumed that the market continues to develop in line with current trends and available forecasts. Our choice of counterfactual is informed by a number of assumptions: the PSB landscape does not change significantly, television manufacturers develop devices with access to VOD content, whilst Nintendo, Sony and Microsoft bring console-based VOD propositions to market.

5.5.4 We set out below an overview of current trends and the counterfactual that may flow from these absent Canvas.³⁰⁰

Current Trends

5.5.5 Whilst access to non-linear services via the television set is currently overwhelmingly provided by pay platform operators, new services are emerging which enable 'over the top' delivery.

5.5.6 There is a clear trend towards incorporating broadband functionality into high-end digital television receivers and enabling access to non-linear content. In terms of contract-free access to non-linear BBC content, a number of providers are entering the market:

- Freesat plans to launch a new set-top box with Ethernet connection that will support access to both iPlayer and ITV Player in summer 2010.
- Freeview also plans to launch a next generation set-top box in autumn 2010 which will be HD ready and IP connected (using the existing D

³⁰⁰ In this respect, we note the modelling work that Value Partners have undertaken.

Book 6 standard). We understand that the Freeview device is likely to support access to an iPlayer-based catch-up service for BBC non-linear content and may also have HD and PVR functionality but is unlikely to have the user experience element or breadth of content proposed for Canvas.

- IP Vision has also launched a hybrid IPTV/DTT set-top box (marketed as Fetch TV) which enables access to broadcast and video on-demand content on the DTT platform and supports a growing range of content.
- Further, we understand that several consumer equipment device manufacturers, such as Sony, Samsung and Panasonic, are developing content offerings to be packaged with idTVs or IP-enabled devices.

5.5.7 It is reasonable to assume that pay television platform operators will continue to evolve their propositions so as to enable access to non-linear services.

Counterfactual

5.5.8 Absent the implementation of Canvas, it seems likely that a number of platforms that enable access to free-to-air non-linear content will emerge. Less clear is whether an equivalent proposition to Canvas, in terms of public value, will become available in the short to medium term - by this we mean an open, contract-free proposition that provides for:

- A simple, consistent user interface, that conforms to best practice in terms of accessibility and usability;
- A rich experience based upon IP technologies that enables delivery of a wider range of content and interactive services;
- A high-quality experience with guaranteed service levels and centralised support;
- Low entry barriers to content providers and third party developers.

5.5.9 The Executive submits that Canvas will provide an upgrade path for DTT. We acknowledge both the importance of DTT (for reasons set out in section four) and the value in consumers having certainty as to points of access for free-to-air content, including that of the BBC, across platforms.

- 5.5.10 Absent Canvas, the BBC is likely to maintain a direct role in platform provision via Freeview and FreeSat. As noted above, neither operator is currently expected to innovate on the DTT platform to enable the breadth of access to content coupled with the user experience of Canvas. Further, without an open technical standard, widespread adoption of such technology may be unlikely in the near to medium term. In its submission, Arqiva noted, 'without an initiative such as Canvas, such technology could easily remain the province of a relatively small number of early adopters for many years and, in a horizontal market, consumers would have to choose between multiple standards, many likely being closed environments.'³⁰¹
- 5.5.11 Existing suppliers of IPTV services, such as BT Vision, have already established an IP capability to support DTT but this is based on proprietary standards. Alternative platforms or manufacturers developing products with enhanced functionalities may develop an open standard but this is likely to remain proprietary in nature.
- 5.5.12 Although not certain, absent Canvas, upgrade functionality enabling access to a range of free-to-air content supported by the high-quality user experience envisaged by Canvas may not emerge in the short term. Further, audiences will not necessarily have this level of upgrade functionality available to them contract free on DTT in the short term.
- 5.5.13 We note that the implementation of Canvas may impact the predicted growth of Freeview (this point is considered in our MIA). However, the Trust is of the view that the lack of upgrade path at the level of functionality anticipated by Canvas may otherwise affect the growth of the DTT platform and Freeview with it. As discussed in detail in section four, such impact of the DTT platform will also affect the BBC's ongoing ability to maintain a direct relationship with its audience.
- 5.5.14 In respect of the BBC's current participation in Freeview, as well as FreeSat, we have also considered comments by stakeholders as to the choice of venture strategy.

³⁰¹ Arqiva response to BBC Trust consultation on Canvas proposals, 2009.

- 5.5.15 On application to the Trust, the Executive referred to three possible venture strategies in respect of Canvas, which included launch through the Freeview or Freesat ventures. The option chosen by the Executive in its application for Trust approval was the formation of a new joint venture partnership. This was clarified in our consultation paper of February 2009. The Trust has considered the public value of the Canvas proposals, as set out above, rather than alternatives that were not pursued by the Executive. It is not therefore appropriate to consider in this counterfactual how the Canvas proposal might now compare with a hypothetical proposal to develop Freeview or FreeSat.
- 5.5.16 Further, the application explained that Canvas would provide an upgrade path for Freeview and may seek to include the current FreeSat operation at some future point. The scope of our assessment, however, is limited to implementation of the Canvas standard on the DTT platform. Should the Executive wish to merge the Canvas and FreeSat operations, this would be subject to separate consideration by the Trust.

6. Conclusions

- 6.1 Our overall conclusion is one of potentially high public value for particular audience groups and medium public value overall. Over time, we consider that Canvas may offer the potential for high overall value.
- 6.2 There is a strong logic and public value to proposals; by fulfilling policy objectives for DTT, Canvas will deliver specific benefits to audiences, enriching the range of available content and services without recourse to a pay-television package, whilst securing greater scale and lower costs through coordination with joint venture partners.
- 6.3 We can see clear value accruing from BBC involvement, both to individual licence fee payers and society more broadly. Canvas responds to consumer demand for greater choice and brings with it the benefits of industry collaboration. The proposals fit with and further deliver the public purposes and wider BBC strategy, a logical and necessary step in the evolution of DTT, underpinned by a commitment to preserve the principles of universal, free- to-air access.
- 6.4 We recognise that initial take-up is likely to be gradual but over time we expect its impact to be more significant, helping to combat the threat of disintermediation, delivering the benefits of new technology to all audience groups and acting as a stimulus for broadband adoption. The inclusion of access provisions, meanwhile, brings benefits not only to under-served groups but also to audiences more generally. By exceeding the duties placed upon the BBC in this area, therefore, Canvas potentially delivers wide-ranging benefits over different time horizons.
- 6.5 Quality and distinctiveness is clearly a key area for the delivery of public value. Although further clarification may be required in respect of quality assurance; the accessibility and usability of the interface, coupled with non-subscription access to a broad range of content and services and progressive technical standards, demonstrate clear potential value. The extent to which Canvas will contribute to BBC reach is however less clear, albeit that evidence suggests uptake of Canvas devices and potential reach to under-served groups. The quality of

Canvas proposals is potentially very high, particularly for vulnerable groups, but ultimately depends on uptake by these groups of both Canvas devices and broadband, which is less certain in the near-term.

- 6.6 Given the relatively low overall cost, the proposals represent, in our view, an appropriate use of licence fee funds. We are mindful, however, that Canvas involves investment in a new and untested area for the BBC, such that anticipating the exact costs is somewhat difficult.
- 6.7 In respect of what may happen absent Canvas, whilst we recognise a broad range of initiatives on the DTT platform; it is by no means certain that they will replicate the public value envisaged by Canvas.
- 6.8 In light of the assessment set out in this PVA, we consider that there are several aspects of the Canvas proposals that are necessary to both safeguard, and optimise, public value. Although the importance of the aspects of public value is referred to throughout this PVA, we summarise these below.

Subscription Free Access

- 6.9 The combination of the high function and quality features of Canvas in a single, subscription-free product was highly valued by audiences, and the overarching principle of a subscription-free product thereby essential to the public value of Canvas.

User Interface

- 6.10 A core principle underpinning the proposals is a desire by the joint venture to establish a common user interface. The Trust considers that the accessibility provisions are necessary to the public value of the proposals and a timetable for delivery should be ensured. Further, it may be that some degree of flexibility on the first level of the UI would be possible without compromising the public value in these aspects of the proposals.

Industry Engagement

- 6.11 We acknowledge the importance of industry engagement and the role it plays in securing widespread adoption of new receiving devices. We also accept the point made by a several stakeholders that the wider objective of universal deployment of IP to television may be best achieved via industry consensus, working within established industry mechanisms. The Trust therefore encourages Executive engagement with industry and other relevant bodies on the delivery of Canvas devices.

Safeguards and Controls

- 6.12 We recognise that if Canvas is to provide users with internet access, it must combine a secure means of so doing with appropriate safeguards. Whilst Canvas will not impose editorial control over the content it carries, we found an appetite among audiences and stakeholders for some kind of guidance in this respect. Whilst Canvas will support parental controls, we also recognise the value of some sort of guidance or signposting. This is particularly relevant when considering the relatively low numbers of parents who make use of password protection devices on their television sets to block unwanted content.

Costs

- 6.13 Through its involvement in the joint venture, the BBC will incur costs of £24.7 million over a five-year period. Given the novelty of the venture and the inherent uncertainty of accurately estimating total costs, we are aware that the exact costs of Canvas are difficult to determine. The cost of the proposals are relevant to the value for money and the Trust recognises that the control of spending on the Canvas proposals is therefore essential to ensure that the public value of proposals is maintained.

Low Entry Barriers for Content Providers

- 6.14 Canvas will allow providers to exploit an affordable route to a wider market, establishing new business models and broadening their audience base. Greater access to a wider range of content delivers improved choice and broader value to licence fee payers, allowing providers to secure maximum value from their material. We welcome the use of objective measures to prevent undue prominence of major

existing services, and accept that this area is subject to further work by the joint venture partners. We acknowledge, however, the concerns of stakeholders in respect of platform access, prominence and fees. If Canvas is to make a significant contribution to this area it should therefore operate on a reasonable basis.

Provision of Support

- 6.15 Provision of support is also important, particularly for vulnerable groups given the technical nature of the proposition. We recognise the value of a simplified, centralised structure in reducing barriers to use, and welcome its inclusion in proposals, but also accept the limitations of 'pass through' telephone-only support. From a public value perspective, we recognise the importance of further clarification from the Executive in this area.

Annex I, Description of Proposals

1. Introduction

1.1 We set out below our understanding of Project Canvas which is based on:

- (a) The BBC Executive's Application (and accompanying annexes) to the BBC Trust of February 2009.
- (b) The BBC Executive's response to the BBC Trust's request for clarification provided in July 2009.
- (c) The further information on governance and costs published by the BBC Trust in November 2009.
- (d) Further clarifications provided by the BBC Executive.

2. Project Canvas: Overview

2.1 Canvas involves the creation and/or development and promotion of a set of CTS to enable the delivery of on-demand, interactive and web-based content on television via a broadband-connected digital device. The CTS will include standards for consumer device equipment, content delivery, measurement, presentation and security technologies. Canvas also involves the creation and/or development of specifications that support the development of a Canvas UX (see 2.3 and 2.4 below). Viewers wishing to access on-demand content on their television set using a Canvas-enabled device will be required to have a subscription for a broadband service.

2.2 Canvas will not create, aggregate, license or retail any content. Neither will Canvas act as an ISP. Rather, our understanding is that Canvas will facilitate access to content.

2.3 In addition to the CTS, Canvas will develop and manage a UX which will allow users to search and browse for content and services (provided via Canvas) and provide backend services including metadata aggregation, platform diagnostics and customer support.

- 2.4 The core UI, a sub-set of the UX, will be developed, maintained and controlled by the Canvas joint venture. It will consist of:
- A main menu or top level experience
 - A simple linear guide for television and radio
 - An ordered list of on-demand services
 - A basic search and browse functionality for web and interactive content and applications
 - Settings (for example, options for parental controls)
- 2.5 Use of the Canvas brand will require the adoption of the Canvas CTS and the Canvas UX. Parties who adopt both the Canvas CTS and Canvas UX will thereby gain access to content made available on the Canvas platform.
- 2.6 Canvas will not manufacture or sell Canvas-enabled digital devices, nor will Canvas (or the BBC) subsidise the purchase of such devices.
- 2.7 Canvas will operate on a cost-recovery basis and this principle is enshrined in the objectives of the JV as agreed by all parties and published by the BBC Trust in November 2009. The BBC's investment in Canvas will be funded by the licence fee.
- 2.8 The Canvas JV will be established to develop, support and promote the Canvas CTS and UI. The JV will market Canvas under its own Canvas brand, as a separate proposition to Freeview. As the CTS will be based on the core specification for the existing D-book, device manufacturers will be able to adopt the relevant Freeview trademark(s) for their Canvas-enabled devices. There will be no formal relationship between the Canvas and Freeview JVs although any DTT or DSat device would offer the same range of linear services as offered by these platforms. The BBC Executive outlined how the wider strategy for Freeview and Freesat may evolve in the light of Canvas in the documents published in July 2009.
- 2.9 The ability to gain access to the Canvas platform and to market a Canvas-enabled device is not contingent on membership in the Canvas JV. All JV partners will contribute towards its costs on an equal basis.

3. The Canvas CTS

- 3.1 The BBC Executive has stated that development of the Canvas CTS will involve consultation with a range of industry bodies, and that the Canvas JV will work closely with the DTG for the development of the DTT-based specification, whose membership has been expanded to include participants from the ISP and internet technology and development communities.
- 3.2 The Canvas CTS is intended to be adapted to other platforms and devices. This means that Canvas will in principle be able to be implemented on all TV distribution platforms (i.e. digital terrestrial, satellite and cable), by all ISP providers and by all device manufacturers, subject to minimum quality thresholds - see below.
- 3.3 The Canvas CTS set out requirements for the delivery of on-demand and web-based content. It is anticipated that manufacturers will be free to incorporate additional functionalities (such as conditional access ("CA") functionalities and push VOD - see below) into Canvas-enabled devices to support a range of additional services, including paid-for interactive and/or transactional services. Pay services (including billing) will be managed and provided by individual content and service providers, but the CTS will provide the underpinning hardware and software requirements to enable a range of transactional functionality.
- 3.4 More specifically, in connection with the development of the Canvas CTS, we understand that:
 - (a) Canvas will seek to support conditional access technology widely used for pay-TV services, implemented initially in conjunction with a pay operator. However, the BBC Executive has stated that a common standard for CA-enabled devices is highly desirable and the DTG has included this work within its plans for a Connected TV specification;
 - (b) the Canvas CTS will support digital rights management ("DRM") technology;
 - (c) the Canvas devices will meet minimum storage requirements (32GB) that will enable Canvas devices to offset load on IP

networks. Manufacturers are expected but not required to include a larger storage capacity to allow customers to benefit from a PVR, but this will not be mandated in the Canvas specification, in part to enable a range of Canvas TV devices;

- (d) to the extent possible, the Canvas CTS will build on existing standards such as D-Book 6.1 for digital terrestrial television and future iterations of the D-book;
- (e) Canvas devices are likely to all be HD-ready but this is not mandated in the CTS.

3.5 The BBC is already working with three innovation partners, (Thomson, Humax and Cisco) from the consumer device manufacturing sector on the development of the Canvas CTS. The BBC has signed non-disclosure agreements (to allow information sharing), non-binding collaboration agreements / letters of intent (to express the intention to work together on a research and development basis) and framework intellectual property rights agreements (specifically designed to ensure that any material developed by the innovation partners in relation to Canvas can be made available by the BBC to the wider industry, via the DTG process, for example) with these innovation partners. The BBC has confirmed that there is no agreement with the innovation partners which would prevent the BBC from allowing the DTG to control all future development of the Canvas specification.

3.6 The BBC expects the DTG to make the CTS available to third parties who do not wish to develop or promote a Canvas-enabled device. However, use of the Canvas brand will require the adoption of the Canvas CTS and the Canvas UI, which thereby gives access to content made available via Canvas. Platform operators will be able to adopt the Canvas CTS alongside their own UI (that could be based on the metadata/source code for the Canvas UI or specification set out in D-Book 7, when it becomes available). However, such platform operators will not be permitted to adopt the Canvas brand (and benefit from the associated marketing) and will not gain access to the content made available on Canvas by JV partners and other content providers. Accordingly they will be required to liaise directly with content providers to syndicate content to be provided

on their platform and any other commercial terms (similar to other TV platforms).

4. The Canvas UI (including the EPG) and access for content providers

4.1 The Canvas UI consists of a main menu, a simple linear guide for TV and radio, an ordered list of on-demand content, a basic search and browse function and basic canvas level settings (e.g. parental controls). The Canvas UI will be developed and held by the Canvas JV.

4.2 More specifically, insofar as the UI is concerned, we understand that:

- (a) third party content providers/aggregators will have the flexibility to develop and/or personalise their respective sub-areas of the EPG;
- (b) viewers will have the ability to personalise the Canvas UI;
- (c) shortcuts may be provided on the Canvas UI to content and services; and
- (d) co-branding on the Canvas UI may be permitted for ISPs and other third parties on terms to be agreed.

4.3 Canvas is intended to be open at every level of the supply chain. In particular, as regards third party content providers:

- (a) subject to minimum technical standards and limited content standards (based on illegality), third party content providers will be able to make their content available via Canvas-enabled devices and will have the possibility to have their content listed on Canvas;
- (b) the BBC will not have the ability to enforce its own editorial standards in respect of third party content;
- (c) there will be a listing fee for inclusion in the Canvas EPG calculated on a cost recovery basis.

- 4.4 The BBC Executive has stated that Canvas will be open to free, advertising-funded and paid-for content, and would not preclude any payment models.
- 4.5 The BBC Executive has stated that linear and on-demand content on the EPG will be listed in accordance with Ofcom's EPG Code, which requires fair, reasonable and non-discriminatory treatment of channels. Linear channels offered on Canvas will mirror the DMOL numbering. Linear channels delivered via broadband and on-demand content will be reflected within this framework insofar as it extends to include them or will be treated on an FRND basis to be set out in Canvas EPG Policy.
- 4.6 ISPs and content providers will be required to meet a minimum quality standard defined in terms of consumer experience rather than by reference to any one technology solution (the Minimum Quality Standard). This will be defined in output terms as being that which delivers a similar consumer experience to that of watching a standard definition channel on Freeview.
- 4.7 Aside from satisfying the Minimum Quality Standard, it is envisaged that there will be flexibility for the technology involved in content delivery. Canvas will not dictate the form of delivery. Hence ISPs will be able to support Canvas with both 'managed delivery' (where ISPs allocate bandwidth to the delivery of content via Canvas so to ensure a certain quality of delivery standard) and 'over-the-top delivery' (delivery of data over an ISP's broadband network undistinguished from other data (e.g. emails, voice)). Canvas will not require managed delivery services to use BT's CDN technology.

5. The Canvas Joint Venture (JV)

- 5.1 Membership in the Canvas JV is intended to be open to all, subject to the satisfaction of a number of objective admission criteria. Entrants must be of benefit/make a positive contribution to the Canvas JV and, in making such an assessment, the Canvas board will consider whether the applicant:
- (a) demonstrates an ability to fulfil the commercial objects of the Canvas JV - see below;

- (b) will commit to spending a reasonable proportion of its marketing budget to promoting Canvas and to affording Canvas effective prominence within such marketing (both assessed by reference to comparable existing marketing commitments of the other shareholders to the JV at the time of the applicant's entry to the JV);
- (c) has sufficient financial resources to meet its obligations as a shareholder; and
- (d) is willing to make a commitment to fund the JV according to the basis of its agreed contribution from time to time.

Although there is no express limit to the number of Canvas JV members, the Canvas board will also consider whether the addition of any new members to the Canvas JV would undermine the operational efficiency or viability of the JV or its operations. The final decision on new entrants to the Canvas JV will be taken by a majority vote of the board of directors. Each shareholder has the right to appoint a single board member and all board members will have voting rights which reflect the proportion of shares held by their appointing shareholder in the JV.

- 5.2 Members of the Canvas JV will have equal shareholdings and board representation and equal funding contributions (at least for the first four years). Any new entrants will dilute the existing participants' shareholdings equally.
- 5.3 Decisions of the Canvas board are taken by simple majority, except for decisions to approve subsequent budgets, spending in excess of the business plan or budget, changes to the business plan or budget, changes to the share structure or borrowing, which will all be taken by super majority (i.e. the approval of all but one of the shareholders). Changes to fundamental constitutional matters are reserved matters that require the unanimous approval of the shareholders.
- 5.4 Members of the Canvas JV must also sign up to the commercial object of supporting and promoting the Canvas CTS and UI (whilst acknowledging the role of the DTG in developing and maintaining the CTS), which includes:

- (a) to develop and promote the CTS in conjunction with the relevant bodies, including the DTG;
- (b) to offer UK audiences a wide choice of catch-up, VOD and linear television along with interactive and web content as part of a new hybrid platform that enables both free and pay services;
- (c) to promote, develop and enhance the take-up of broadband services and the availability of Public Service and other broadcast content;
- (d) to maintain a standardised and horizontal approach to the application of the CTS in the device market (e.g. through the DTG);
- (e) to ensure the appropriate quality of audience experience, which includes the Minimum Quality Standard;
- (f) to ensure a common UI (including EPG) for inclusion in devices in accordance with a UI and EPG policy;
- (g) to market and promote the CTS and UI and the availability of services;
- (h) to develop and promote the Canvas brand
- (i) to manage EPG listings;
- (j) to collect and use data; and
- (k) to develop ways in which the Canvas JV can recover certain operational costs.

5.5 There will be no prohibition in the Canvas JV governance documents on the promotion or delivery of alternative devices or platforms by JV members (subject to compliance with the membership and admission criteria above).

5.6 The Canvas JV will collect usage data and content providers will be able to access detailed reports for data generated by their service. It is also intended that aggregated data will be made available to all Canvas content providers.

6. Costs associated with Canvas

6.1 Partners to the Canvas JV will contribute (in cash) equally to the operating and marketing costs of the Canvas JV by each making an equal contribution (in cash) invoiced in the form of a service charge to the partners by the JV on a monthly basis. Where partners are able to offer in-kind contributions in lieu of cash contributions, the Board of the JV may consider accepting such in-kind contributions but only in circumstances where (i) the asset being offered by way of in-kind contribution has been identified as an asset required by the JV as contemplated by the current business plan and (ii) the value of such in-kind contribution can be objectively determined. This funding model, which is also used in Freeview, allows the commercial Canvas JV partners to deduct the service charge from their gross revenues for tax purposes and will also permit the Canvas JV to reclaim VAT. This would not be the case if all partners would fund the JV's operations by way of subordinated loans (with a very low prospect of recovery), as originally contemplated. Every new partner to the Canvas JV will need to pay a proportionate share of the costs already incurred by the JV and share future costs on an equal basis with the original partners.

6.2 However, the intention is that the BBC will frontload investment in the Canvas JV on behalf of the commercial PSBs only (i.e. not on behalf of non-PSB Canvas members such as BT) during year one of the JV by contributing towards the service charges invoiced to commercial PSBs. The BBC is thereby effectively granting a loan on a commercial basis next to the funding mechanism described above. This initial frontloading will be levelled out to ensure that over four years all PSB contributions are of equal value. The BBC will only consider frontloading another PSB's contribution towards the total costs of the JV in circumstances where it is confident it has taken every precaution reasonably necessary to ensure that frontloaded contribution will be recouped, and that the commercial terms applied to any such "loan" have been benchmarked against, and are in line with, similar loans available in the market.

- 6.3 Up until the end of September 2009, the BBC has invested approximately £0.7 million to support the application of Canvas in addition to ongoing R&D investment, in investigating the viability and potential of internet-connected television. Costs incurred by the BBC in undertaking this work will not be subject to later reimbursement by the Canvas JV partners on the basis that such costs represent expenditure that the BBC would be incurring in any event pursuant to business-as-usual activity.
- 6.4 The JV will also be investing approximately £5 million between October 2009 and January 2010. JV partners will fully pay their share under a cost sharing agreement prior to full market launch. The BBC is assuming the financial risk of Canvas up until the Trust's preliminary conclusions because, in the event the preliminary conclusions are not favourable, all the assets created between October 2009 and the date of such preliminary conclusions will remain with the BBC.

Annex II, Explanation of Cost Categories and Costs Incurred

Explanation of cost categories

Marketing

Marketing is a substantial element of the cost plan, representing approximately 42% of projected Canvas spending (before cost-recovery benefit). We appreciate that part of the budget will need to be used to explain the new proposal, which will be important to realise public value, and to ensure that the Canvas proposal is understood and thereby accessible to licence fee payers, especially in the early years as Canvas is introduced to the public. We expect Canvas will have a wide range of marketing deliverables from brand identity, consumer launch, advertising and marketing materials, consumer communications activity, research testing, and consumer-facing web presence.

Technology

As the Canvas proposition involves new technology this forms a significant part of the total overall spending for partners (31%). Specifically the JV is looking to set up a horizontal platform that will enable the delivery of television, radio and other online services onto a television set. We understand this will not be through a platform operator which might aggregate and deliver content, but through a common user interface and its associated enabling technology.

The Canvas set-top box or device will be manufactured by third parties after a competitive tender which consumers are expected to be able to purchase from the usual retail outlets.

The area of technology spending is where most of the capital expenditure is due to arise. This is largely due to the hardware required to develop, test and run the platform. To facilitate this, the joint venture is intending to engage the services of a third party who will manage the back end service in exchange for an ongoing charge plus an upfront cost to support the build. This back end activity is intended to support a medium-sized platform which would handle the large expected volume of activity. The overall charge for this to the BBC across the entire period under consideration is expected to be £1.3 million.

Distribution

The Canvas Joint Venture will affect content creators like the BBC in terms of the cost of distributing content. However, the JV itself will not be distributing content and so there will be no distribution costs specifically attached to it. However, the BBC will have to provide the funding required, as it currently does, for the infrastructure costs associated with making its content available. It will also have to pay for the costs associated with making that infrastructure accessible from the internet, which would include CDN charges. On this last point, the BBC Executive has made clear that any prospective financial relationship between providers of CDN, or ISP services, and the BBC will remain outside of the Joint Venture. Any such relationship will not be linked to the Joint Venture shareholders agreement.

Operations, Platform and Customer Support Costs

The platform will be critical to the customer experience – it is intended to support real-time delivery of service. Total operations costs to the BBC are projected at £4.4 million for the five years, with platform operations expected to be approximately £2 million on the same basis, with estimates also drawing from information obtained through an RFI exercise. The main fixed element of fixed platform costs concerns the provision of infrastructure. The distribution of content will be the responsibility of the relevant content provider, and delivery of this content will be the responsibility of the broadband provider of the user's choosing.

In relation to customer support, the Executive is projecting approximately £2 million of cost to the BBC which they inform us has been benchmarked against BT call centre cost information; and will be subject to a third party procurement exercise. Additionally, the underlying model of these costs has been examined under a range of support levels from the light-touch Freeview model to the more resource-intensive BT Vision model. The support model is intended to be scalable so that it can adapt to different growth and support requirements.

The cost projections decrease over time based on the assumptions of improved call and internet handling, and most importantly a lower propensity to call once the systems are established and in place. Currently it is envisaged that ISPs will handle approximately 90% of calls and with the Canvas JV only handling 10%.

Clearly there is a risk here that the Canvas JV will have to handle more than this and costs could escalate if ISPs choose to defer calls to Canvas customer support agents. We consider that there will need to be a clear plan here and the assumptions thoroughly debated to ensure that costs do not escalate beyond these current projections.

User interface and user experience

There was some initial UI work undertaken as part of the development and set-up phase of the proposal. The Executive informs us this was largely to scope options for the look and feel of the front-end and has not therefore involved the building of proprietary technology. The creation and operation of the UI/UX is put at £4.2 for the joint venture million over the next five years, or 3.6% of total costs (before recovery). These costs are largely made up of the staff and contractors who will provide the visual design, interaction capabilities, usability, IT services etc. This phase of substantial build and design work will be undertaken by the JV and IPR will potentially be owned by the JV.

Explanation of costs incurred to date

As part of its research and development work the BBC has been investigating the possibilities around IPTV and this work has informed Canvas to a large extent. The BBC has incurred ongoing R&D costs over the period November 2008 to September 2009.

We understand that there are no plans to recover these amounts at the present time as the money was spent during the normal course of development work. The Executive have stated that any further substantial design and build of the User Interface (UI) will be conducted, owned and paid for by the JV.

The BBC has also already invested approximately £0.7 million in specifically developing the Canvas application in the period July 2008 to the end of August 2009. The costs for this period include audience research, a small number of dedicated staff, and consultancy as follows:

£000s	1/07/08- 31/03/09	1/04/09- 31/08/09
Audience research	74	28.2
Dedicated staff	191.4	106.4
Technology costs	0	1
Other	76	1.8
Total	341.4	137.4

The BBC has stated that any costs incurred to the end of August 2009 will not be reimbursed by venture partners on the basis that such expenditure would have taken place regardless under normal activity. Additionally, other venture partners will not be seeking reimbursement for the costs they have incurred during this period of 'development and project set-up'.

All funding from the start of October until the application decision by the Trust expected in early 2010, will be initially incurred by each partner according to the level of cost and effort they have chosen to invest in the Project for the period. These costs are at each partner's own risk in the event of non-approval but will be reimbursed (or charged out) according to the equal share partner split as appropriate if approved.

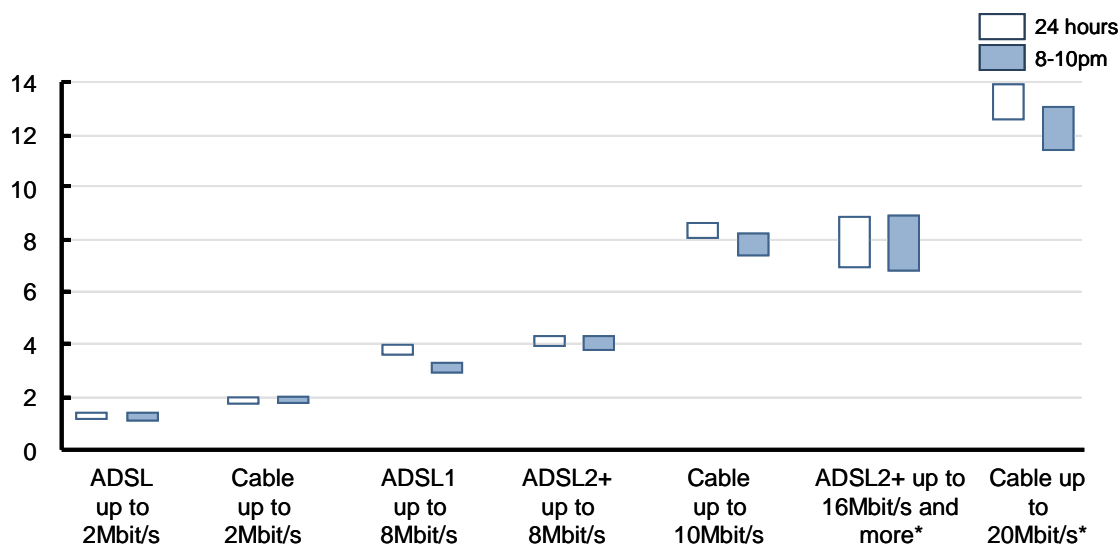
However, in relation to all partners who must contribute to the cost of the JV, there will be an attempt to explore ways in which any outstanding reimbursements or charges might be met by 'in-kind payments' as opposed to the transfer of cash (eg the BBC performs the bulk of the technical work, ITV takes the lead with Marketing, etc.)

Additionally, the agreed principle in relation to future joiners would be that they would be liable for this 'pre-approval' spending, in the same way as existing partners, and would face an equal share of the cost.

Annex III, Factors Affecting Broadband Speeds

Over 95% of homes in the UK can in theory receive a headline speed of 2Mbps with most homes able to access connections with much higher peak speeds in the range from 8 – 50 Mbps. However, actual broadband speeds vary widely, both geographically and depending on time of day. In April 09, the average broadband speed experienced in the UK was 4.1Mbps³⁰². However, both average speeds, and speeds during peak hours are much lower than advertised headline speeds.

Exhibit 1: Average download throughput speeds by technology and headline package, April 2009



Notes: (1) Data for ADSL1 up to 2Mbit/s and ADSL1 and ADSL2+ up to 8Mbit/s have been weighted by distance from exchange; data for ADSL2+ services up to 16Mbit/s and all cable services have been weighted by region and rural/urban; (2) The 'error margin; shown represents a 95% confidence interval

Caution: * Small sample size (<50)

Source: Ofcom; based on SamKnows measurement data from all panel members with a connection in April 2009

The following paragraphs discuss the key factors that affect broadband speeds received by households

Access Network

The access network comprises dedicated copper lines between the customers' homes and the exchanges. As such there is no sharing of capacity at the access

³⁰² Ofcom, UK Broadband Speeds 2009, p. 8.

level. The actual speed available to at this level in the network is constrained by the following:

- **Access Technology:** First-generation DSL enables a theoretical peak speed of 8 Mbit/s at the access level, whereas second-generation ADSL 2+ equipment enables peak speeds of 24 Mbit/s at the access level. From discussions with ISPs most of the larger ISPs, have or are in the process of, replacing their ADSL equipment in exchanges with ADSL2+.
- **Distance from the exchange:** The further a home is from an exchange the lower the maximum peak speed achievable due to the length of the copper between the exchange and the home. For instance, homes over 4 kilometers from exchanges are unlikely to receive peak speeds of 2 Mbps on DSL despite headline speeds of 8 Mbps; this includes many rural homes.
- **Wiring in the Home:** Broadband speed can decrease in the customer premises depending on internal wiring. The Digital Britain report estimated that in 1.9 million homes, wiring in the home reduced the maximum speed below 2 Mbps. The report also noted other areas of possible improvements in home connections such as switching from a Service Specific Face Plate (SSFP) to an Interstitial Plate (i-plate).

Backhaul Network

Backhaul networks are typically the first stage of the network at which traffic from multiple customers is aggregated and the available capacity is shared between users. For many networks this is currently the main limit on peak hour speeds experienced by users.

The 'sharing' of backhaul capacity among a number of different users on a given exchange is known as 'contention'. ISPs must determine the appropriate average capacity per customer and therefore the level of backhaul capacity that is required to optimise the trade off between network cost and effective bandwidth speeds experienced by their customers. This is typically based on their usage during peak hours (usually 8-10 pm)

Factors affecting bandwidth requirements

There are two primary types of internet content delivered over broadband networks:

- **Non-time critical activities** - (e.g. web browsing, email, downloading or uploading files) use bandwidth in bursts, typically a few seconds of download for every minute spent consuming content. Consequently, the bandwidth can be shared among many users without discernible impact on end user experience.

- **Time-critical activities** – (e.g. streaming of video) typically requires continuous allocation of bandwidth. If capacity drops below the speed needed to deliver the content, the consumer experiences a stalled picture as the consumer's computer buffers the content (i.e. fills up memory with content). Fluctuations in bandwidth that lead to stopping and starting for buffering can significantly reduce the customer experience and make longer video streams unwatchable.

The mix of activities being conducted at any given point of time by all the users on the network affect the level of bandwidth generated. Currently, there are a number of ways in which a broadband network can provision for time-critical content to be delivered at an acceptable quality of service. These are discussed in more detail in the Value Partners ISP report:

Speed of broadband purchased by the customer

The mix of headline speeds is determined by the broadband packages which consumers decide to purchase as well as the products which ISPs decide to offer and their associated pricing.

Estimates of households that can stream VOD to the TV

Value Partners has modelled the theoretical maximum speed received by households and hence the ability to stream VOD to the TV, based on assumptions on:

- the overall mix of the headline speeds of DSL broadband products in the market (determined by the broadband packages which consumers decide to purchase as well as the products which ISPs decide to offer and their associated pricing);
- the degradation of headline speed with distance from the exchange; and
- the distribution of connections in terms of distance from the closest exchange.

The modelling does not explicitly take account of backhaul capacity constraints, throttling or in-home issues. The modelling estimates that currently, approximately two thirds of DSL BB HH can stream standard definition video content to the television³⁰³. Going forward, it is estimated that by 2015, most households will be able to stream video to television in standard definition. The rise over time is attributable to:

³⁰³ These figures are based on a single user per home for the internet connection. Clearly if multiple users are trying to use bandwidth heavy activities in busy hour the actual number of households able to stream will be less.

- increase in network capabilities, e.g. with the roll out of DSL2+;
- migration of customers to higher-speed broadband packages;
- improved compression reducing the bandwidth required to stream video; and
- increase in broadband penetration.