



# Digital Dividend Review

A report of consumer research conducted for  
Ofcom by Holden Pearmain and ORC International



Research Document

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## Section 1

# Introduction

## Background

- 1.1 Ofcom, in the Digital Dividend Review (“DDR”) is examining the options arising from the release of UHF spectrum afforded by the digital switchover programme, which may become available for new uses between 2008 and 2012.
- 1.2 The potential future uses of this spectrum are wide ranging and include: broadband wireless access, cellular mobile (for example, 3G and systems beyond IMT-2000), further terrestrial digital television services (including standard definition television, high definition television and local digital TV), mobile digital multimedia (including mobile television), and Programme Making and Special Events (“PMSE”).
- 1.3 To assist policy development, Ofcom commissioned Analysys Consulting, leading a consortium including DotEcon, Aegis, Mason and Dr Damian Tambini, to undertake a study to further its understanding of the available spectrum and its possible uses based on detailed market, technical and economic analysis.
- 1.4 A programme of consumer research was undertaken, to develop Ofcom’s understanding of consumer and citizen attitudes towards:
  - digital terrestrial TV (standard definition TV channels, high definition TV, local TV);
  - mobile TV;
  - mobile broadband;
  - improved mobile phone coverage; and
  - wireless home networks.
- 1.5 The research covered attitudes towards the potential uses of the spectrum from two perspectives; personal value to the individual and the value to society.
- 1.6 A variety of methods have been applied in order to gain as robust a set of results as possible.
- 1.7 There were three main parts to the research programme:
  - quantitative market research was designed using a ‘stated preference’ conjoint approach <sup>1</sup> and a number of other methodologies such as chip allocation and ‘Gabor Granger’ questions ;

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<sup>1</sup> Conjoint is a technique that derives the relative importance of service attributes based on carefully crafted series of “Which would you prefer?” type questions, providing a task which is easy for the respondent, and data that are perhaps more reliable than the results of straightforward questioning since the task more closely mimics the thought processes involved in making a purchase decision.

- qualitative, deliberative consumer workshops; and
- a face to face omnibus survey.

## **Research Objectives**

### Quantitative:

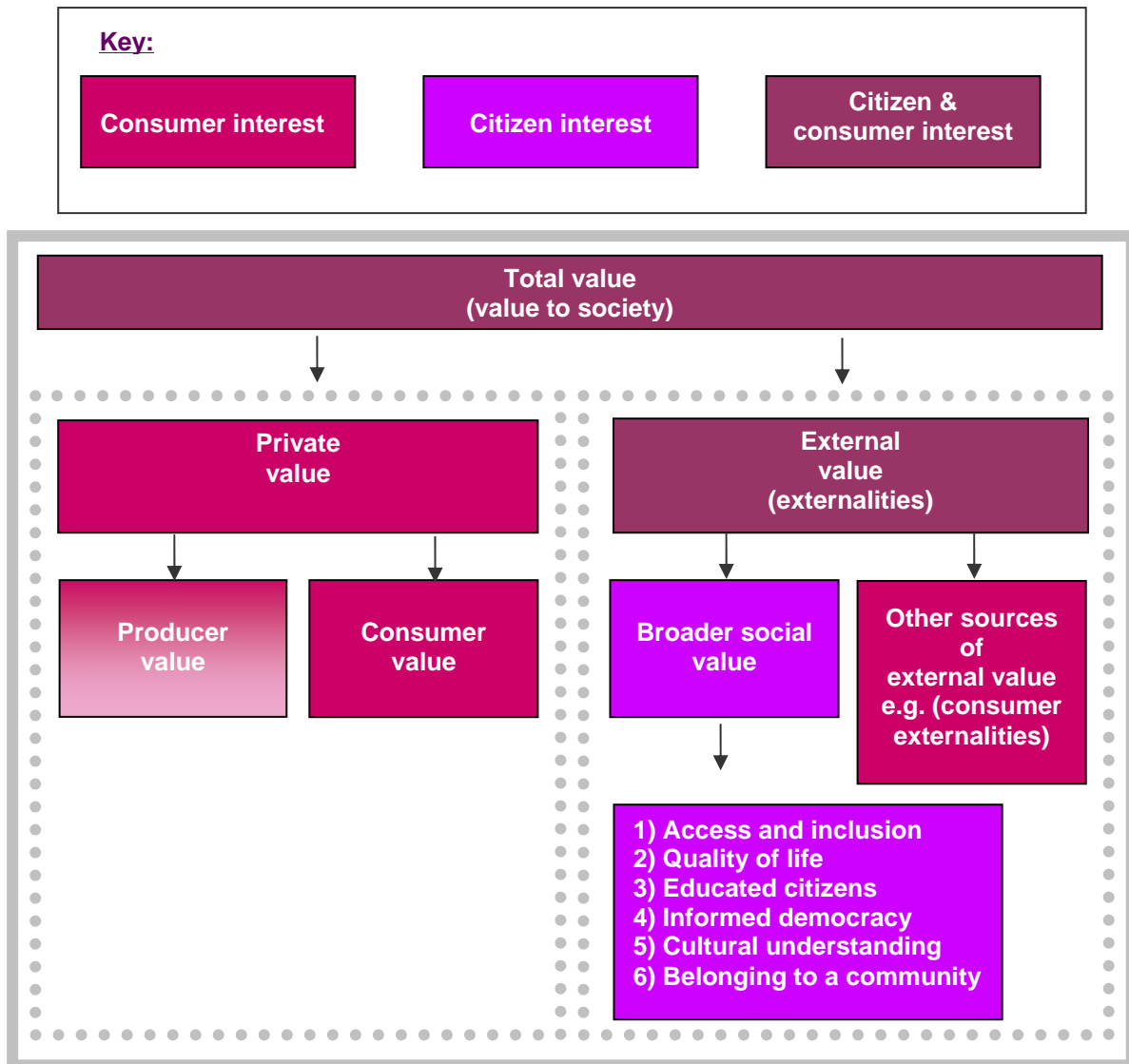
- To improve Ofcom's understanding of the value to consumers and society of the potential services which may make use of the digital dividend spectrum;
- To measure the relative importance and value to consumers and society of these services; and
- To measure the relative importance and value of service attributes (these are key service characteristics, such as the level of coverage, which are likely to influence the value to consumers and society of the services).

### Qualitative

- To validate/challenge and add context to the quantitative research; and
- To explore in greater depth the value to society associated with new services on digital terrestrial television, mobile television and mobile broadband internet services.

## **Use of consumer research in the Digital Dividend Review**

- 1.8 The consumer research was commissioned to form part of the evidence base for the Digital Dividend Review. Consumer views and opinions formed an important part of the evidence considered by Ofcom in developing the consultation on the award of the digital dividend spectrum.
- 1.9 In particular, the consumer research evidence has been relied upon:
- To assess the value to society of potential uses of DDR spectrum; and
  - To inform analysis of the willingness to pay for spectrum and for economic modelling.
- 1.10 When analysing value to society in the Digital Dividend Review Ofcom has used the following classification of sources of value. These sources of value are discussed in greater detail in Annex 7 to the consultation document.
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- 1.11 Based on this categorisation we believe that responses to questions about individual preferences generally correspond to consumer value whilst responses to questions about value to society generally correspond to total value. Hence, where value to society is in excess of private value there is additional value to society (i.e. external value) present.
- 1.12 It is important to bear in mind that interpretation of the research results within this framework for considering value is not always straightforward. It is possible that when answering questions about the value to society (in isolation from questions about private value) respondents may have focused on the external value, and in particular the broader social value, which may be generated from the use of the service. Therefore, the responses to the qualitative research in particular should be viewed with this in mind.

## Section 2

# Executive Summary

## Overview

### **There is consumer interest in and a willingness to pay for all services tested.**

- 2.1 Additional DTT services generated the greatest interest, followed by mobile broadband and mobile TV, which generated approximately equal interest.
- 2.2 The perceived value attached to each of the services was broadly similar from both the perspective of an individual consumer, and in terms of value to society.
- 2.3 When respondents were asked about the value to society of services, in a format where they had to prioritise between them, their answers were barely distinguishable from their individual values. There are two potential reasons for this result:
  - 2.3.1 Respondents viewed private value and value to society as one and the same, so the value to society is merely an aggregation of private needs;
  - 2.3.2 Respondents found it too difficult to imagine a national view, so instead gave an answer from their own perspective.

### **Additional standard definition channels, local TV channels and mobile broadband services potentially have small amounts of additional value to society.**

- 2.4 However, in questions where respondents had more flexibility, they reported small amounts of increased value to society, over and above the value to individuals of additional standard definition channels, local TV channels and mobile broadband services. Mobile TV and HDTV services were not seen to have additional value to society.

### **Hypothetical consumer demand for each digital service tailed off quickly as price increased**

- 2.5 Significant proportions of the population said they were prepared to pay up to £5 per month for each of the services. However, interest tails off sharply with increasing price – with 5% or less of the population willing to pay £15 per month for any service tested.
- 2.6 Of all services tested, wireless home networks generated the greatest willingness to pay, despite being rated as one of the least important. This suggests a particularly high willingness to pay among those who are interested in such a service.
- 2.7 Local TV displayed the lowest willingness to pay, despite being rated as a relatively important service.

## DTT

### **Other than price, consumers were most likely to choose DTT packages by the number of standard definition channels offered**

- 2.8 Beyond the cost of the monthly subscription, the requirement for a set top box and the number of new standard definition channels were the factors most likely to influence purchase choices (although the impact of the set top box was in part driven by the cost component, which, when removed, proved less of a deterrent to claimed uptake). The number of new standard definition channels was the most important factor that did not have a cost associated.

### **The value to society of new standard definition channels was dependent on socially valuable content**

- 2.9 In the qualitative deliberative research, where the value to society of new digital services was discussed, respondents made clear that the additional value to society of new standard definition channels was heavily dependent upon the content being socially valuable.

### **High definition TV was perceived as a niche, luxury service with little or no additional value to society**

- 2.10 High definition TV and local TV were, on average across all consumers, relatively unattractive factors in hypothetical DTT purchase decisions. High definition TV was perceived to be a niche, luxury proposition that had little additional value to society. Local TV services were seen as potentially having some additional value to society.

## Mobile broadband

### **After price, mobility and download speed had the greatest impact on consumer choices of mobile broadband services**

- 2.11 In hypothetical purchase decisions, mobility<sup>2</sup> and download speed were the next most important considerations after price. While download speed was an important consideration, the incremental value of additional bandwidth dropped quickly after a certain point. A download speed of 8Mbps was only marginally more attractive than a service offering 2Mbps download speed.

### **Breadth of coverage was the most important consideration in achieving a mobile broadband service that had additional value to society**

- 2.12 Mobile broadband was perceived as potentially having additional value to society, because of the range of opportunities it offers compared to other services tested and the value it might have to businesses. Breadth of service coverage was considered to be the most important feature of a mobile broadband service's additional value to society, as social inclusion was seen as a key feature of a service that had additional value to society.

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<sup>2</sup> The ability to use the service 'on the move' without being disconnected.

## Mobile TV

**After price, being able to use the service on an integrated device, such as a mobile phone, was the most important consideration in mobile TV purchase decisions**

- 2.13 As with other hypothetical purchase choices in this research, price was the most important consideration for consumers making choices on mobile TV services. The most important non-price consideration was whether the service could be viewed on an integrated device, such as a mobile phone handset.

**Mobile TV was perceived to have little or no additional value to society**

- 2.14 Like HDTV, mobile TV was perceived by consumers to be a niche, luxury service that had little or no additional value to society.

## Value to society

- 2.15 Mobile broadband internet, additional standard definition channels and local TV channels were all identified by consumers in the quantitative research as having potential for small amounts of additional value to society – over and above the service's value to individuals.
- 2.16 It should be noted that although we have been able to identify which of the services become more important in the social context, this does not necessarily mean that citizens value social considerations more *per se*. People may value individual benefits over and above social ones.

**Universal coverage and access were seen by consumers to be the main criteria in deciding whether new services have potential additional value to society**

- 2.17 Group discussion in the qualitative deliberative research gave deeper understanding of exactly what consumers saw as important factors in achieving additional value to society from these services. A major finding from this research was the importance of the principles of universal coverage and universal access. These were widely held principles, commonly seen as a starting point in discussion about the additional value to society of digital services. It was strongly believed that for services to have additional value to society, no one should be prevented from using them because of financial, geographical or other reasons.

**For DTT, the quality of content rather than the quantity of channels was seen as the greater driver of additional value to society**

- 2.18 In the deliberative research, it was unanimously thought that ensuring universal coverage should come before providing additional channels. In addition to this, although it was recognised that the number of channels can have a positive impact on value to society by allowing a wider range of interests to be catered for, the research emphasis was placed more on the quality of services, rather than the quantity of channels. Many of the current Freeview channels were thought to be of poor quality, and so the proliferation of new channels would be no guarantee of better quality, and indeed could lead to a 'dumbing down'.

## **If local TV services were ‘too local’ the additional value to society could diminish**

- 2.19 Views on the additional value to society of local TV were more varied, and subject to some conditions. Some felt that local TV could be of additional value to society, but in order for it to be valuable at all, the local community had to be of a sufficient size to generate sufficient news and issues specific to that area, and so provide engaging content on a local TV service.
- 2.20 Consumers appeared to link local issues with additional value to society. Respondents in the quantitative research were asked about the importance of a number of statements relating to the value to society of technology. The results showed that issues relating to the availability of local news and information tended to be rated as more important than the availability of other new services throughout the UK.

## Section 3

# Methodology

## Piloting

- 3.1 The quantitative questionnaires and associated materials were subject to rigorous piloting by Holden Pearmain Research, comprising of depth interviews to test concepts and a 300-sample pilot to test the conjoint exercises.
- 3.2 In addition, as part of the qualitative research, ORC International tested the proposed statements to be used in the quantitative questionnaire. These statements were used to ascertain attitudes towards the potential value to society of DTT and new technologies (included in the annex to this report with the quantitative questionnaire). Two group discussions were held, composed as follows (in addition to the other recruitment criteria described below):
  - Group 1: non-manual – ages 35-44 (London)
  - Group 2: manual – ages 18-24 (London)

## Quantitative sampling

### Main Survey

- 3.3 A total of 1500 interviews were conducted. The sample was representative of the UK adult population in terms of age, gender, socio-economic group (SEG) and region, and recruited according to the following criteria:
  - Have at least one TV in the house
  - Qualify for one of:
    - DTT – must either have heard of Freeview and/or have multi-channel TV (88% of the UK population)
    - Mobile TV – must have mobile phone and either use some form of remote video/audio downloading or express some interest in mobile TV. (68% of the UK population)
    - Mobile broadband – must have mobile phone and either use some form of remote data downloading or express some interest in mobile broadband internet. (66% of the UK population)
- 3.4 Other Ofcom data show this sample covers an estimated 89% of the population (it excludes those who are technology-averse, and actively resist new innovations in this area). The percentages in brackets above show the estimated proportion of the UK population qualifying for each category.
- 3.5 The interview was 45 minutes in length and was conducted using face-to-face in-home interviews, and printed colour stimuli.
- 3.6 Fieldwork took place between 15th May and 9th June 2006.

## **Additional omnibus survey**

- 3.7 An additional quantitative survey was conducted on BMRB's face-to-face omnibus survey.
- 3.8 A total of 976 interviews were conducted. The sample was representative of the GB population aged 15+ by age, gender and socio-economic group.
- 3.9 Fieldwork took place between 19 October and 24 October 2006.

## **Qualitative design**

- 3.10 A principal objective behind the design of the qualitative research was to move the respondent away from thinking as an individual and towards active engagement with the issues that policy-makers face. A deliberative research approach was designed to allow respondents to consider relevant issues and to talk with one another to broaden their understanding before making a decision. This approach made it possible to overcome "rational ignorance" where the public has little reason to invest time and effort in acquiring information before coming to a judgment when assessing complex issues. The groups were therefore longer than usual (3 hours), and included participation from Ofcom. The groups were led and moderated by an independent researcher from ORC International. In each group, member(s) of the Ofcom project team were present to answer any detailed questions respondents had. To enable more considered deliberation, briefing packs explaining digital switchover, and describing some of the new technologies were sent to all respondents prior to the workshop sessions.
- 3.11 Seven workshop sessions were conducted between the 4 May and 10 May 2006:
  - Groups 1 & 2, one-hour statement validation (for the quantitative research, described above)
  - Groups 3-7, Three-hour deliberative workshops on value to society
- 3.12 Recruitment reflected the mix of current TV services received; whether existing users of mobile services or those who expressed an interest; and age and social classification quotas:
  - 3.12.1 Group 1: Non-manual – ages 35-44 (London)
  - 3.12.2 Group 2: Manual – ages 18-24 (London)
  - 3.12.3 Group 3: Mixed social class – 18-24 (London)
  - 3.12.4 Group 4: Mixed social class – 25-34 (London)
  - 3.12.5 Group 5: Mixed social class – 55+ (Bristol)
  - 3.12.6 Group 6: Mixed social class – 35-44 (Bristol)
  - 3.12.7 Group 7: Mixed social class – 45-54 (Bristol)
- 3.13 In total, approximately 80 participants took part in the workshop groups.

- 3.14 As part of the research design participants acted as policy-makers in a 'chip allocation' exercise to decide service provision, as follows:
- 3.14.1 Each group was split into two sub-groups and was given the role of a policy unit responsible for deciding the relative value to society of each service.
  - 3.14.2 Each sub-group was given ten 'chips' ('points') and asked to share them between the three services (extra DTT services, mobile TV, mobile broadband) to show how important each is for the country as a whole
  - 3.14.3 The more important the services, the more chips allocated.
  - 3.14.4 After a consultation period as a 'policy unit', each sub-group reported back to a panel consisting of the other sub-group, a moderator and a member of the Ofcom research team.
  - 3.14.5 Each sub-group was also asked to give reasons for their decisions.
  - 3.14.6 The process was repeated to examine the importance of individual attributes of each potential new service (excluded price).
  - 3.14.7 Details of the attributes of each service were shown to sub-groups, using showcards.
  - 3.14.8 The aim of this exercise was to identify participants' perceptions of the relative value to society of the services tested, after debating and discussing what it was that made services valuable to society.

### **Questionnaire content**

- 3.15 Various established techniques were incorporated into the quantitative questionnaire to maximise the robustness of the results, and to provide some internal corroboration/triangulation.
- 3.15.1 Conjoint questioning was the main method used in this research. Respondents were presented with a series of scenarios and in each case asked which of the options they would buy or prefer. Utility values were calculated from these choices, showing the relative importance of each feature/attribute. This trade-off technique is effective at uncovering the strongest drivers of choice. The respondent is never questioned directly about what drives their choice, and so is not encouraged to give the answers they think are expected, or make more rational choices than they would do in real life. The 'forced' choice also prevents respondents from compiling an idealised wish list.
  - 3.15.2 'Chip allocation' was used as a check on the conjoint research results. However, this exercise excluded price. Respondents were asked to share ten points between services to indicate preference.
  - 3.15.3 'Gabor Granger' was also used to gauge the level of interest in subscribing to each of the three broad services investigated (extra DTT, mobile TV and mobile broadband) at different prices. This technique asked how interested respondents were in each service at several monthly subscription price points. Holden Pearmain Research applied scaling factors to these results to calibrate the conjoint research results so that we could estimate take-up

for the services at different prices and mixes of features. The scaling factors were 0.75 for those who expressed a definite intent to subscribe, 0.3 for probable intent and 0.1 for a state of indecision (may or may not subscribe). These scaling factors were applied based on Holden Pearmain's experience in this methodology, where consumers tend to overstate their willingness to pay for products and services in survey research.

- 3.15.4 Attitudinal statements were used to provide a deeper understanding on some of the value to society aspects of the spectrum release issue.
- 3.15.5 Diagnostic questions were also asked to provide further opinions on service usage and 'societal' versus 'private' views. For example, where did respondents think mobile broadband was likely to be used?

### **Addressing research limitations**

- 3.16 There are limitations involved in any research, and the following section details the general limitations, as well as limitations that pertain to this research specifically. Ofcom considers the research methodologies adopted to be appropriate and as robust as reasonably possible, given these limitations.

### **Limitations and uncertainties involved in any research**

- 3.17 Sampling error means that the percentages quoted in quantitative research and differences between percentages can only be viewed in the context of levels of confidence. A large sample size representative of the UK population means that we can be more sure that percentages are close to the true figure for the whole population.
- 3.18 Respondents' are not always willing to answer questions openly. This is more of a concern with sensitive subject matter and is unlikely to have had a significant impact on this research.
- 3.19 Even when respondents are willing to answer questions honestly, what they say they do, or think, is not always the same as their actual observed behaviour or views. This may be simply due to the limitations of memory, or may be caused by more complex psychological phenomena.
- 3.20 The snapshot aspect of a research study means that even if sampling error is very low, we are only measuring opinion at the time of the research. Opinion is subject to constant change, not always in a steady direction, and can move relatively quickly in the realm of technological progress.
- 3.21 In groups, we cannot be sure that people will reveal their true opinions because certain individuals may dominate the group. Also, social pressure tends to make individuals in a group situation lean more towards benefits for society as a whole rather than for the individual, whatever the individual may actually think.

### **Limitations and uncertainties specific to in this research**

- 3.22 The complex information being presented to respondents was possibly difficult for many of them to assimilate quickly. It may have been difficult for some respondents to make fine judgements about things that they had only just learned about.

- 3.23 This is one reason why the deliberative research was undertaken, so that people could have the chance to take in information more slowly and discuss it before being asked about their opinions.
- 3.24 With new services, respondents also often have to be shown the benefits in the real world, by early adopters before they will join in themselves. On the other hand, a new service might seem attractive at first sight, though in reality it may prove to be less useful/ valuable.

### **Limitations and uncertainties involved in using this research in this project**

- 3.25 As the information derived from this research is being used in a strategic project of national importance, it is even more important to bear these limitations in mind.
- 3.26 The research compared completely new mobile services with more familiar services on the DTT platform. Differing levels of familiarity may have had an impact on respondents' decisions. They may have over - or under-estimated the benefits of these services, based on their initial reactions.
- 3.27 Consumer opinions and preferences can change. Caution should be applied when using evidence of today's opinions and preferences to make judgements about the future.

### **Independent peer review**

- 3.28 This market research has been independently reviewed by a market research consultant<sup>3</sup>. The review concluded that the research methods selected were appropriate and that the research was conducted and executed according to market research industry best practice. The review suggested that the results from the social conjoint exercise should be set aside from the research conclusions. Ofcom agreed with this recommendation; these results are referred to in Appendix 8.

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<sup>3</sup> The review was conducted by Jonathan Fletcher, Managing Director of Illuminas Research.



## Section 4

# Overview

### Initial response to services – UK adult population

**Digital television and DTT were already well understood; however, there was also significant interest in mobile broadband and mobile TV**

- 4.1 As noted in Section 3, the sample for the quantitative survey was representative of an estimated 89% of the UK adult population, excluding those who have no stated interest in the digital services being researched. Previous Ofcom research suggests that 11% of the population are technology-averse<sup>4</sup>. The results discussed in this section have been extrapolated to the total UK adult population.
- 4.2 DTT was widely understood, primarily in the form of Freeview, which 85% of consumers were aware of. There was also broad awareness of digital switchover, at over 70% of the UK adult population.
- 4.3 Even among those respondents who claimed to have access to analogue terrestrial television channels only (14% of the sample) the majority (83%) were very, or fairly, interested in a widely available and affordable digital TV service.
- 4.4 In the context of a market where mobile phones have almost universal penetration and over a third of the sample used some form of mobile audio / video device (most commonly an MP3 player), nearly half (49%) of consumers surveyed showed interest in the (perhaps similar) concept of mobile TV. Mobile TV was of slightly more interest to those aged under 35 and of C2DE social groups.
- 4.5 A similar proportion (51%) showed interest in the concept of mobile broadband, which is close to the proportion (45%) that were already using some kind of mobile data device, either a mobile phone or another portable device, to access the internet and/or email. Mobile broadband was of most interest to men aged 35-44 in AB social groups.

### Chip allocation – rank and importance analysis

Greatest value was attached to Digital TV, both from a personal perspective and in terms of additional value to society, but all services had some value

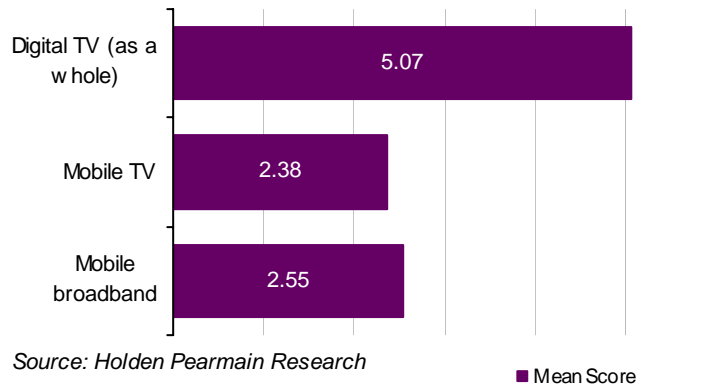
- 4.6 When respondents were given ten points in a chip allocation exercise to demonstrate individual preferences, Digital TV (as a single concept<sup>5</sup>) was more likely to be preferred than either mobile service. Mobile broadband was shown to be slightly more preferred than mobile TV. This finding broadly echoes the overall interest in each service described above, and as such reflects the relative levels of current familiarity with similar technologies. While there is a clearly preferred service in this exercise, there is no 'runaway' leader or laggards, suggesting that all services have some value to consumers.

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<sup>4</sup> See [http://www.ofcom.org.uk/research/cm/consumer\\_engagement/](http://www.ofcom.org.uk/research/cm/consumer_engagement/)

<sup>5</sup> No distinction was made between digital TV platforms at this stage, so this definition can be considered to include DTT, cable, satellite and other platforms.

**Figure 4.1: Preference rating for digital TV, mobile broadband and mobile TV (value to individuals)**



Figures shown on the chart represent the mean score out of 10 that respondents allocated to each service

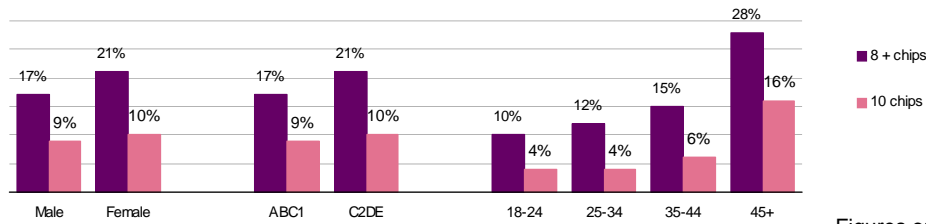
QA9: Chip allocation - mean scores. "Imagine that you had **ten** points to share between these services – digital TV, mobile TV and mobile broadband Internet. How many points would you give to each?"

"Please share the points across the three services to show me your preference. You may give as many or as few points to each service as you like, or indeed none at all".

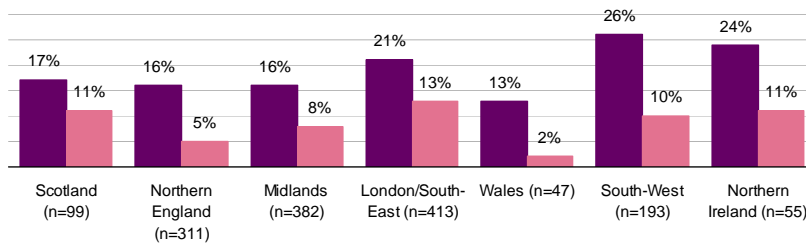
Base: Total sample representing 89% of population, n = 1500

4.7 Although on average across the total sample digital TV as a whole was preferred about twice as much as either of the two mobile services, there was a core of digital TV advocates who allocated it eight to ten chips, comprising some 20% of the sample. This core group was more likely to be aged 45+.

**Figure 4.2: Preference rating for digital TV, 8 + and 10 chips (value to individuals)**



Figures on chart show the proportion of respondents who allocated 8 to 10 points to digital TV



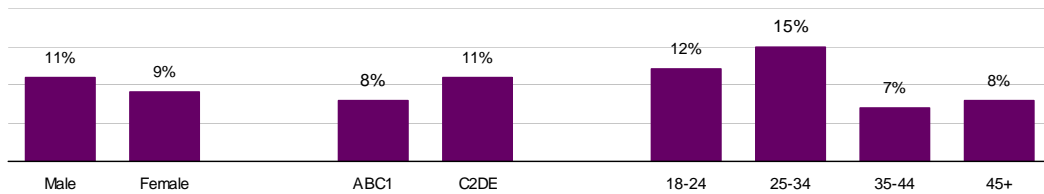
Source: Holden Pearmain Research

QA9: Chip allocation – digital TV as a whole. “Imagine that you had ten points to share between these services – digital TV, mobile TV and mobile broadband Internet. How many points would you give to each? Please share the points across the three services to show me your preference. You may give as many or as few points to each service as you like, or indeed none at all”

Base: Total sample representing 89% of population, n = 1500

4.8 By contrast, the majority (77%) of respondents gave mobile TV up to three of their chips, with only one in ten giving this service five or more chips. This core group of mobile TV supporters were more likely to be under 35, and C2DE.

**Figure 4.3: Preference rating for mobile TV, 5+ chips (value to individuals)**



Figures on chart show the proportion of respondents who allocated five or more points to mobile TV



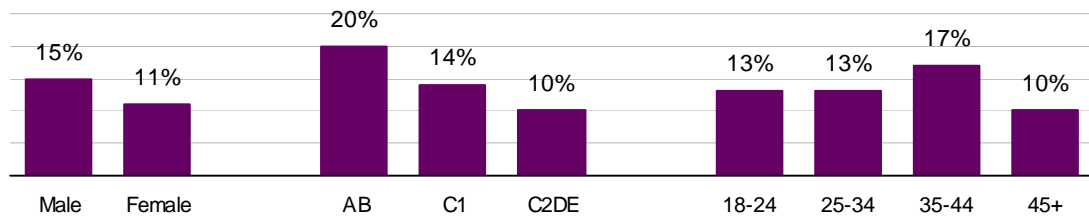
Source: Holden Pearmain Research

QA9: Chip allocation – mobile TV. “Imagine that you had ten points to share between these services – digital TV, mobile TV and mobile broadband Internet. How many points would you give to each? Please share the points across the three services to show me your preference. You may give as many or as few points to each service as you like, or indeed none at all”

Base: Total sample representing 89% of population, n = 1500

4.9 Similarly most (72%) respondents gave mobile broadband only three chips or fewer, but there was a minority of 12% who allocated five or more points to this service. This group was more likely to be AB social group, male, aged 35-44 and living in the South.

**Figure 4.4: Preference rating for mobile broadband, 5+ chips (value to individuals)**



Figures shown on chart show the proportion of respondents who allocated five or more points to mobile broadband



Source: Holden Pearmain Research

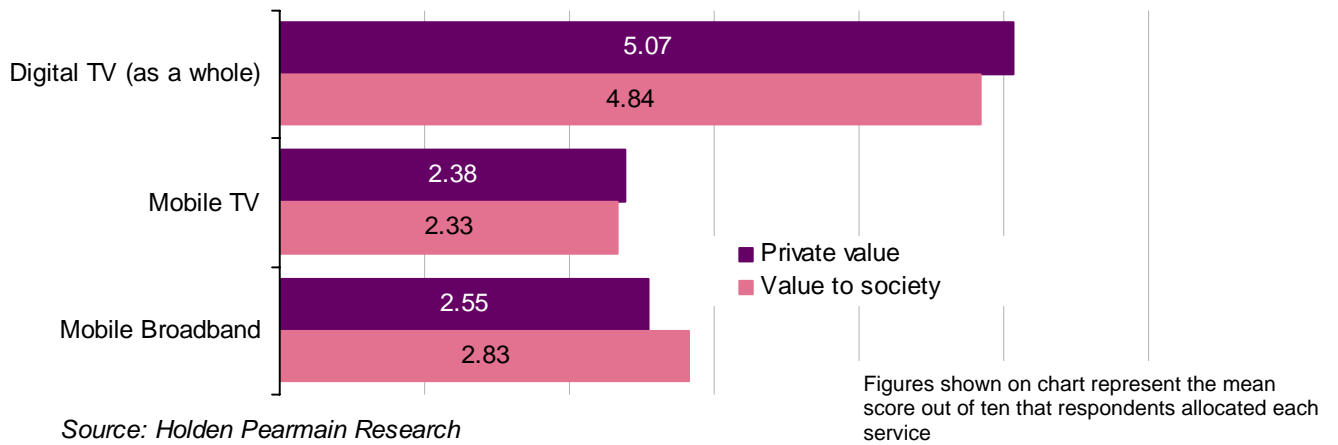
QA9: Chip Allocation – mobile broadband. “Imagine that you had ten points to share between these services – digital TV, mobile TV and mobile broadband internet. How many points would you give to each? Please share the points across the three services to show me your preference. You may give as many or as few points to each service as you like, or indeed none at all”.

Base: Total sample representing 89% of population, n = 1500

**Methodologies where consumers have to make a trade off reveal little or no additional value to society for any of the services**

4.10 The chip allocation exercise was repeated, with respondents asked to allocate points to show importance to the country as a whole. Responses were relatively consistent with personal preferences. Mobile broadband was given slightly greater importance in terms of value to society, at the expense of digital TV. This suggests that when consumers were forced to make a choice, their perception of the value to society tended to be similar to their own individual preferences.

**Figure 4.5: Preference rating for digital TV, mobile broadband and mobile TV (value to individuals vs. value to society)**



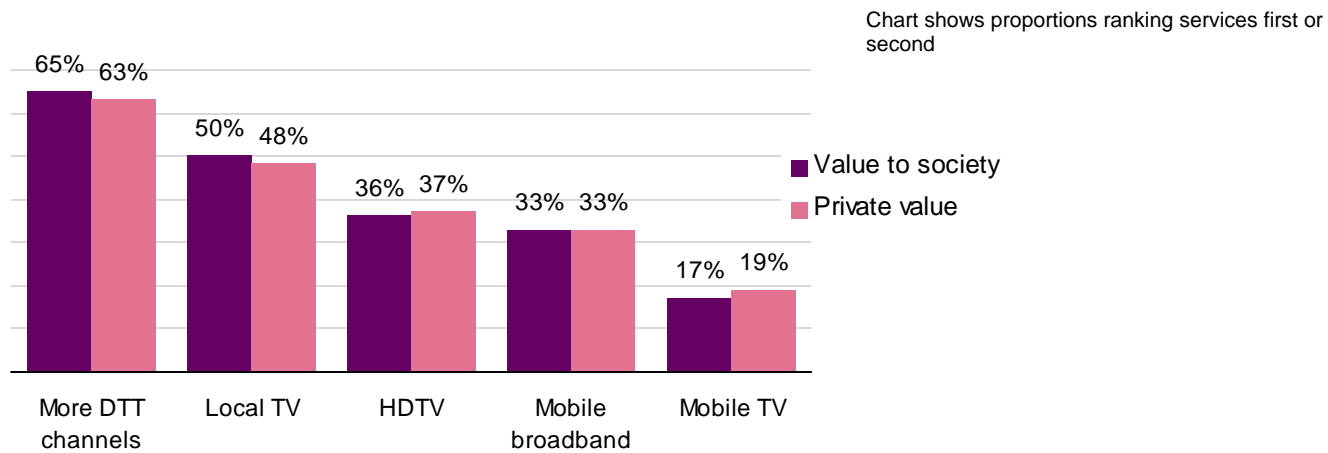
QA9: Chip allocation – “Imagine that you had **ten** points to share between these services – digital TV, mobile TV and mobile broadband internet. How many points would you give to each? Please share the points across the three services to show me your preference. You may give as many or as few points to each service as you like, or indeed none at all.”

QPG2: Chip allocation – “Still thinking about **the country as a whole**, I’d like you to share ten points between the three service – digital TV, mobile TV and mobile broadband internet – to show me how important you think each is for the country as a whole. How many points would you give to each? Please share the points across the three services - you may give as many or as few points to each service as you like, or indeed none at all.”

Base: Total sample representing 89% of population, n = 1500

4.11 Respondents were asked to rank a number of digital services in order of importance to them personally, and to the country as a whole. More DTT channels were considered most important, in line with other findings from the research, followed by local TV. The provision of HDTV and mobile broadband were on a par in terms of importance, with mobile TV deemed to be the least important. Where respondents were forced to make a choice (i.e. rank order), there was little distinction between the private and the societal rankings, again suggesting that in such a scenario, the perceived value to society is similar to private preferences.

**Figure 4.6: Importance ranking for digital technologies (value to individuals vs. value to society)**



Source: Holden Pearmain Research

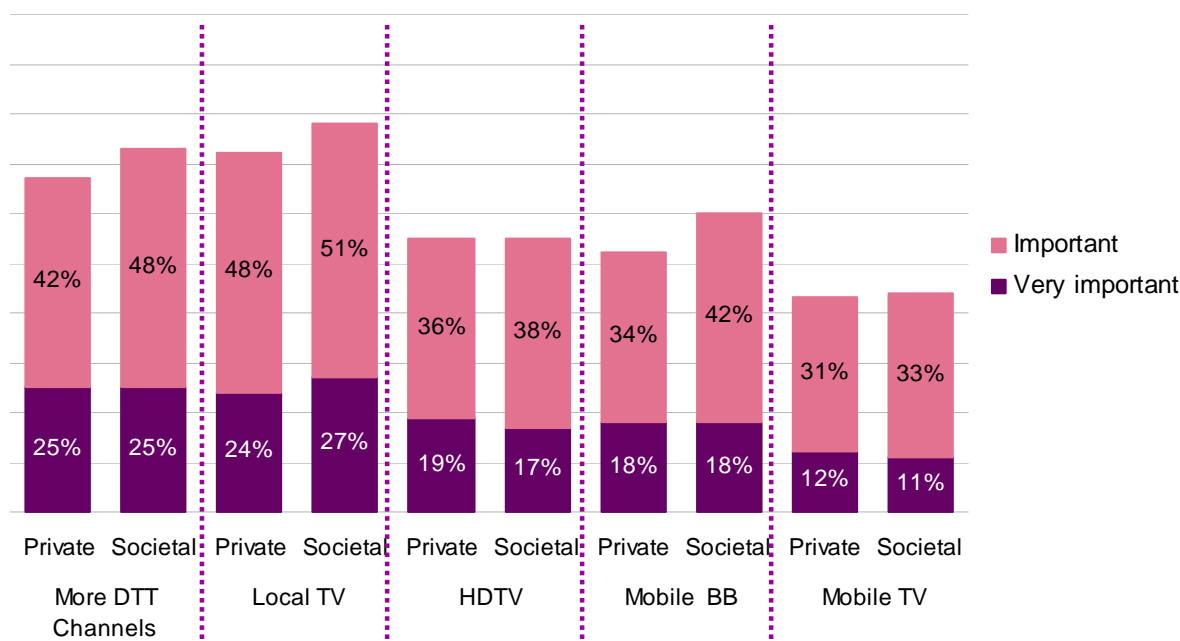
QC2a/b: "Please rank these new services in the order of importance you think they are to the country as a whole/to you individually." Proportion ranking services 1<sup>st</sup> / 2<sup>nd</sup>

Base: Total sample representing 89% of population, n = 1500

Methodologies where consumers do not have to make a trade off show small increases in perceived value to society of more DTT channels, local TV and mobile broadband

- 4.12 However, when the choice is not forced, mobile broadband, more DTT channels and local TV all were rated as having greater importance in terms of value to society than to the individual.
- 4.13 Consistently across all methodologies used, both quantitative and qualitative, HDTV and mobile TV did not appear to have any additional value to society above their private values. The qualitative research suggested both were perceived as luxury services that would appeal to a minority.

**Figure 4.7: Importance of digital technologies (value to individuals vs. value to society)**



QC1a/b: “How important do you think it is that (each technology) is available to all UK citizens / you personally?”

Base: Total sample representing 89% of population, n = 1500

**Improving mobile phone coverage was also rated as relatively important**

4.14 The additional omnibus research amongst GB adults suggested that consumers attached a similar level of importance and value to improving mobile phone coverage<sup>6</sup> as they did to more DTT channels and local TV. The omnibus research also suggested that improving mobile phone service had some perceived additional value to society. This is perhaps related to the importance of coverage in assessing the value to society of a service, as identified by the deliberative research.

**Wireless home networks were relatively unimportant and had no perceived additional value to society**

4.15 Wireless home networks that would allow devices in the home, such as TV sets and PCs to ‘communicate’ without the need for wires, were also tested in the additional omnibus research. The service was rated at a similar level of importance and value to HDTV services, and similar to HDTV was perceived to have little or no additional value to society.

<sup>6</sup>So that mobile multi-media services, such as accessing video clips and making video calls would be more widely available.

## Gabor Granger – willingness to pay

### Significant proportions claimed they would subscribe to each digital service, but interest tailed off quickly as price increased

4.16 A sample of GB adults were asked how likely they would be to subscribe to packages of services at various price points. The findings from this exercise have been down-weighted to counteract the research effect whereby respondents generally overstate their likelihood to purchase/subscribe in an interview context. The magnitude of this weighting is not precise and is derived from the general research experience of the agency Holden Pearmain. Therefore the figures derived from this exercise should be regarded as estimates only. The proportion of all GB adults estimated to be currently willing to purchase each service at each price point is shown in Figure 4.8.

**Figure 4.8: Estimated likelihood of subscribing to service packages at various prices**

Service description	% of GB adult population willing to pay at different monthly subscription prices (down-weighted to scale advised by Holden Pearmain <sup>7</sup> )					
	Free of charge	£2.50 <sup>8</sup>	£5	£10	£15	Revenue maximising price (estimate) <sup>9</sup>
<b>8 extra standard definition channels</b>	40%	-	13%	6%	3%	£4.50-£6
<b>BBC1, ITV1 and C4 in HD</b>	35%	-	10%	4%	2%	£4-£5.50
<b>3 local TV channels</b>	34%	-	9%	3%	1%	£4
<b>1 local TV Channel</b>	32%	14%	7%	3%	1%	£3-£4.50
<b>2Mbps mobile broadband, with full mobility and same coverage as mobile phone</b>	31%	-	15%	9%	4%	£7-£7.50
<b>5 mobile TV channels, integrated device, mobile phone coverage</b>	26%	-	10%	4%	2%	£5-£6
<b>32 mobile TV channels, integrated device, mobile phone coverage</b>	27%	-	12%	7%	3%	£6-£7
<b>Improved mobile coverage</b>	35%	-	14%	7%	3%	£5.50 - £6
<b>Wireless home networks</b>	35%	-	22%	12%	5%	£8-£11

Base: GB adults, n = 976. Source: BMRB omnibus survey

<sup>7</sup> “Definitely” weighted at 0.75, “Probably” at 0.3 and “May or may not” at 0.1

<sup>8</sup> Price point only asked for one Local TV channel. The £2.50 price point was introduced as a separate question after the Gabor Granger estimates so all other price points are directly comparable with other service options.

<sup>9</sup> Estimate of the point where the area (price multiplied by uptake) under the curve is greatest. The real price within the range shown. Does not take into account supply.

- 4.17 The proportion of adults estimated to be willing to pay small monthly subscriptions varies from about one in ten to one in five, depending on the service offered. The proportions willing to pay fell sharply as price increased, with an estimated 5% of the population or less willing to pay £15 per month for each service tested.
- 4.18 Of all services tested wireless home networks attracted the highest claimed willingness to pay at each price point tested. As wireless home networks were rated as one of the least important services in the ranking and importance rating exercises, it appears that, among a minority of consumers who are interested in this type of service, there is particularly high willingness to pay.
- 4.19 Despite achieving high ratings in the ranking and importance exercise, local TV services attracted the lowest willingness to pay.
- 4.20 Of course, the standard definition, high definition, local TV and wireless networks services would probably be restricted to one purchase per household, rather than by individuals – as they are services that the whole household can easily access once purchased, so this may mean that total consumer willingness to pay for these services is restricted by this.
- 4.21 Willingness to pay for each of the services tested in the main quantitative research is discussed in greater detail within the relevant sections of the report.

### **Deliberative research**

#### **While additional standard definition channels and local TV were thought to offer potential additional value to society, mobile TV and HDTV were perceived as niche services, with little or no additional value to society**

- 4.22 During the deliberative qualitative research, respondents were given a chip allocation exercise and encouraged to act as policy-makers. They were asked to assess the importance of additional services on DTT, mobile broadband and mobile TV from a value-to-society perspective, allocating chips according to which service they thought should be prioritised for the benefit of society as a whole. Respondents acted in 'policy unit' groups, and were required to report back to other respondents, justifying their decisions.
- 4.23 In the majority of cases, additional services on DTT<sup>10</sup> were felt to be the most important service, followed by mobile broadband. Mobile TV was considered to be more of a luxury. The reasons given for these decisions appeared to be driven, to a large extent, by participants' views that value to society was dependent on a service being available to and valued by all.
- 4.24 New services on DTT were considered to offer the most value to society because they were likely to have the greatest appeal to most of the country, and could broadcast community information.

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<sup>10</sup> In the deliberative research, additional services on DTT referred to increased number of standard definition channels, local TV services and high-definition TV services.

“... it was the platform that offers the most access to the larger population watching and using. It lends a greater sense of community to people because it’s sort of this ubiquitous thing, everybody watches TV” London, 25-34 year old

- 4.25 Where mobile broadband was considered to have greater value to society, this was because it was felt to offer more flexibility and potential, and was a more interactive medium than TV.

“I didn’t really feel that with digital TV you would be getting any more than you’re already getting, you know, it’s all the same sort of information. Whereas the mobile broadband gave a much greater range of opportunities” Bristol, 35-44 year old

- 4.26 The perceived niche appeal of mobile TV, perhaps only accessible by relatively wealthy consumers, meant that this service was seen to have limited value to society and was perceived as a luxury.



## Section 5

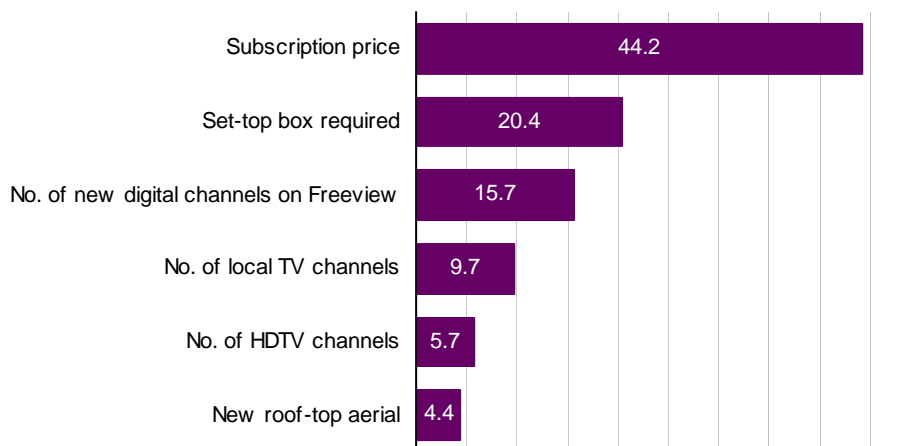
# DTT services

## Comparison of features

### After price, and the cost of the set top box, the number of standard definition channels was the most important factor in DTT package choices

5.1 A conjoint exercise was undertaken during the interview to ascertain the factors consumers considered most important when choosing a hypothetical DTT package, from the private, individual perspective. Cost was the most important factor when choosing such packages, most notably in terms of the monthly subscription required, but also the need for extra hardware in the form of a set top box.

Figure 5.1: Importance of factors in uptake of DTT (value to individuals)\*



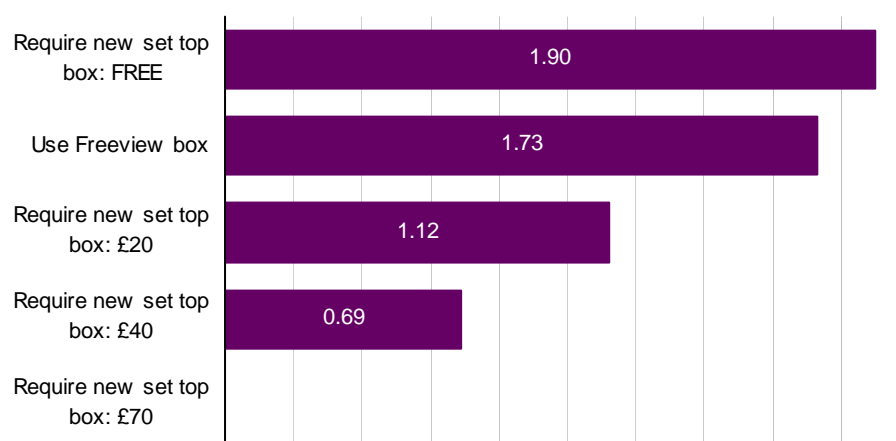
Source: Holden Pearmain Research

DTT Conjoint: attribute importance: "Please consider each scenario and choose the option you think your household would choose." Base: Total sample representing 88% of the population, interested in DTT n =621

\*The figures shown in the chart above are utility values derived from the conjoint exercise. Utility values show the **relative** importance or preferences of service attributes, and are not absolute values, nor do they represent percentages of the sample. The figures are only comparable to other figures in the same chart and not to other charts in this document.

5.2 However, if the requirement for a set top box could be met by using an existing Freeview box rather than purchasing a new box then this was less likely to dissuade respondents from choosing a particular package.

**Figure 5.2: Relative appeal of set-top box options (value to individuals)\***



Source: Holden Pearmain Research

DTT Value Conjoint exercise: relative utility values. "Please consider each scenario and choose the option you think your household would choose."

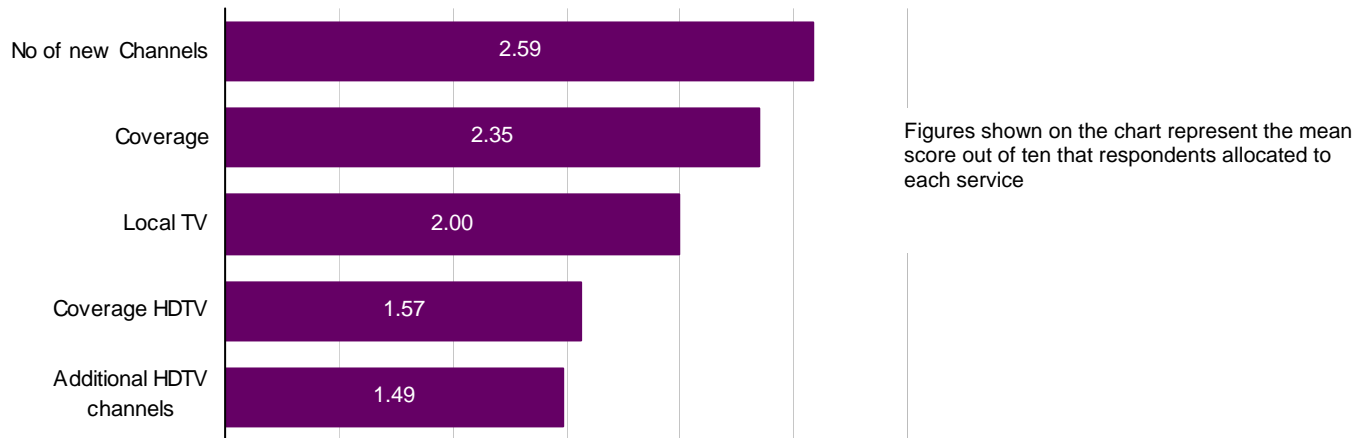
Base: Total sample representing 88% of the population, interested in DTT, n =621

\*The figures shown in the chart above are utility values derived from the conjoint research. Utility values show the **relative** importance or preferences of service attributes, and are not absolute values, nor do they represent percentages of the sample. The figures are only comparable to other figures in the same chart and not to other charts in this document.

- 5.3 Apart from cost, the number of new digital channels that a DTT service could provide was the next most important factor for the individual. There was no substantial variation in the relative importance of features by demographic sub-groups.
- 5.4 The number of new channels was also an important issue when respondents were asked to think beyond their private perspective and consider the needs of the country as a whole, or value to society, using a 'chip allocation' technique. In fact, from the perspective of society, the number of additional Freeview channels was the most important consideration, closely followed by universal breadth of coverage<sup>11</sup>. The qualitative research, where participants were encouraged to think more consensually, both explicitly and also implicitly as a result of the group environment, confirmed the importance of universal coverage in the context of value to society. This was deemed the most important consideration across all groups, regardless of age, class or geography.

<sup>11</sup> Service cost was not included in the questions about value to society.

**Figure 5.3: Importance of factors in DTT service offerings (Value to society)**



Source: Holden Pearmain Research

PG3: DTT chip allocation - mean scores. "I'd like you to share ten points between these to show me how important you think each one is to **the country as a whole**. How many points would you give to each? You may give as many or as few points to each as you like, or indeed none at all."

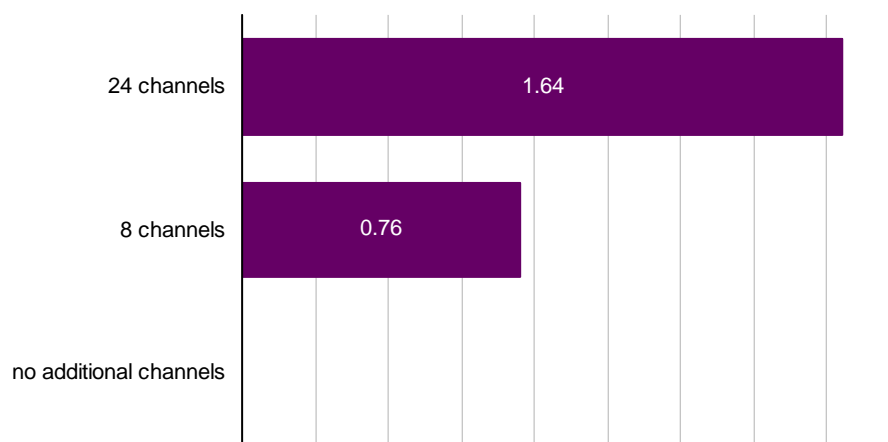
Base: Total sample representing 89% of population, n=1500

## The value to individuals of extra standard definition channels

### The incremental value of an extra standard definition channel declines between the eighth and twenty-fourth new channel

5.5 After cost considerations, from a private perspective the number of standard definition (SD) channels was the most important factor consumers took into account when choosing which hypothetical DTT package they would subscribe to in the stated choice exercise. The conjoint analysis showed that consumers were much more likely to pick a package with 24 additional channels than eight, although the additional value of extra channels after the eighth new one had relatively less impact on appeal.

**Figure 5.4: Relative appeal of the number of additional standard definition Freeview channels\* (value to individuals)**



Source: Holden Pearmain Research

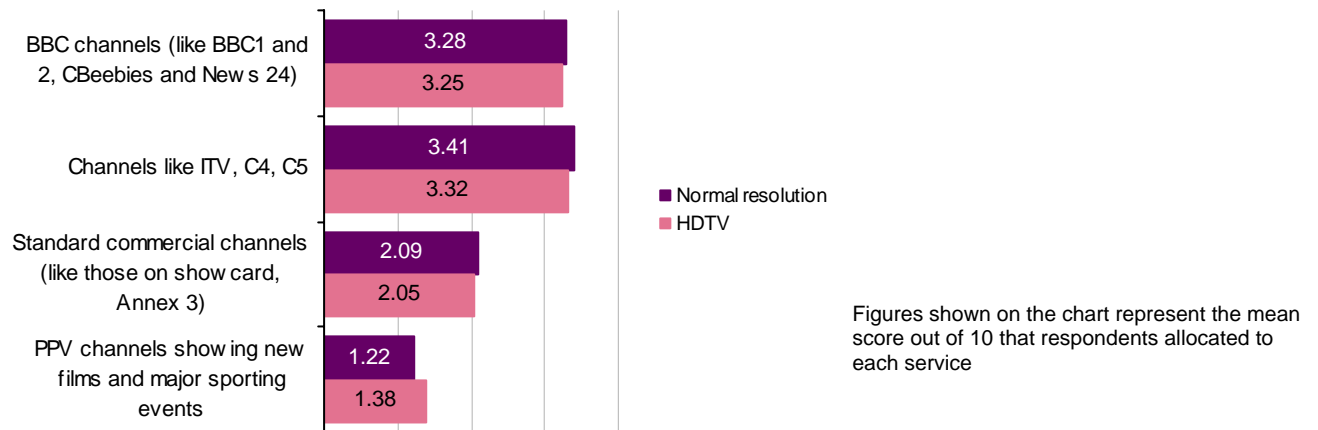
DTT Value conjoint exercise: relative utility values. "Please consider each scenario and choose the option you think your household would choose."

Base: Total sample representing 88% of the population, interested in DTT, n=621

\*The figures shown in the chart above are utility values derived from the conjoint research. Utility values show the relative importance or preferences of service attributes, and are not absolute values, nor do they represent percentages of the sample. The figures are only comparable to other figures in the same chart and not to other charts in this document.

5.6 When respondents were given the opportunity to state their preferences for the form these additional channels might take, using a 'chip allocation' exercise, BBC channels and channels like ITV, Channel 4 and Channel 5 were preferred over other commercial channels (that were like other channels on the current Freeview offering) and pay-per-view channels.

**Figure 5.5: Preference for the type of additional Freeview channels (value to individuals)**



Source: Holden Pearmain Research

QT5a: "Assuming that ten channels were available overall, how many would you like to have of each of these types of channels?"

Base: Representing 89% of the population, interested in digital TV n =629

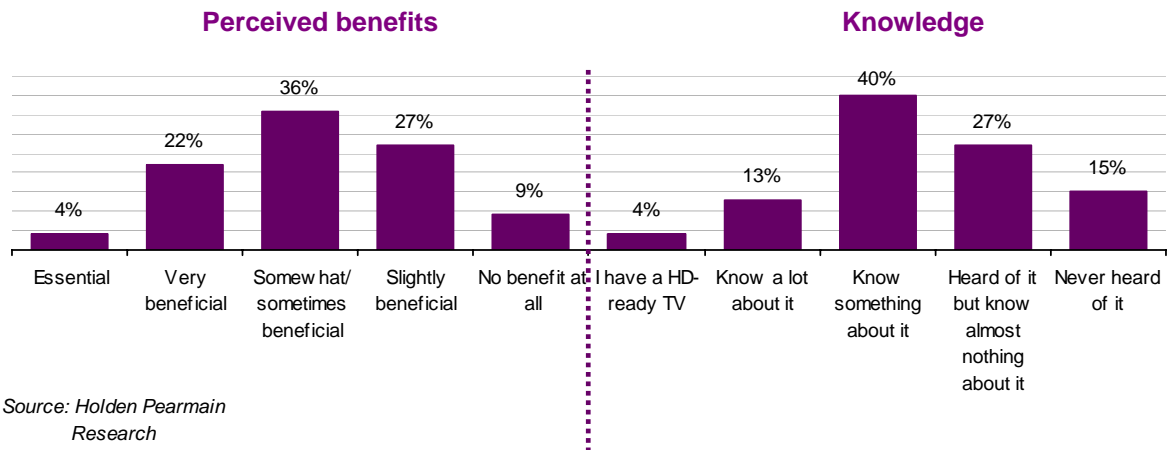
5.7 Interestingly there were no substantial differences in the types of channel preferred when asked about HDTV, with the exception that pay-per-view channels were slightly more preferred. When asked what the benefits of additional channels would be, the most common spontaneous response was that this would give more choice (mentioned by 63%). Consumers could think of few other benefits spontaneously.

### The value to individuals of HDTV

#### Knowledge and awareness of HDTV is currently low, as are perceptions of its potential benefits

- 5.8 The number of HDTV channels was relatively unimportant when consumers were choosing DTT packages in the conjoint exercise (Figure 5.1).
- 5.9 Furthermore, additional HDTV channels and the breadth of HDTV coverage were of least importance from a value to society perspective (Figure 5.3). This is perhaps to be expected when only a quarter (26%) of consumers considered HDTV to be essential or very beneficial, which in turn may be affected by the relatively low awareness of HDTV at the time of the research (42% of the sample knew almost nothing about HDTV or had never heard of it).

**Figure 5.6: Knowledge and perceived benefits of HDTV**

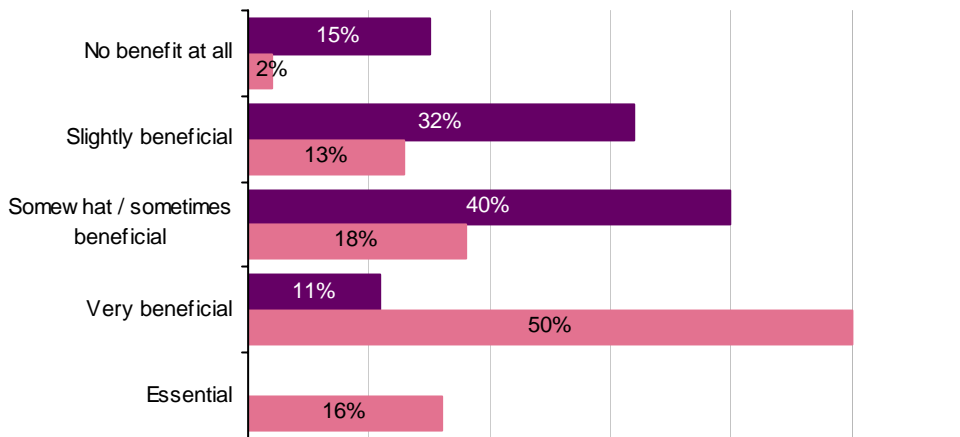


QB6/QB7: “How much of a benefit to the viewer do you think HDTV would be?/ Which one of these phrases best reflects your knowledge of HDTV?”

Base: Total sample representing 89% of population, n = 1500

5.10 Figure 5.7 suggests that if the currently low awareness/knowledge of HDTV increased in the future then perceptions of the potential benefits of this new technology may improve. Two-thirds (66%) of those who had HDTV or claimed to know a lot about it rated the technology as essential or very beneficial, dropping to just one in ten (11%) of those who knew very little about HDTV or had never heard of it.

**Figure 5.7: Perceived benefits of HDTV by awareness/knowledge (value to individuals)**



Source: Holden Pearmain Research

■ Never heard / know little  
 ■ Know a lot/have one

QB6/QB7: “Which one of these phrases best reflects your knowledge of HDTV? /How much of a benefit to the viewer do you think HDTV would be?”

Base: Total sample representing 89% of population, n =1500

5.11 The quantitative findings are corroborated by comments from the qualitative research, where HD was seen as a luxury niche item by many.

“I think people are being conned into HDTV at the moment, because every set they see has got HDTV ready on it and so people are being conned that they’ve got to have one...the quality we’ve got now is perfectly adequate” Bristol, 55+ year old

- 5.12 There were even some concerns that the bandwidth required for HDTV could compromise universal coverage.
- 5.13 Among the section of the sample who were most knowledgeable about HDTV, overall service rankings were fairly similar, both on the basis of the value to individuals and the value to society, with HDTV and mobile broadband being slightly more popular and local TV being less popular than the average.

**The value to individuals of local TV**

**Local TV was relatively unimportant in the choice of DTT packages, and perceived mainly as a provider of local news and travel updates**

- 5.14 As illustrated earlier in figure 5.1, local TV was rated as relatively unimportant from a private perspective when consumers were choosing hypothetical DTT packages (price, set top box cost and number of additional standard definition channels were more important).
- 5.15 The primary benefit of local TV was said to be local news and travel updates, mentioned spontaneously by 57% of respondents.

**Table 1: Perceived benefits of more local TV channels (spontaneous)**

<b>Good for news/travel updates in local area</b>	57%
<b>Events/ entertainments-"What's On"</b>	12%
<b>More chances to get involved locally</b>	4%
<b>People would watch TV more/more to watch</b>	4%
<b>No benefit</b>	8%

QB5. “And what benefits to people would there be in having more local channels on TV?”

**Value to individuals vs. value to society**

**Universal access was the first principle of any DTT debate**

- 5.16 The qualitative research allowed and encouraged more consideration of the societal, as opposed to the private, benefits of DTT. The findings from this process showed a strong feeling that at the heart of any discussion about the value to society of DTT (or indeed any service) must come the principle of universal access. Respondents commonly felt that no segment of society should be denied access to the benefits of new DTT services because of financial, geographical or other barriers.

“Ensure that people are going to have access to it like with the Freeview boxes, people that perhaps don’t have one at the moment and don’t really want one, say if you do have pensioners who don’t want to buy a Freeview box (they) should they get one automatically without having to pay for it” London, 18-24 year old

“Breadth of population coverage is socially right and should be done to give everybody an opportunity to see digital TV” Bristol, 55+ year old

- 5.17 However, there was also common agreement that access for all did not have to mean that all must access. A niche channel could still provide value to society, an example being young mothers who might access a diagnostic health channel. It was also believed across the groups that breadth of coverage was more important than a no-cost (i.e. free) service and that coverage should not be sacrificed to achieve this, and that the principle of excluding no-one on the basis of the cost of achieving coverage should be adhered to.

“I don’t think that’s acceptable for people living in seemingly isolated rural areas who pay their taxes just the same as everybody else does, not to have the same access as someone living in a city” London, 18-24 year old

- 5.18 There was even some concern that HDTV could hinder the principle of universal coverage.

“The one thing that got nothing at all was HDTV with the population coverage because that looks as though that’s going to stop everything else if we get it” Bristol, 45-54 year old

### **The value to society of extra standard definition channels**

#### **Quality of content was thought to be more important than the quantity of channels, although extra channels could serve niche audiences and have value to society**

- 5.19 Another view commonly held across the groups was that the proliferation of new channels would be no guarantee of better quality, and indeed could lead to a ‘dumbing down’. To a large extent it was felt that providing value to society is more a function of the quality of the channels than the quantity.

“It’s the quality that needs improving isn’t it, not more channels” Bristol, 55+ year old

- 5.20 However, it was also recognised that providing value to society is a trade-off between the number and quality of channels, and that an outcome of additional channels could be the ability to cater for a wider range of interests.

“I think there’s something on cable TV called Teachers’ TV that is a really good idea...we have all these channels for entertainment and I think we should have something devoted to education...something that’s a bit different, something that I can’t get elsewhere” London, 18-24 year old

- 5.21 In addition to enabling more niche channels, additional channels were seen to be capable of offering a wider range of programming to a broader audience. It was perceived that value to society can be generated through the provision of healthcare services and international / other language TV channels, thereby providing an insight into other nationalities and cultures.

## The value to society of HDTV

### HDTV had relatively less perceived value to society

5.22 In line with other findings, relatively less importance was attached to HDTV issues, for reasons already discussed. Mobile TV was also a relatively low priority.

## The value to society of Local TV

### Local TV services were perceived as potentially valuable to society, though the quality of content was important

5.23 Views on the value to society of local TV were more varied, and subject to some caveats. Certainly some felt that Local TV could be of value to society, but in order for it to be valuable at all the local community had to be of sufficient size. For this reason local TV had more appeal in large urban areas like London than in smaller areas such as Bristol.

“If there was something where people could get their message across - useful stuff like for the local elections just gone - to their local community by having a TV show or something it would be a good thing” London, 25-34 year old

5.24 There were concerns that where communities were too small local TV would not be cost-effective, and there may be insufficient interesting content to warrant the channel. For example, in Bristol the current coverage through local news (HTV and BBC Points West) was deemed to be probably sufficient, without the need to drill down any further.

“The idea of going even more local in this part of the world fills me with dread, it’s pretty horrendous as it is, you know, headline story, ‘cat wakes up in Weston-super-Mare’.” Bristol, 45-54 year old

5.25 Furthermore, taken to its logical conclusion, some people felt that Local TV could prove counter-productive. Coverage of very local events could actually discourage some people from attending an event, damaging community spirit and the value to society of the event.

“But then if you strip out the element of the community that you are trying to promote, what’s the point of going to the May Day festival if somebody is going to televise it... You actually remove the community interaction – I can watch on television so I won’t actually come out to that” Bristol, 35-44 year old

5.26 Respondents were asked to rate the importance of a series of statements that assessed the importance for UK society of new digital services. Statements that had the highest level of agreement tended to be focussed on local issues.

5.27 The issues that were most often rated as most important were:

- Computers in public buildings are able to connect to the internet at low cost.
- Local news and information available on TV at home

- Local news and information about your area available from at least one media source
- Programmes about community, local people and events are available on TV at home

**Table 2 Proportion rating each statement among the most important issues (rankings relate to value to society)**

Computers in public buildings are able connect to the internet at low cost	61%	
Local news and information are available on your TV at home	58%	} Local issues score highly
Local news and information about your area is available from at least one media source	54%	
Programmes about your community, local people and events are available on your TV at home	51%	
More channels are made available on Freeview	50%	
High speed mobile internet connections are available – throughout the UK, including the most rural areas	48%	
The latest mobile phone services are available - throughout the UK, including the most rural areas	47%	
Channels broadcast in HDTV are affordable to the vast majority of people	44%	
Mobile TV is affordable to most people	41%	
High speed mobile internet connections are available in towns and cities	41%	
HDTV is available throughout the country	39%	
HDTV is available on Freeview as well as on cable and satellite TV	39%	
The latest mobile phone services and technologies are available in towns and cities	38%	
In addition to your TV at home the main terrestrial channels are made available on new technologies such as mobile TV and the internet	38%	
Mobile TV allows people to access television programmes at times when they wouldn't normally be able to see them	33%	
Mobile TV is available throughout the country	33%	
In addition to standard broadcast, the main five television channels are available in HD format	32%	

Q. PG7. "These are the statements you think are most important for **UK society as a whole**. Please can you now order these statements to show me which one is most important down to the one you think is least important. Remember, we are talking about importance for **UK society as a whole**"

5.28 The first of these statements aligns with the importance attached to universal access uncovered in the qualitative research with regard to DTT. The importance of local TV is emphasised in the quantitative research, but should be subject to the caveats uncovered in the qualitative research with regard to the content and the definition of "local", as described above.

## Willingness to pay for DTT services

**Approximately one in ten adults were estimated to be willing to pay £5 per month for eight standard definition channels, three HDTV channels or three Local TV channels**

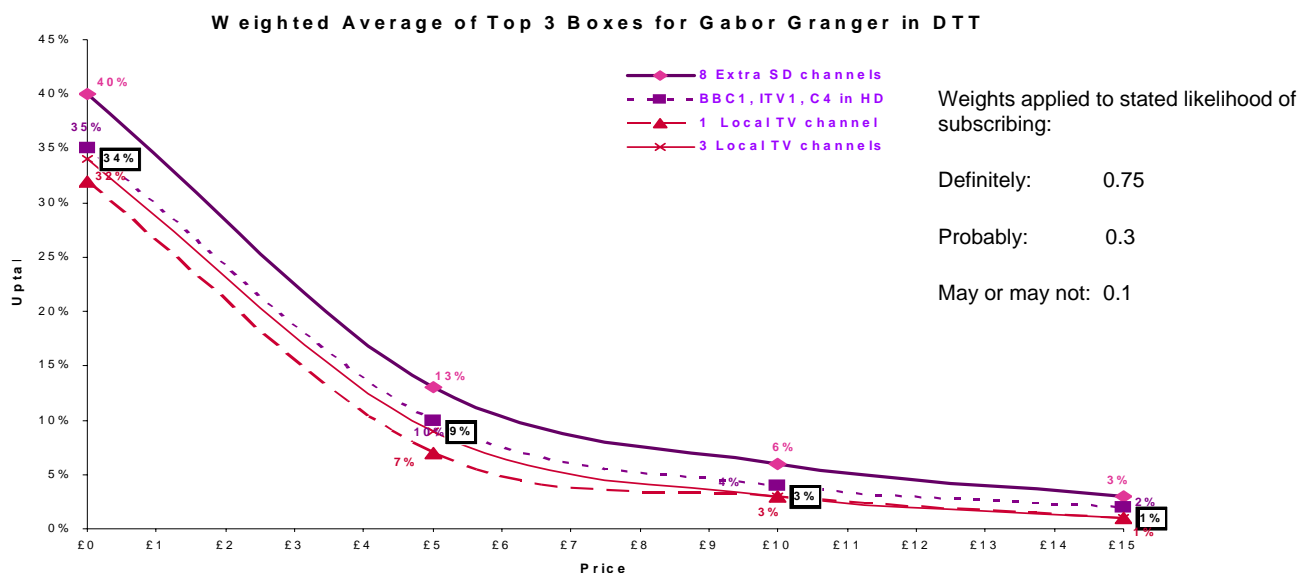
5.29 Respondents were asked the likelihood of their subscribing to four potential service offerings on the DTT platform at four price points (free, £5, £10, £15), known as a Gabor Granger test. The following charts show the proportion that gave one of the top three answers from the scale at each price point (definitely/probably/may or may not subscribe). Each of these categories has been weighted on the understanding that not all of those who said they would subscribe would actually do so, in order to give a more meaningful and accurate measure. These weights are based on the experience of the research agency Holden Pearmain with this type of data across many surveys.

5.30 Across all price points potential uptake of new DTT services was highest for eight extra standard definition channels, and lowest for one local TV channel. Only a very small minority (3% or less) are estimated to be willing to subscribe to any of the services tested for a cost of £15 per month. Based on these demand curves, the price at which revenue might be maximised is at approximately £4 - £6 per month for each service<sup>12</sup>.

**One HD channel is estimated to have approximately the same value as two standard definition channels**

5.31 This data suggests that the value to consumers of eight additional standard definition channels is slightly more than three additional HD channels, suggesting that one HD channel has approximately the same amount of value as two additional SD channels.

**Figure 5.8: Likelihood of subscribing to DTT service at various price points**



Q. "How likely would you be to subscribe to this service at the monthly price of..."

Base: All GB adults, n=976

<sup>12</sup> Note that this is an estimate based on the demand curve from the market research only.

### **One local TV channel appears to satisfy most of the demand for local TV**

- 5.32 The increase in value associated with offering three local TV channels instead of one appears to be marginal, suggesting that the incremental value of local TV channels might drop rapidly after the first channel. This is consistent with the deliberative research.
- 5.33 The survey also asked respondents whether they would pay £2.50 for one local TV channel. The (down-weighted) proportion that said they would was 14%.



## Section 6

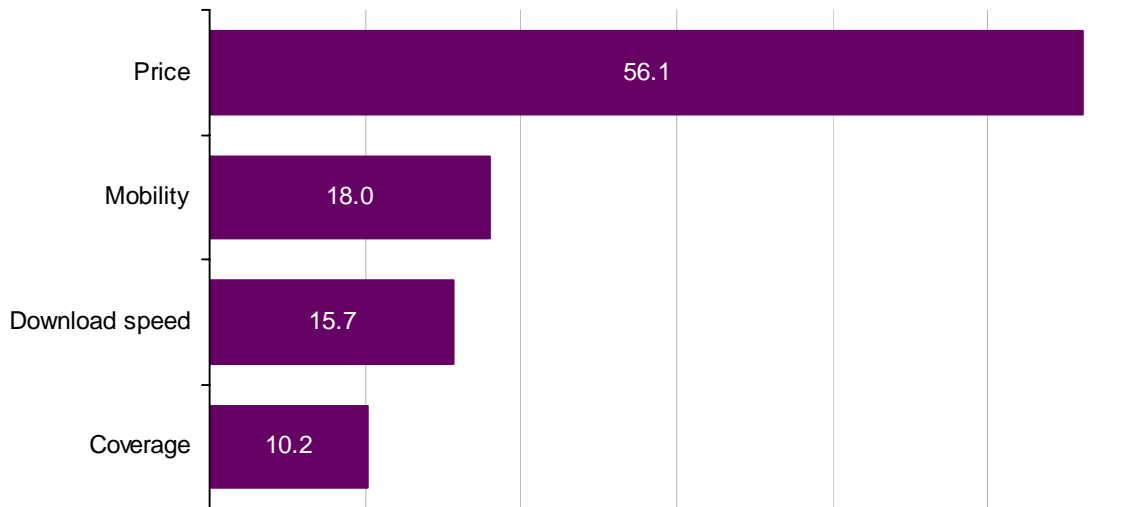
# Mobile broadband

## Comparison of features

### **After price, mobility and download speed had the greatest impact on consumers' choice of hypothetical mobile broadband packages**

- 6.1 As with other services, price was clearly the most important factor in the choice of mobile broadband services from a private perspective, as ascertained by a conjoint exercise. Mobility and download speed were of similar relative importance, and coverage deemed least important for individual choice. There was no substantial variation in the relative importance of features by demographic sub-groups.
- 6.2 However, although price is undoubtedly an important factor, the number and range of price points tested might well have influenced its importance. It is a characteristic of conjoint research that features with more attribute levels tend to attract greater importance. Similarly, the importance of download speed might have been higher had the lowest level been 'no availability' rather than 0.5mbps.

**Figure 6.1: Importance of factors in uptake of mobile broadband (Value to individuals)\***



Source: Holden Pearmain Research

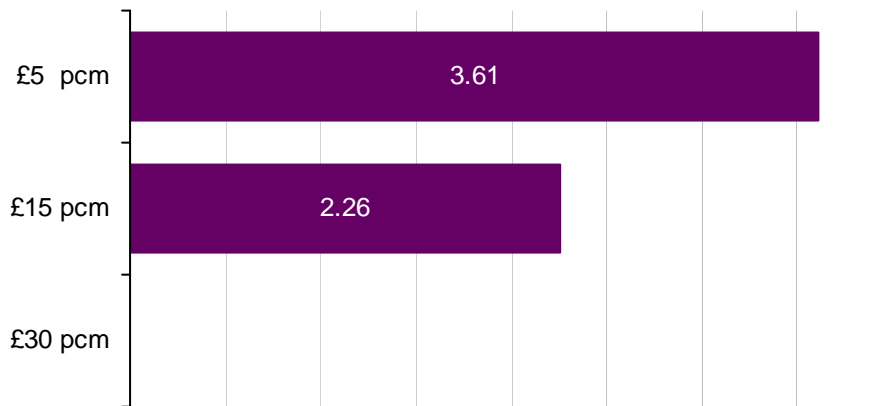
Mobile broadband internet Conjoint: Attribute Importance. Please consider each scenario and choose the option you think your household would choose.

Base: UK adults representing 68% of the population, interested in mobile broadband n =436

\*The figures shown in the chart above are utility values derived from the conjoint research. Utility values show the **relative** importance or preferences of service attributes, and are not absolute values, nor do they represent percentages of the sample. The figures are only comparable to other figures in the same chart and not to other charts in this document.

6.3 When we look at price in more detail, the impact of raising the monthly subscription of mobile broadband in the conjoint exercise from £5 to £15 was less than raising it from £15 to £30. This suggests that a subscription cost of £15 a month would be sustainable, but beyond that interest tailed off significantly.

**Figure 6.2: Importance of price in uptake of mobile broadband (value to individuals)\***



Source: Holden Pearmain Research

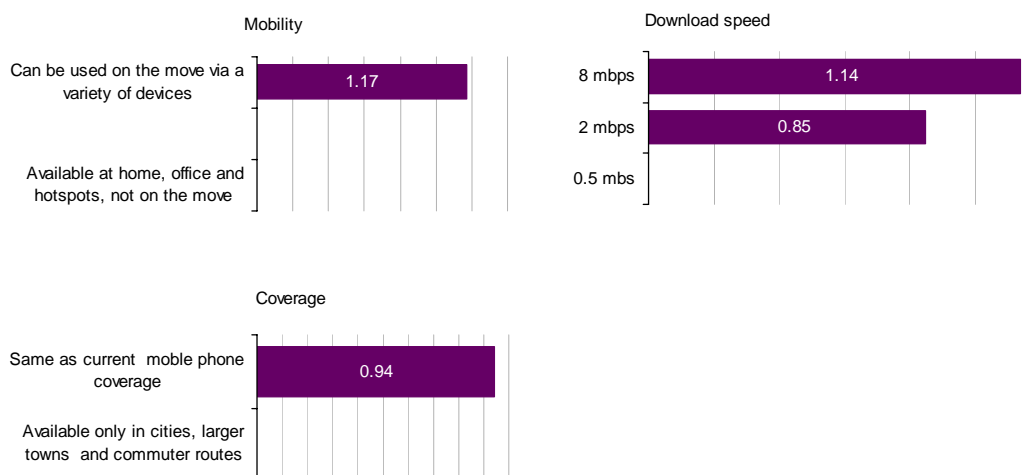
Mobile broadband internet conjoint exercise: relative utility values. Please consider each scenario and choose the option you think your household would choose.

Base: UK adults representing 68% of population, interested in mobile BB, n=436

\*The figures shown in the chart above are utility values derived from the conjoint research. Utility values show the **relative** importance or preferences of service attributes, and are not absolute values, nor do they represent percentages of the sample. The figures are only comparable to other figures in the same chart and not to other charts in this document.

6.4 With regard to the other service features, a download speed of 2mbps appeared to be relatively important in the choice of package, but raising this to 8mbps did not increase interest substantially.

**Figure 6.3: Importance of other features in uptake of mobile broadband (value to individuals)\***



Source: Holden Pearmain Research

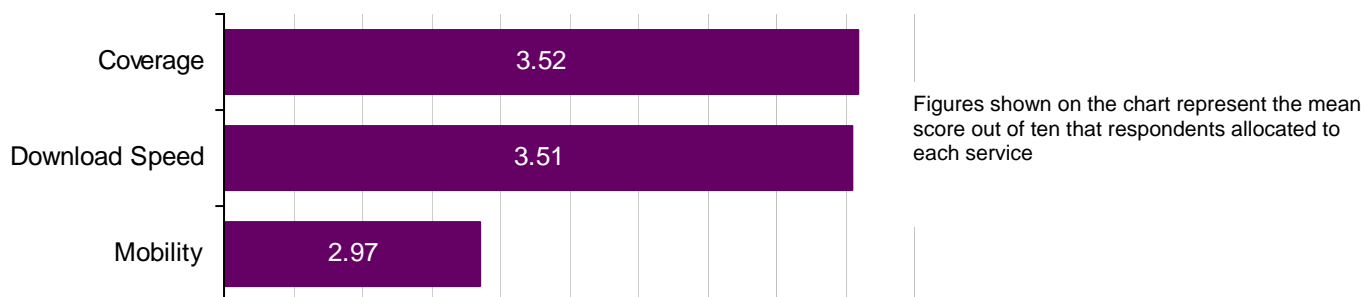
Mobile broadband internet conjoint approach: relative utility values: "Please consider each scenario and choose the option you think your household would choose."

Base: UK adults representing 68% of population, interested in mobile broadband, n=436

\*The figures shown in the chart above are utility values derived from the conjoint research. Utility values show the **relative** importance or preferences of service attributes, and are not absolute values, nor do they represent percentages of the sample. The figures are only comparable to other figures in the same chart and not to other charts in this document.

6.5 A chip allocation exercise was used to assess the importance of mobile broadband features from a value to society perspective. There was no great differentiation made between coverage, download speed and mobility, although the latter was the slightly less important feature. These findings were broadly confirmed by the chip allocation exercise conducted in the qualitative research, which showed breadth of population coverage to be of most importance, followed by download speed.

**Figure 6.4: Importance of features in uptake of mobile broadband (value to society)**



Source: Holden Pearmain Research

PG4: Mobile broadband chip allocation - mean scores. "I'd like you to share ten points between these to show me how important you think each one is to the country as a whole."

Base: Total sample representing 89% of population, n = 1500

6.6 Respondents were asked when they thought people would use mobile broadband services. Unsurprisingly, travelling was seen as the main opportunity for using mobile broadband. In the qualitative research, many group participants thought that the service would be useful for businesses.

**Table 3 Perceived occasions when mobile broadband might be used**

Commuting or travelling	56%
On long journeys	53%
On public transport	41%
At home	30%
Waiting for public transport	25%
Travel updates	22%
Major news events	22%
Cafes	21%
Other people's houses	20%
Major sporting events	20%

Q.B2 "Thinking now about mobile broadband internet – that is internet that you can access from all sorts of mobile devices including laptops, blackberries and mobile phones, when do you imagine people would use this kind of service?"

Base: Total sample representing 89% of population, n = 1500

## Value to the individual vs. value to society

### Coverage is an important feature of a mobile broadband service that has value to society

- 6.7 Coverage was relatively unimportant in the private conjoint research (figure 6.1) However the chip allocation (figure 6.4) and the deliberative research both show that coverage of mobile broadband has more importance for the value to society of the service.
- 6.8 Respondents were asked to say which of a number of statements about digital services were of the most importance for society as a whole (table 2). Nearly half (48%) said that it was important that high-speed mobile broadband services should be available throughout the UK, including in the most rural areas. In fact respondents rated this as a more important issue than having such access in urban areas, possibly because the assumption is that urban areas are the most likely to receive these services anyway.
- 6.9 In the societal context (deliberative research), breadth of coverage was seen as the most important feature, because unless a citizen can use the service, it is worthless as a 'mobile' service. Some also felt that mobility was next most important (ahead of speed) for the same reason because if you cannot use it –whilst on the move – then there is no point in having the service.

“That’s the initial thing you have to have so you have the coverage then the download speed matters, and then the other, mobility matters. But imagine if you’ve got no coverage to begin with then the two others are irrelevant” London, 18-24 year old

6.10 However, for some others, download speed was more important than mobility because if this was a service to be used in any location, it needed to be fast enough to be acceptable. Although existing download speeds were generally thought to be adequate, people are now used to these speeds, and some felt that this was the benchmark by which a mobile broadband service would be judged.

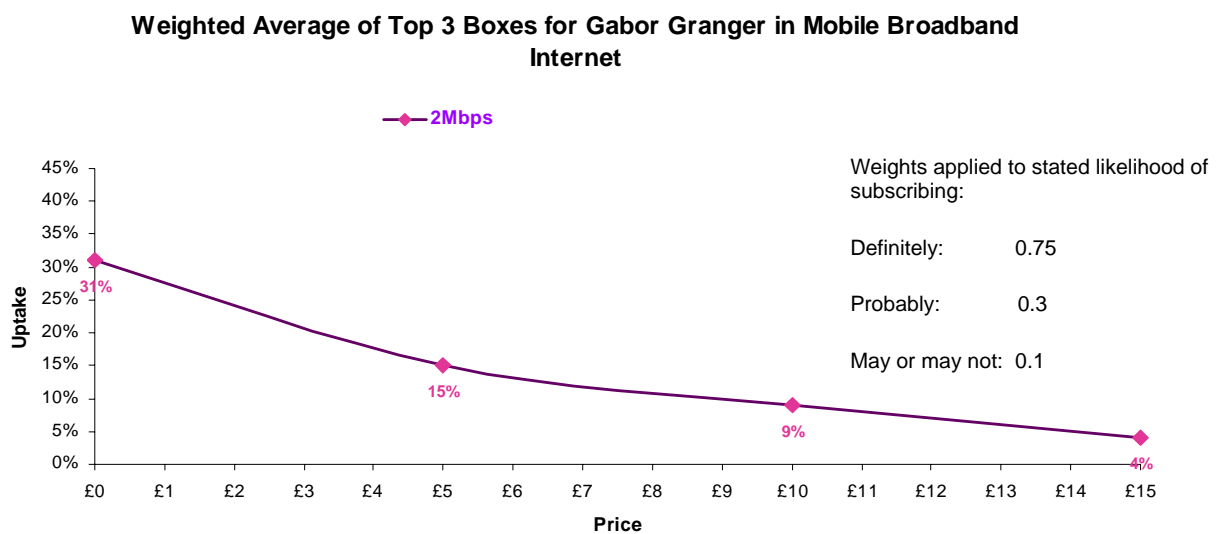
### Willingness to pay

6.11 A Gabor Granger test was administered to assess interest in subscribing to a mobile broadband 2Mbps service.

6.12 Respondents were asked how likely they would be to subscribe to this package at four price points (Free, £5, £10, £15 per month). As elsewhere in this report the findings from this exercise have been down-weighted to counteract the research effect whereby respondents generally overstate their likelihood to purchase/subscribe in an interview context. The magnitude of this weighting is not precise and is derived from the general research experience of the agency Holden Pearmain. Therefore the figures derived from this exercise should be regarded as estimates only.

6.13 An estimated 15% of GB adults would subscribe to a mobile broadband service, with a speed of 2 Mbps, at £5 a month. The results suggest that a monthly subscription of around £7 - £7.50 would maximise revenue.

**Figure 6.5: Likelihood of subscribing to mobile broadband packages at various prices**



Q. M11-3 "How likely would you be to subscribe to this service at the monthly price of..."

Base: GB adults, n=976

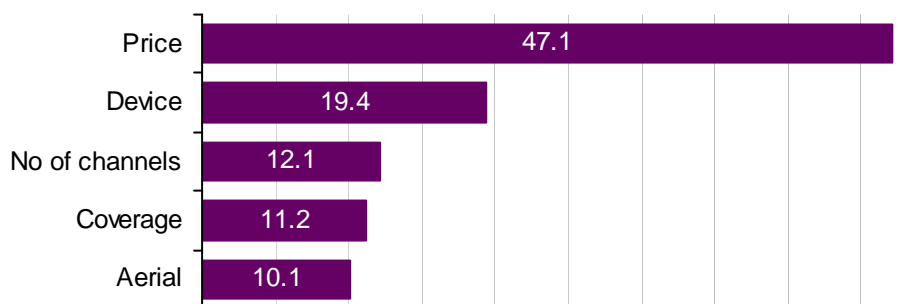
## Section 7

# Mobile TV

**After price, being able to use an existing device, such as a mobile phone handset, to receive mobile TV, is most important to consumers**

7.1 As with other services, price was clearly the most important factor in the choice of Mobile TV services from a private perspective, as ascertained by a conjoint exercise. The next most important feature was whether mobile TV could be received on an existing handheld device. The prevalence of mobile phones that can already play video may have influenced the relative importance of this feature. The number of channels, coverage and the need for an external aerial were of similar importance, and deemed least important for individual choice. There was no substantial variation in the relative importance of features by demographic sub-groups.

**Figure 7.1: Importance of factors in uptake of mobile TV (value to individuals)\***



Source: Holden Pearmain Research

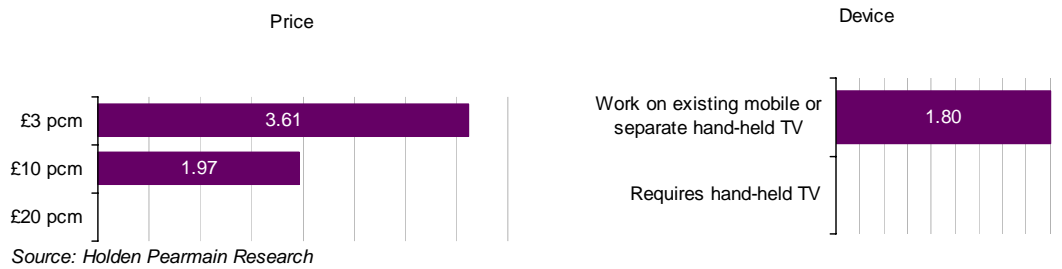
Mobile TV conjoint exercise: attribute Importance. "Please consider each scenario and choose the option you think your household would choose."

Base: UK adults representing 66% of population, interested in mobile TV, n=434

\*The figures shown in the chart above are utility values derived from the conjoint research. Utility values show the **relative** importance or preferences of service attributes, and are not absolute values, nor do they represent percentages of the sample. The figures are only comparable to other figures in the same chart and not to other charts in this document.

7.2 The effect of lowering price and enabling mobile TV to be received on an existing device can be clearly seen in Figure 7.2. Within the set parameters the conjoint research did not show a particular price threshold above which interest significantly dropped off.

**Figure 7.2: Importance of price and device in uptake of mobile TV (value to individuals)\***



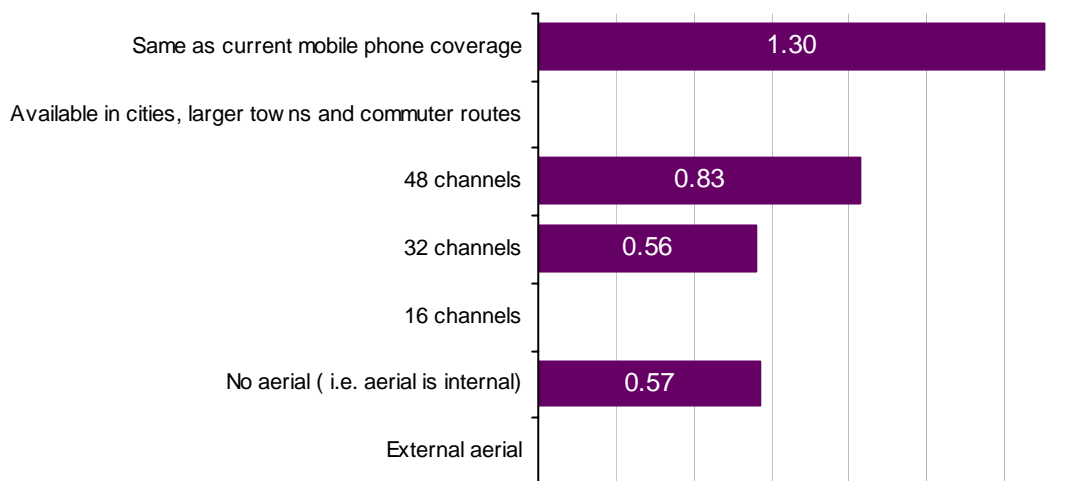
Mobile TV Conjoint exercise: relative utility values. “Please consider each scenario and choose the option you think your household would choose.”

Base: UK adults representing 66% of population, interested in Mobile TV n=434

\*The figures shown in the chart above are utility values derived from the conjoint research. Utility values show the relative importance or preferences of service attributes, and are not absolute values, nor do they represent percentages of the sample. The figures are only comparable to other figures in the same chart and not to other charts in this document.

7.3 The lesser impact of the other features presented to respondents is shown in Figure 7.3. There was a larger increase in appeal when the number of channels was increased from 16 to 32, than from 32 to 48. Therefore, for mobile TV, 32 or even 16 channels seemed to be sufficient.

**Figure 7.3: Importance of coverage, number of channels and aerial type in uptake of Mobile TV (Value to individuals)**



Mobile TV Conjoint: relative utility values – “Please consider each scenario and choose the option you think your household would choose.”

Base: UK adults representing 66% of population, interested in mobile TV, n=434

\*The figures shown in the chart above are utility values derived from the conjoint research. Utility values show the **relative** importance or preferences of service attributes, and are not absolute values, nor do they represent percentages of the sample. The figures are only comparable to other figures in the same chart and not to other charts in this document.

7.4 As for mobile broadband, travel was seen as the most likely occasion when mobile TV might be used.

**Table 4 Perceived occasions when mobile TV might be used**

On long journeys	55%
Commuting or travelling	51%
On public transport	40%
Waiting for public transport	29%
Major sporting events	25%
Major news events	24%
Cafes	21%
At home	20%
Travel updates	20%
Other people’s houses	17%

Q.B3 “Thinking about the times when people might use a mobile TV service can you tell me when or what occasions you think people would find a mobile television service useful?”

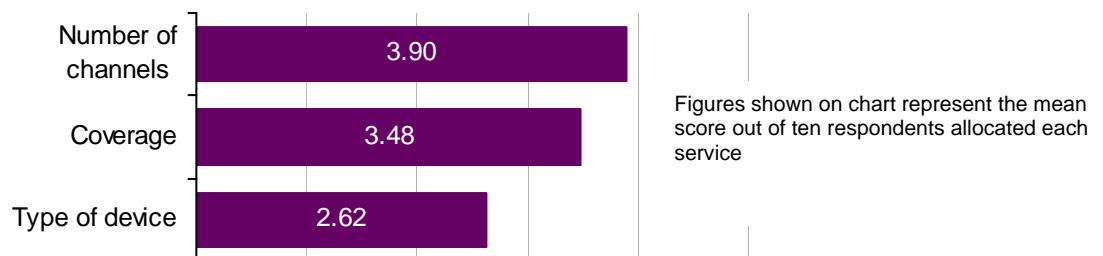
Base: Total sample representing 89% of population, n = 1500

## Comparison of features

### The number of channels and coverage are more important for mobile TV in terms of value to society

7.5 As for other services, a chip allocation exercise was used to assess the importance of mobile TV features from a value to society perspective. The number of channels was seen as most important, followed by coverage, and lastly the device. The lesser importance of the device in this exercise compared to the conjoint exercise described above may be due to the wording used. In the conjoint exercise explicit reference was made to whether services could be received on an existing mobile or handheld TV, whereas the wording for the chip allocation referred to “type of device (stand-alone or integrated)”, which may not have been widely understood.

**Figure 7.4: Importance of features in uptake of mobile TV (Value to society)**



Source: Holden Pearmain Research

PG5: Mobile TV chip allocation - mean scores. “I’d like you to share ten points between these to show me how important you think each one is to the country as a whole”

Base: Total sample representing 89% of population, n = 1500

7.6 These findings were broadly confirmed by the chip allocation exercise conducted in the qualitative research, which showed breadth of population coverage to be of most importance, as it was for other digital services. Type of device and number of channels were of much lower, but equal, importance in this exercise.

7.7 It is interesting to note that the type of device is also of relatively low importance in terms of value to society in the qualitative research, where confusing terms can be explored and explained, which suggests that device type really is of lesser importance publicly, regardless of the potential confusion in the quantitative findings.

## Value to the individual vs. value to society

### Mobile TV was perceived to be a niche service and thus of less value to society

- 7.8 Compared to new services on DTT and mobile broadband, mobile TV has the least perceived value to society. One reason for this, given in the qualitative research is that it was commonly perceived as a niche, perhaps luxury service, and therefore would only be beneficial to a minority of consumers. In addition to this, breadth of coverage was seen as the most important feature of mobile TV, from a value to society perspective.

“It has to be breadth of coverage as the most important attribute for reasons of equality” Bristol, 55+ year old

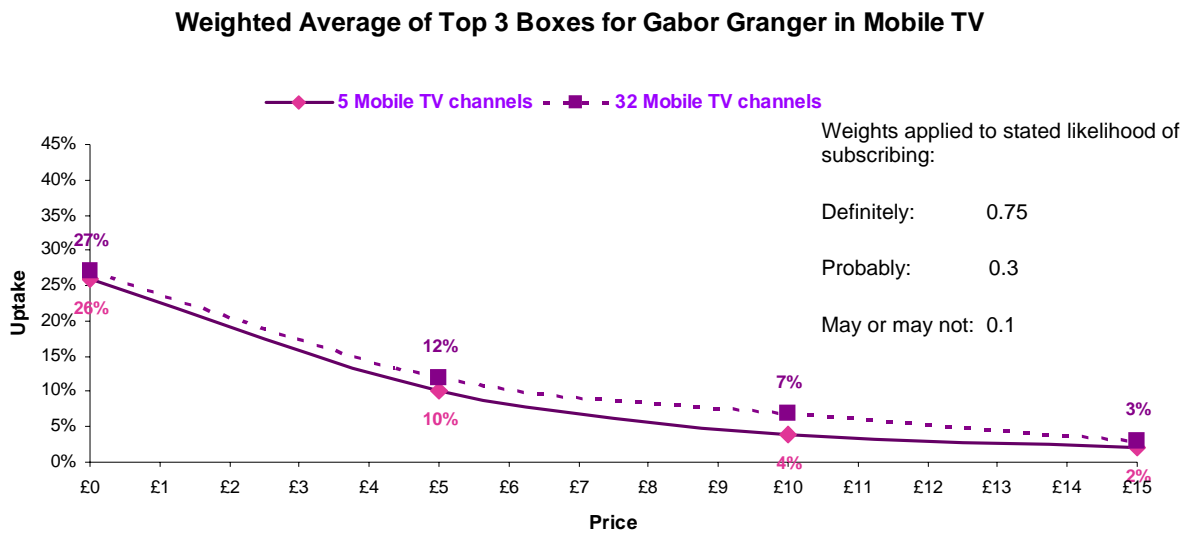
- 7.9 It was also suggested in the qualitative research that if mobile TV could not be received everywhere, then the *raison d'être* of the service is potentially undermined.
- 7.10 Further evidence of the relatively low importance of mobile TV in terms of value to society came from the quantitative research, when respondents were asked to say which of a number of issues regarding digital services they thought was most important for the country as a whole (shown at figure 4.7). Mobile TV generally was regarded as less important than general TV issues and local and broadband services. The most important issue regarding mobile TV was that it should be affordable to most people (41%).

## Willingness to pay

### A low-cost subscription maximised interest in mobile TV, but did not necessarily maximise revenue

- 7.11 A Gabor Granger test was administered to assess interest in subscribing to two hypothetical mobile TV packages.
- 7.12 Respondents were asked how likely they would be to subscribe to each package at four price points (Free, £5, £10, £15 per month). As elsewhere in this report the findings from this exercise have been down-weighted to counteract the research effect whereby respondents generally overstate their likelihood to purchase/subscribe in an interview context. The magnitude of this weighting is not precise and is derived from the general research experience of the agency Holden Pearmain. Therefore the figures derived from this exercise should be regarded as estimates only.
- 7.13 An estimated 12% of consumers would subscribe to the higher specification option, including a 32-channel full coverage service, at £5 a month. A package with five channels attracted marginally higher proportions of subscribers, indicating that the incremental value of extra channels falls as the number of channels increases (above five) on mobile TV packages.

Figure 7.5: Likelihood of subscribing to mobile TV packages at various price points



Q.MT1-3 "How likely would you be to subscribe to this service at the monthly price of..."

Base: All GB Adults, n = 971

7.14 These demand curves suggest revenue would be maximised at approximately £5-£6 for five channels and £6-£7 for 32 channels.



## Section 8

# Value to Society

## What constitutes value to society?

### Universal coverage and access came out as the guiding principle of value to society

- 8.1 Some issues came through much more strongly in the group deliberation than in the quantitative research – even when asked in a ‘chip allocation’ format. The main example of this is universal coverage, which is viewed consensually as very important. A distinction was also seen in the value attached to each of the three main digital services presented to respondents. In the quantitative research mobile broadband and mobile TV were seen to be of broadly equal value, behind DTT. However, in the qualitative research, mobile TV was clearly the lowest priority, labelled by some as a luxury, niche service. It is possibly because of this view that mobile TV appears to go against the key principle of universal access, and therefore received lower endorsement in the qualitative research.
- 8.2 Therefore, views in the qualitative research about the impact of new services on the community varied depending on how ‘community’ was defined. One benefit of new digital services was seen to be increased communication between people who may be geographically far apart but share common interests; and there was a sense of inevitability about the growth of ‘technological communities’. In a geographically mobile age, technologies such as webcams were seen as an important means of keeping in touch with family and friends.
- 8.3 However, it was also felt that society could become less community-oriented in a traditional sense, as communication ‘through a computer’ displaces face-to-face communication.

“I think this will only encourage us to be almost less social because you’ve got less incentive to go out and see people and I think that’s what’s happened gradually through our generation” London, 18-24 year old

## The value to society of new technologies

### In the quantitative research consumers differentiated little between individual needs and value to society

- 8.4 The quantitative research suggested that respondents did not draw major distinctions between private / consumer value and value to society. Two hypotheses for this are:
- 8.4.1 Respondents viewed private value and value to society as one and the same, so the value to society is merely an aggregate of private needs (hence there is no additional value to society). The quantitative research comprised individual interviews, where there was no social pressure, as there may have been in the consensual context of the group research.

- 8.4.2 Respondents found it too difficult to imagine a 'national view', so instead gave an answer from their own perspective.

### **In the deliberative research, participants identified features of some services that could be valuable to society**

- 8.5 The deliberative group research was useful in presenting the issues to respondents in the context of value to society, and allowing groups to debate the issues before producing their own findings.
- 8.6 In non-trade-off exercises some additional value to society was attached to additional DTT channels, mobile broadband, and local TV. In the deliberative research (where consumers were encouraged to make a more considered judgement) value to society also appears to have been attached to additional DTT channels (dependent on content), mobile broadband, and local TV (with caveats about the definition of local). The importance of mobile broadband was also higher when viewed in the deliberative societal context.

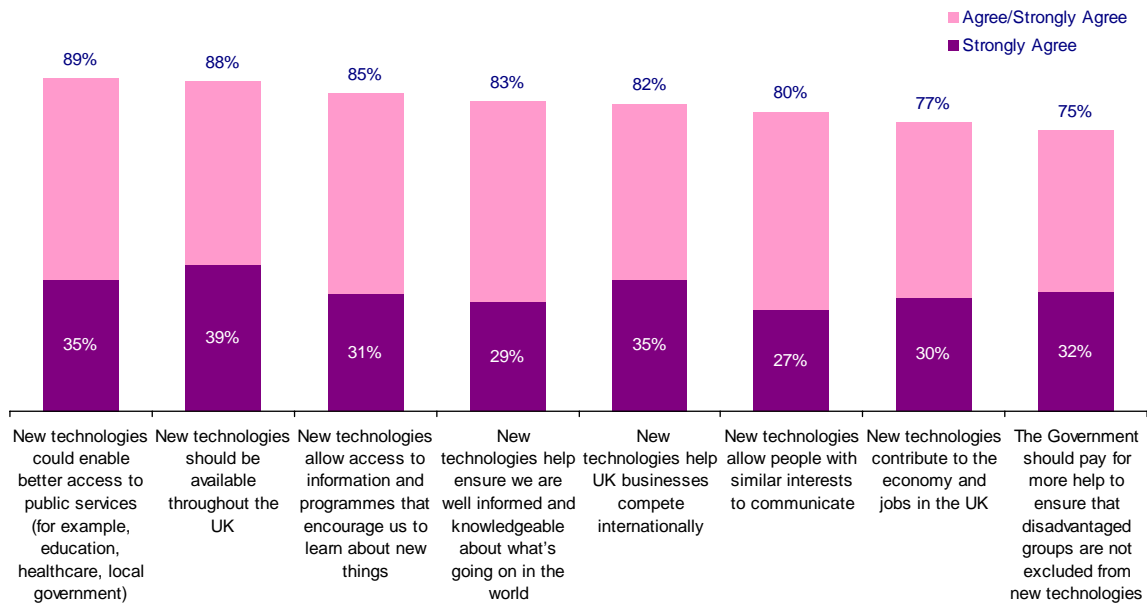
### **Across all methodologies, there was no evidence of additional value to society for HDTV or mobile TV**

- 8.7 Across all research methodologies employed, there was no evidence of additional value to society for HDTV channels or mobile TV services – the former was poorly understood and the latter was perceived as a 'luxury', and probably niche, service.
- 8.8 In the quantitative research, several methods of questioning were 'zero-sum games'; conjoint techniques, ranking and chip allocation. In these types of questions, certain elements – notably local TV – were not seen as being important, despite their high scoring in open response questioning. This difference is manifest because in zero-sum games respondents have to choose between features rather than being able to choose all the features they would like, which is more likely to mirror the decisions they would have to make in real life.
- 8.9 It should also be noted that although we have been able to identify which of the services become more important in the societal context, this does not necessarily mean that citizens value societal considerations more *per se*. People may value individual benefits over and above social ones.

### **Knowledge sharing was seen as the most important potential impact of new technologies**

- 8.10 With regard to the potential impact of new technologies, respondents were most likely to agree with statements about the common theme of knowledge sharing (these themes being arrived at by factor analysis, a statistical technique that identifies related groups of statements that may be measuring the same underlying theme). In this sense the quantitative findings again echo the principle of universal access as commonly expressed in the qualitative groups. The quantitative research also identified UK national competitiveness as an important factor.

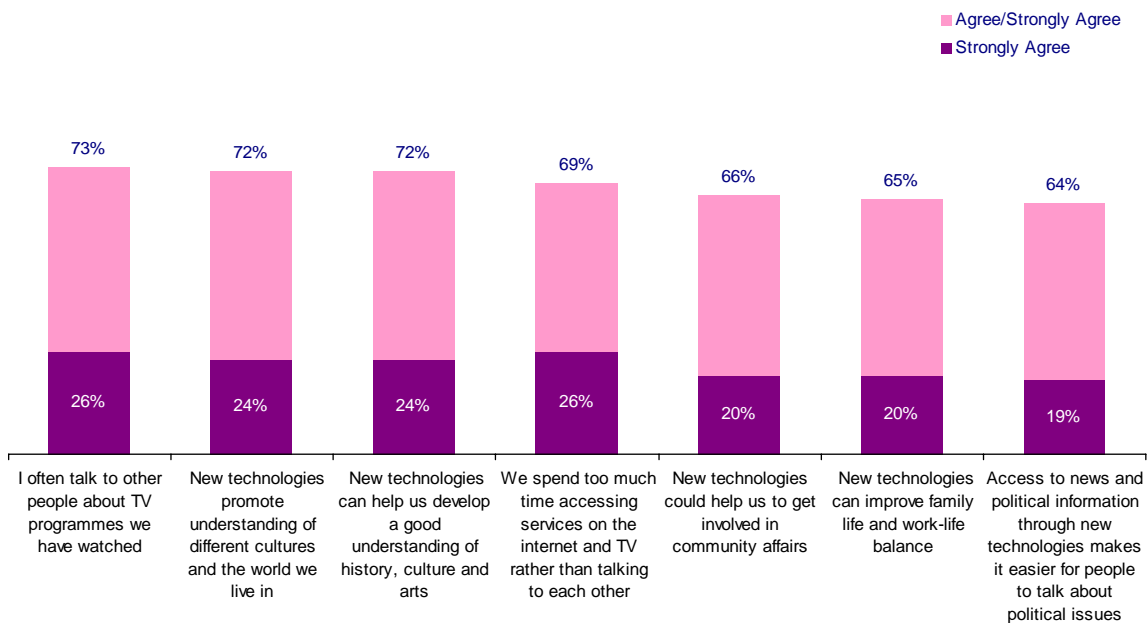
**Figure 8.1: Agreement with statements regarding the impact of new technologies: most important**



PG8: Agreement with statements

Base: Total sample representing 89% of population, n = 1500

**Figure 8.2: Agreement with statements regarding the impact of new technologies: less important**



PG8: Agreement with statements

Base: Total sample representing 89% of population, n = 1500

## How do consumers feel spectrum should be allocated to maximise the value to society?

- 8.11 The DDR spectrum could potentially be awarded for use in a number of different ways. Participants in the deliberative research were asked whether they thought awarding the spectrum through the 'free market' would deliver the best, most valuable to society, outcome for the UK or whether 'Government' or some other authority should have some influence over how the spectrum is used<sup>13</sup>.
- 8.12 There was universal agreement in the groups that some sort of intervention was necessary to ensure that services that are valuable to society are made available to the maximum number of people. Respondents felt that the private sector alone, being motivated by profit, would not necessarily deliver services that are valuable to society.

## Financing services that have value to society

### **It was commonly thought that the cost of implementing new services should be split between the Government, companies running the services and consumers**

- 8.13 In the deliberative research it was generally thought that the cost of implementing new services should be shared between the Government, the companies who will benefit from DSO and consumers.

"As tax-payers we should pay a share of the cost because we'll get new services we can use and enjoy but only a minimal share because the Government should pay a share because they're forcing us to do this – and of course the service providers should pay because ultimately they're the ones who are going to be making a tidy profit out of this" London, 35-44 year old

- 8.14 However, many felt that a tax increase was not appropriate to part-finance the provision of services for value to society. Furthermore, if there were additional costs involved for the consumer, there needed to be an element of choice in the payment for additional or even core services.

"There's going to be those who either can't or don't want to have more channels and therefore they will not have TV, so they'd have to decide to actually pay money to do so, which some people might just not want to do ... it's not giving them a choice, effectively you're saying they have to pay up or else we're going to switch it off" Bristol, 35-44 year old

- 8.15 However, it is fair to say that there was a widespread set of opinions on this matter, not least because there was some confusion about who would be paying for what, and who would benefit from these payments.

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<sup>13</sup> Participants were not briefed in detail on all the complex issues relating to this.

- 8.16 It was also a common opinion that as the airwaves are a national resource, some control should remain with the Government. If this does not happen, then what was once available as a 'public' resource may be used for services that do not benefit society. The groups held the strong opinion that an independent body is required to ensure that a good quality service is provided to the maximum number of people.

"They've got commercial interest invested in their investment if you like, they're not going to be socially responsible like I expect Ofcom to be and look after the interests of the greater public at large...It's much better that Government keep control, presumably through a licensing system and get what funding they can out of private business to try and offset the cost so it's cheaper to the consumer"  
Bristol, 55+ year old

- 8.17 Emphasis was placed on the quality of services, rather than the quantity of channels. It was unanimously thought that ensuring universal coverage should come before additional channels. Many of the current Freeview channels were thought to be of poor quality, and so adding more would be a waste of resources, unless some kind of regulation was in place to ensure the quality of new content. However, there was a balance to be struck, and it was felt that a regulatory body should not become so interventionist that it bordered on, for example, content control and censorship.
- 8.18 In addition to the concerns about the quality of programming, there were also concerns that the proliferation of channels was potentially at odds with providing value to society.

"It's very unsociable to watch television really, unless you're watching something with friends. I don't think the television is a sociable thing"  
London, 25-34 year old



## Section 9

# Appendices

Appendix 1: Main quantitative questionnaire

Appendix 2: Main quantitative questionnaire - statements

Appendix 3: Main quantitative questionnaire - showcards

Appendix 4: Main quantitative questionnaire – attribute descriptions

Appendix 5: Deliberative topic guide

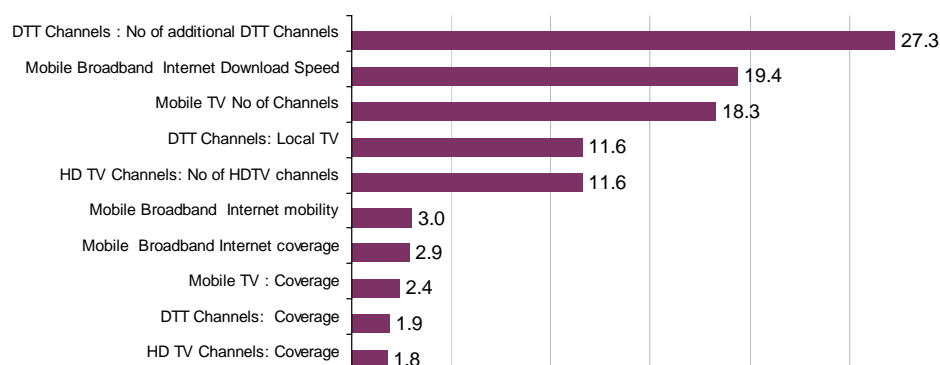
Appendix 6: Omnibus quantitative questionnaire

Appendix 7: Omnibus quantitative questionnaire - showcards

Appendix 8: Social conjoint exercise

- 9.1 The main quantitative survey included a ‘social conjoint’ exercise where respondents were asked to imagine they were taking part in a national referendum. They were presented with ten choices to make, each from two options, each comprising a different set of features of DTT, mobile broadband and mobile TV.
- 9.2 The results from this exercise were not consistent with the chip allocation exercise or the deliberative research, in that coverage for all service types was rated as relatively unimportant, as shown in figure A1.
- 9.3 As these results stand out as inconsistent, they have been excluded from the research report. The exercise was fairly complex and as such it may be that respondents were unable to fully engage with the exercise, perhaps concentrating only on the most attractive elements of service packages when making their decisions. The independent research reviewer recommended that these results be set aside.

**Figure A1: Importance of factors in allocation of available spectrum (value to society)\***



Source: Holden Pearmain Research

PG1 Social value conjoint exercise: attribute importance. « Once you have considered the options I will ask you which you think would be better for the COUNTRY AS A WHOLE».

Base; Total sample representing 89% of population, n = 1500

\*The figures shown in the chart above are utility values derived from the conjoint research. Utility values show the **relative** importance or preferences of service attributes, and are not absolute values, nor do they represent percentages of the sample.

## Appendix 9: Additional Gabor Granger data

- 9.4 The main quantitative survey included some Gabor Granger style questions measuring willingness to pay for some of the service packages tested in the conjoint exercise.
- 9.5 The price points were set to match price points in the conjoint exercise, so the data has been primarily used as a 'quality check' on findings from the conjoint research. The differing price points mean that these findings on willingness to pay are not directly comparable by service, and for this reason the similar questions asked in the omnibus research are shown in the main body of the report.

Service description	Free of charge	£5	£15	£25
<b>8 extra standard definition channels, some local TV channels, requiring an additional aerial and a new set top box at a cost of £40</b>	45%	23%	10%	4%
<b>8 extra standard definition channels, 3 HDTV channels, no additional aerial required, using existing Freeview box</b>	48%	26%	11%	5%
<b>24 extra standard definition channels, 3</b>				

HDTV channels, no additional aerial required, requires a new set top box, supplied free of charge	52%	34%	14%	7%
		<b>£5</b>	<b>£15</b>	<b>£30</b>
Mobile broadband, 0.5Mbps, limited coverage, cannot be used on the move	-	32%	12%	6%
Mobile broadband, 2Mbps, coverage as per mobile phone, can be used on the move	-	31%	14%	5%
Mobile broadband, 8Mbps, coverage as per mobile phone, can be used on the move	-	37%	19%	8%
	-	<b>£3</b>	<b>£10</b>	<b>£20</b>
Mobile TV, 16 channels, external aerial, requires separate hand-held TV device, limited coverage	-	25%	11%	5%
Mobile TV, 32 channels, internal aerial, can be used with integrated mobile TV and phone device, limited coverage	-	32%	25%	5%
Mobile TV, 48 channels, internal aerial, can be used with integrated mobile TV and phone device, same coverage as mobile phones	-	38%	20%	9%