Royal National Institute of Blind People (RNIB) response to the Ofcom call for inputs on speaking TV programme guides

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As the largest organisation of blind and partially sighted people in the UK, RNIB welcomes the opportunity to respond to this consultation.

Importance of TV to blind and partially sighted users

Since our Needs Survey in 1991 showed that a large majority of blind and partially sighted people watch television[1], RNIB has taken an active role in highlighting TV access issues. We have worked to try to ensure access to programmes, services and equipment, both by direct work with broadcasters and manufacturers and by influencing legislation and regulation.

In this digital age, being able to watch TV remains important to blind and partially sighted people. In 2006 Research by the University of Birmingham[2] found that around 87 per cent of blind and partially sighted people regularly watch TV and videos or DVDs.

In RNIB's "Update on the inclusive society 2013" report respondents were asked to select from a list of statements about what kind of impact fully accessible television and radio would have on their lives:
• 56% said that it would make them more independent;
• 56% said it would make them happier about life;
• 56% said it would make them feel less socially isolated;
• 51% said it would make them feel better about their sight loss

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[1] RNIB Needs Survey (1991) Blind and partially sighted adults in Britain: the RNIB Survey Volume 1, by Ian Bruce, Aubrey McKennell and Errol Walker
[2] Douglas, G., Corcoran, C., Pavey, S. (August 2006) Network 1000: Opinons and circumstances of visually impaired people in Britain: report based on over 1000 interviews.

In addition 68% of respondents selected at least one of these impact statements and 38% selected all four of them.

A note on the statistics used in this response

Many of the statistics used in this response are taken from Ofcom's disabled consumers report from 2013. The report breaks down information about disabilities into visual impairment, hearing impairment, mobility impairment and multiple impairments. However statements made in the report do not take into account the fact that the visual impairment category covers just users with a visual impairment and not users who also have a hearing or mobility impairment or both. This means that statements made in the report such as "…those with visual impairments have a younger profile." could be misleading since an estimated 53% of people surveyed with a visual impairment also had at least one other impairment and an estimated 71% are over 55 (Appendix A).

Since people in the older demographic group are of particular relevance to many of the answers given and are more likely to have multiple impairments this response will, in places, highlight the statistics to better reflect the full range of blind and partially sighted users. Where this is done the statistic will be declared as an estimate with an explanation in Appendix A.

Consultation Response

Q1. Do respondents agree with Ofcom's initial assessment that apps for mobile devices have the potential to be useful for those people with visual impairments who feel confident using touch-screen technology and can afford a suitable mobile device? If not, why not?

For blind and partially sighted people who are confident using touch-screen technology, and can afford a suitable mobile device, a well written and accessible app can make an inaccessible television device accessible. It will not however make the device accessible for the large number of blind and partially sighted people who cannot afford a smartphone or who find a touch-screen interface too difficult to use.

Even accessible apps are generally built around a visual layout which makes the usability extremely poor when navigating them without sight. This requires blind and partially sighted people to learn the positions of

specific buttons or menus within the app, to know when a menu extends horizontally or vertically across the screen and frequently to learn where a button is unlabeled, or even mislabelled. As well as learning the positions of elements in an app, blind and partially sighted people need to learn an extended set of touchscreen gestures just to use the accessibility features and tasks take longer when using the accessibility interface. Screen layout often imparts information as well (the 'grid view' of an EPG is a good example of this where a programme's position in the grid tells you on which channel and at what time the programme will be shown) and app developers can find it hard to communicate this in an accessible way.

RNIB would not consider it reasonable that blind and partially sighted users would have to use a smartphone to control their television as this is not an equivalent service to sighted users. If the user experience was indistinguishable from the TV supporting integrated text-to-speech (TTS) then RNIB would not have concerns but as already shown, this is far from the case when using a smart phone as a command and control device.

Only an estimated 24.5% (Appendix A) of blind and partially sighted people own a smartphone (lower than the 27% average for disabled people) and only 9% of disabled people over 65 own one[3].

Q2. Do respondents agree with Ofcom's initial assessment that apps for mobile devices are less likely to meet the needs of the majority of visually-impaired people who are 65 or older, both because they are less likely either to own a suitable mobile phone and because touch-screen apps present a number of actual and perceived barriers to use. If not, why not?

Yes, as stated in our answer to Q1 even accessible apps are hard to use for blind and partially sighted people and only 9% of disabled people over 65 have a smartphone.

RNIB do, however, welcome accessible app development as a means of access to those who do use smart devices and where integrated TTS is not possible.

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[3] http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/disabled/Disabled_consumers_report.pdf

Q3. Do respondents consider that it would be reasonable for visually-impaired viewers to pay more than sighted viewers for the ability to use EPGs or substitutes for the same purposes as sighted viewers? If so, why?

RNIB do not consider this reasonable. Blind and partially sighted people should not have to pay extra for an equivalent service to sighted people especially when companies in the market today have demonstrated that it is possible, practical and economically feasible to make television accessible. Panasonic and Samsung have built speech into their televisions making it possible to navigate the EPG without sight. Both have also provided it as a standard feature and made a commitment to ongoing accessibility. Virgin Media have created an app which is suitable for a particular demographic and a cheap Android or iOS device could be provided by service providers for use by blind and partially sighted users. The Sky Talker connects to a Sky box to provide speech and although this does not currently read out the EPG it could be designed alongside a Sky box in future to do so. A Sky Talker currently costs blind users an additional £60.

Disabled people are also far less likely to be in work than non-disabled people. Only 17% of disabled people are employed compared to 53% of non-disabled people, and 55% of disabled people are retired (compared to 21% of non-disabled people)[4]. Indeed, blind and partially sighted people are more likely to be unemployed even than most other disabled people[5]. RNIB therefore believes it would not be reasonable for visually-impaired viewers to pay more than sighted viewers for accessible EPG equipment.

We also consider that it would be unlawful (under the Equality Act 2010) for TV service providers to expect disabled people to pay more than their non-disabled customers to access/use their EPG.

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[4] http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/disabled/Disabled_consumers_report.pdf last checked 06/08/2014
[5] The Labour Force survey (Hewett with Keil, 2014) found 45.9% of long term disabled with a "seeing difficulty" were employed compared to 50.5% of other long term disabled

Q4. Do respondents agree with Ofcom's initial assessment that the speaking EPGs integrated into TVs and set top boxes may be easier for people with visual impairments to use than touch-screen apps? If not, why not?

Yes, as stated in our answer to Q1 even accessible apps can be hard to use for blind and partially sighted people. In contrast an independent review for a technology magazine[6] stated of the Panasonic Voice-guidance feature:

"During our test we found it incredibly straightforward: after you've engaged Voice Guidance in the Sound menus, and chosen the volume, user level (beginner or expert - the former using very comprehensive explanations) and speed, the TV suddenly becomes exceptionally user-friendly."

The TTS system on Panasonic TVs, called Voice Guidance, makes the EPG and common tasks accessible but it actually goes further than that and makes the TV easier to use for everyone.

Integrated TTS also has the advantage that for a consumer there is no need to connect the phone or the TV to a home network or to pair them via Bluetooth; both of these processes can be complicated for those with sight loss.

TTS is gaining ground as an enabling technology for people with sight loss and is being built into a diverse range of devices. Most smart phones and tablets now support TTS and this enables app developers to make use of the built-in speech interfaces, a large number of cash machines across the UK have speech built in giving blind and partially sighted users greater autonomy and Kindle eReaders have had speech built in since 2009 and have been accessible since 2010, making reading possible not just for blind users but to anyone who is print disabled[7].

With the use of speech interactions in the form of personal assistant interfaces, such as Siri and Cortana, it is clear that TTS and speech recognition also have widespread appeal outside the accessibility sphere and can make interfaces more user friendly and intuitive.

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[6] http://www.techradar.com/news/television/will-apples-itv-feature-voice-recognition-and-a-speaking-program-guide-1087122/page:1#articleContent
[7] The term 'print disabled' covers anyone with a condition that affects their ability to read such as people with sight conditions, dyslexia or other learning difficulties.

Q5. Do pay TV service providers such as Sky, Virgin, Talk Talk and BT TV see additional obstacles that would prevent them from committing to including text to speech capabilities in the next planned upgrades to the receivers they offer to subscribers? If so, what are these obstacles? Absent regulation, would these obstacles make it impossible on commercial grounds to commit to the necessary investment?

Panasonic and Samsung have both committed to integrated TTS in their televisions at no additional cost to consumers with a visual impairment versus sighted consumers. This demonstrates that integrated TTS is both feasible and economical in a television receiver. In 2012 TVonics announced that they had successfully added integrated TTS as a software update to two of their set-top boxes demonstrating that even when using a powerful speech engine such as Ivona, the additional processing requirements are not burdensome. In 2010 RNIB released a talking set-top box for under a hundred pounds demonstrating that an accessible device could be developed for sale at an affordable price. RNIB do not see any significant obstacles to Pay TV services fulfilling their obligation under the Equality Act 2010 by including TTS capabilities in the next planned upgrades to the receivers they offer to all subscribers.

Q6. If the cost of providing speech-enabled receivers to all those who subscribe to particular pay TV services would entail a substantial delay to the roll-out of such receivers to all subscribers, would it be feasible, quicker and more cost-effective to offer suitable equipment first to viewers with visual impairments?

This may be an adequate solution as long as users with visual impairments and other disabilities are made aware of the availability of an accessible solution. This awareness could only be achieved by every subscriber being clearly offered this suitable accessible equipment, at no extra cost, should they require it and it being provided within a reasonable time where requested. The equipment would need to be offered, with a clear set of benefits being explained to every subscriber, at the point of acceptance of a new box for existing subscribers or at the point of signing up for all new subscribers.

Although organisations such as RNIB will disseminate information about accessible services to our members it is the responsibility of the service owner to raise awareness of any additional equipment available.

Q7. Do respondents consider that it would be reasonable to expect visually-impaired viewers to pay extra for equipment that allows them to use EPGs or substitutes for the same purposes as sighted viewers? If so, why?

RNIB do not consider this reasonable for the reasons set out in our answer to question 3. As noted at question 3, we consider that charging disabled people extra for such equipment would constitute a breach of the Equality Act and is likely to be unlawful.

Q8. Do licensors such as Freesat and Freeview see obstacles to using their leverage to require manufacturers to incorporate speaking EPGs in future versions of products authorised to use their brands, such as Freetime and Freeview Connect?

When the BBC Trust approved the BBC's involvement in Freesat in 2007 they determined that there was no need for a Public Value Assessment, however they did state that the BBC "must do all that is reasonably practicable to ensure that viewers, listeners and other users are able to access the UK public services intended for them" and that "The BBC, through its role in the Joint Venture, must retain sufficient control over the decisions taken by the Joint Venture to ensure that the BBC's public service objectives are not undermined" [8]. In RNIB's view "all that is reasonably practicable" includes a minimum accessibility requirement of spoken access to EPGs.

In the recent review of YouView by the BBC Trust[9] the Trust states that "As a condition of continued BBC participation therefore, we require the venture to implement a full version of TTS, via either a peripheral or integration solution at some point in FY2014/15". This demonstrates how important the Trust views the access of EPGs for all viewers. The decision is based on an assertion that "…peripheral devices are an attractive solution; over time they are likely to be widely-used as

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[8] http://www.bbc.co.uk/bbctrust/news/press_releases/2007/freesat_april.html
[9] http://downloads.bbc.co.uk/bbctrust/assets/files/pdf/our_work/youview/youview_review.pdf

smartphones and tablet devices become commonplace." Whilst this decision was welcomed by RNIB and demonstrates that implementation of TTS is the correct step forward we challenge the assertion that smartphones and tablet devices will become commonplace amongst the older generation; at least until the current generation of smartphone and tablet users become the older generation. This will take decades and will leave one of the most vulnerable demographics without an accessible solution for many years. RNIB therefore believes that meaningful and widespread accessibility can only be achieved by mandating integrated TTS.

Under the Equality Act 2010 public authorities and bodies that exercise public functions must "…remove or minimise disadvantages suffered by persons who share a relevant protected characteristic that are connected to that characteristic;" and "…take steps to meet the needs of persons who share a relevant protected characteristic that are different from the needs of persons who do not share it;"[10]. In RNIB's view requiring blind and partially sighted users to control their television equipment through a smartphone or tablet does not sufficiently meet this duty.

Both Ofcom and the Public Service Broadcasters (PSBs) are subject to section 149 of the Act. As part of their involvement in Freesat and Digital UK PSBs have a legal duty to push for integrated TTS, including making it a prerequisite for licensing of goods and services. This is especially true for products such as Freesat Freetime and Freeview Connect which constitute additional added value. Freesat and Freeview could continue to offer basic licenses without the enhanced features but also without the accessibility requirements. This would give manufacturers the option of producing inaccessible entry level set top boxes or accessible boxes with enhanced features.

Q9. What are the main types of cost that pay TV service providers would face in incorporating speaking EPG features into the next generation of their set top boxes?

Pay TV service providers will need to pay to license the TTS engine used in their box and may need to increase the processing power and memory requirements to ensure a smooth experience. As previously mentioned, RNIB managed to market a talking set-top box for under £100 including the TTS license and TVonics managed to add speech to their box via a

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[10] Section 149 paragraph 3 of the Equality Act 2010

software update without upgrading the box's hardware. This demonstrates that the costs are not restrictive.

It can be hoped that the TV sector will follow the smartphone sector as seeing TTS, not as a moral obligation that supports a minority of users but as a premium feature that enhances the experience for all. With the evolution of television from a dumb screen to a smart platform, this would be a logical step and would signify a maturity in the new market.

Q10. What is the scope for connected platforms to avoid the need for specific TTS provision within consumer equipment by using cloud-based resources (e.g. speech files on a central server delivered to the device as required)?

RNIB considers that if a cloud-based TTS resource can deliver an equivalent experience to integrated TTS then this is acceptable. This would need to be equivalent in terms of price, complexity, reliability, voice quality and latency. There are potential barriers to this equivalency.

Price:
Maintaining an internet connection comes at a cost, whether that is a standalone cost to a broadband provider or an upgrade to a communications bundle, and as stated elsewhere, RNIB does not consider it reasonable to expect blind and partially sighted people to be charged more for an equivalent service (and as noted above we consider that this is likely to be unlawful). EPG providers should pay for a user's broadband connection from a third party (as regulations in the United States appear to require, which could be seen as a benchmark) or in cases where the EPG provider also offers a bundled broadband connection they could offer a free upgrade to a package which includes the internet connection if a cloud based service is the only accessible service offered. Customers must be able to choose the broadband provider they use. If they opt for a more expensive broadband provider than the one nominated by the EPG provider the EPG provider might be expected to subsidise this connection up to the cost of the nominated package to enable a user to access a cloud based service.

Complexity:
A cloud based TTS solution must be equivalent to integrated TTS in terms of both ongoing operation and also initial setup. Connecting a television or set top box to an internet connection is a complex process

for some users and this may be why Analysys Mason found in 2013 that less than half of respondents who identified as having a smart TV had connected it to the internet[11]. For a blind or partially sighted user there is an added question of whether this set-up process is accessible. Some EPG providers provide dedicated hardware and offer an engineer callout to set this up. Setting up the internet connection could be done as part of this process and there are third party technical support services that do home visits that other EPG providers could commission. For many people with sight loss, due to the complexity of the set up using on screen menus, the technical support would need to be in-home physical support rather than advice via a telephone service. RNIB's view is that the use of alternative methods to secure EPG accessibility should not make using the television more burdensome to a disabled customer, than it is for non disabled customers.

Reliability:
If an EPG provider is providing the internet connection it would be the responsibility of the EPG provider to ensure that the internet connection had sufficient bandwidth and maintained sufficient uptime to provide a reliable efficient TTS service. If the decision to use a cloud based service is made in order to provide a better quality voice, than could be produced by integrated software due to processing or hardware constraints, then the television device could revert to a different onboard voice in the event of internet connection problems.

Voice quality:
Insufficient bandwidth or too much lossy data compression can damage the intelligibility of speech. EPG providers would surely need to be able to satisfy Ofcom, and ultimately consumers, that the speech audio quality would not be allowed to suffer due to low bandwidth or too much compression.

Latency:
A concern in using cloud based TTS services is that the time required to send the text to the server, create (or lookup) the speech on the server and receive the audio file back would introduce an unacceptable delay which reduces the responsiveness of the interface. For static areas of the interface such as menu systems or for preemptable vocabulary such as days of the week and times of day the audio file, once created, could be stored on the local machine (the TV or set top box). For dynamic information such as programme titles and plot synopses it may be

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[11] http://www.analysysmason.com/About-Us/News/Insight/smart-TV-May2013/

possible to keep a small cache of audio files (speech for the 'now and next' function for the channel being watched and one or two channels either side) but it would be very hard to overcome any serious latency in the internet connection in this way.

Appendix A

This appendix features a reworking of the figures from Ofcom's Disabled Consumers Report from 2013 (http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/disabled/Disabled_consumers_report.pdf). Due to rounding introduced in publishing the report final figures arising from this reworking should be treated as a good estimation rather than an accurate calculation.

Total number of visually impaired people in the survey

	Just Vision Impairment (VI)	Vision Impairment and Hearing Impairment (VI & HI)	Vision Impairment and Mobility Impairment (VI & MI)	All 3	Total
% of multiple disability group	N/A	20%	25%	21%	636
Number of people in subgroup	367	127.2	159	133.56	786.76
% of Visually impaired people	46.6%	16.2%	20.2%	17.0%	100.0%

The number of people with Visual Impairment and at least 1 other impairment
= (VI & HI) + (VI & MI) + (all 3) = 127.2 + 159 + 133.56 = 419.76

The percentage of people with Visual Impairment and at least 1 other impairment
= 419.76 / total number of people with Visual Impairment * 100 = 419.76 / 786.76 = 53.35%

786.76 people in the survey had a visual impairment and 53.4% of these also had at least 1 other impairment

Number of Visually Impaired people with a smartphone

	VI	(VI & HI)	(VI & MI)	All 3	Total
% of multiple disability group	N/A	20%	25%	21%	636
Number of people in subgroup	367	127.2	159	133.56	786.76
% of subgroup with a smartphone	33%	22%	19%	10%	
number of people in subgroup with a smartphone	121.11	27.984	30.21	13.356	192.66
% of total VI with a smartphone	15.4%	3.6%	3.8%	1.7%	24.5%

First the number of people in each impairment subgroup is worked out. Then the number of people in each subgroup with a smartphone is calculated and those are summed to give the total number of visually impaired people with a smart phone. This is combined with the total number of visually impaired people in the survey to give a new figure of 24.5% of visually impaired people who have a smart phone.

Age distribution for Visually Impaired people

	15-24	25-34	35-44	45-54	55-64	65-74	75+	
VI	13%	9%	9%	14%	18%	16%	21%	
HI & VI	3%	2%	2%	11%	17%	24%	42%	
VI & MI	3%	1%	9%	9%	18%	21%	40%	
All 3	0%	1%	1%	4%	16%	20%	57%	
								Total
VI	47.71	33.03	33.03	51.38	66.06	58.72	77.07	367
HI & VI	3.9	2.6	2.6	14.3	22.1	31.2	54.6	130
VI & MI	4.77	1.59	14.31	14.31	28.62	33.39	63.6	159
All 3	0	1.34	1.34	5.36	21.44	26.8	76.38	134
% by Age	**7.1%**	**4.9%**	**6.5%**	**10.8%**	**17.5%**	**19.0%**	**34.4%**	100.2%
Total	56.38	38.56	51.28	85.35	138.22	150.11	271.65	790

	15+	25+	35+	45+	55+	65+	75+
	100.2%	93.1%	88.2%	81.7%	70.9%	53.4%	34.4%

Percentages for age bands in the impairment subgroups and total numbers of people in each subgroup are taken from the report.
These are then used to ascertain the number of people in each age band per subgroup. The sum of VI people in each age range is created and a percentage of VI people for each age range calculated. Finally a cumulative percentage of people above each age threshold is created.