



# Accessing subscription video on demand:

**A study of disability and streaming television in Australia**



**Curtin University**

**accan**

# Accessing subscription video on demand:

A study of disability and streaming television  
in Australia

Katie Ellis, Mike Kent, Kathryn Locke and Melissa Merchant

August 2016



Accessing subscription video on demand: A study of disability and streaming television in Australia

Authored by Katie Ellis, Mike Kent, Kathryn Locke and Melissa Merchant

Published in 2016

The operation of the Australian Communications Consumer Action Network is made possible by funding provided by the Commonwealth of Australia under section 593 of the *Telecommunications Act 1997*. This funding is recovered from charges on telecommunications carriers.

Curtin University

Website: [www.curtin.edu.au](http://www.curtin.edu.au)

Email: [Katie.ellis@curtin.edu.au](mailto:Katie.ellis@curtin.edu.au)

Australian Communications Consumer Action Network

Website: [www.accan.org.au](http://www.accan.org.au)

Email: [grants@accan.org.au](mailto:grants@accan.org.au)

Telephone: 02 9288 4000

If you are deaf, or have a hearing or speech impairment, contact us through the National Relay

Service: [www.relayservice.gov.au](http://www.relayservice.gov.au)

ISBN: 978-1-921974-42-7

Cover image: Design by Richard Van Der Male with images from Shutterstock



This work is copyright, licensed under the Creative Commons Attribution 4.0 International Licence. You are free to cite, copy, communicate and adapt this work, so long as you attribute the authors and “Curtin University, supported by a grant from the Australian Communications Consumer Action Network”. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>

This work can be cited as: Ellis, K., Kent, M., Locke, K. & Merchant, M. 2016, *Accessing subscription video on demand: A study of disability and streaming television in Australia*, Australian Communications Consumer Action Network, Sydney.

# Table of contents

List of figures.....	iii
List of tables.....	iv
Abbreviations.....	v
Acknowledgements.....	vi
Executive summary.....	1
Recommendations.....	2
Recommendation to government.....	2
Recommendation to VOD service providers.....	3
Recommendation to advocates and consumer groups of PWD.....	3
Introduction.....	4
Background and historical context.....	4
Video on demand: its benefits for people with disability.....	6
Television accessibility.....	7
Internet accessibility.....	8
Australian subscription video on demand accessibility.....	9
Literature review.....	10
Methodology.....	14
Results.....	16
Part 1: Australian subscription video on demand.....	16
Service providers: features and accessibility policies.....	16
Stan.....	16
Netflix Australia.....	18
Presto Entertainment.....	20
Quickflix.....	20
Foxtel Play.....	21
Content analysis on social media: Whirlpool thread.....	22
Hardware: accessibility of devices.....	23
Part 2: Legislation and policies affecting television and video on demand.....	24
Australian legislation.....	24
Broadcast television.....	24
VOD.....	26
Relevant international legislation.....	27

The USA.....	28
The UK.....	30
Content analysis of accessibility policies on selected international VODs .....	30
Part 3: Survey and interviews: Findings and discussion .....	34
Summary of respondents’ views on video on demand services.....	34
Demographics .....	35
Barriers to accessibility .....	36
Choice of provider.....	37
Preferred hardware.....	38
Use of assistive technologies and aids.....	39
Availability of assistive technologies and aids .....	41
Assistance with set-up .....	43
Key issues regarding accessibility .....	46
The future .....	49
Conclusions and recommendations.....	51
Recommendation to government.....	52
Recommendation to the video on demand service providers .....	52
Recommendation to advocates and consumer groups of people with disabilities.....	52
Authors.....	53
Katie Ellis .....	53
Mike Kent.....	53
Kathryn Locke.....	53
Melissa Merchant .....	53
References .....	54
Appendix: Hardware accessibility .....	A

# List of figures

Figure 1. Timeline of the history of VOD in Australia .....	5
Figure 2. Timeline of subscription VOD in Australia 2014-2016 .....	6
Figure 3. Codes of practice for commercial television (captions).....	25
Figure 4. Part 9D of <i>BSA</i> .....	25
Figure 5. Section 24 of <i>DDA</i> .....	26
Figure 6. Respondents' category of disability .....	36
Figure 7. Services used by respondents.....	38
Figure 8. Respondents' access methods.....	39
Figure 9. Respondents' comparison of accessibility between VOD and broadcast television .....	42

# List of tables

Table 1. Definitions of accessibility features .....	7
Table 2. Television accessibility requirements according to disability .....	7
Table 3. Accessibility of subscription VOD in Australia in 2015 .....	9
Table 4. Accessibility on selected international VOD services.....	32
Table 5. Impairment breakdown: How do you access your VOD service? .....	44
Table 6. Impairment breakdown: What accessible features would make watching television easier for you? .....	44
Table 7. Impairment breakdown: How available are these accessibility features on your choice of VOD service? .....	45
Table 8. Impairment breakdown: How would you describe the level of difficulty in setting up your VOD service? .....	45

# Abbreviations

ACMA	Australian Communications and Media Authority
AD	Audio description / audio described
ANP	Accessible Netflix Project
ATVOD	Authority for Television on Demand (UK)
<i>BSA</i>	<i>Broadcasting Services Act (1992)</i>
<i>CVAA</i>	<i>(21st Century) Communications and Video Accessibility Act</i>
<i>DDA</i>	<i>Disability Discrimination Act (1992)</i>
FCC	Federal Communications Commission (USA)
MAA	Media Access Australia
NAD	National Association of the Deaf (USA)
PWD	People with disability / disabilities
SOCOG	Sydney Organising Committee for the Olympic Games
VOD	Video on demand
W3C	World Wide Web Consortium
WAI	W3C Web Accessibility Initiative
WCAG	Web Content Accessibility Guidelines 2.0



# Acknowledgements

The authors of this report owe a debt of gratitude to a great number of people who assisted in the planning, research and writing up of this project. Most importantly, we acknowledge the people with disability who participated in the survey and follow-up interviews. Without them, this study would not have been possible. We also thank the disability officers, community groups and peak bodies who assisted the research team by distributing this research to their clients.

Special thanks go to ACCAN who saw the value in the project and provided funding to see it go forward. We acknowledge the commitment of Narelle Clark, Tanya Karliyuchuk and Wayne Hawkins especially, in providing valuable feedback and support throughout the duration of the project.

A number of colleagues, community members and service providers have provided invaluable support and direction throughout the project including Scott Hollier, Alex Varley and Chris Mikul from Media Access Australia (MAA), Robert Kingett from the Accessible Netflix Project (ANP), and Kathryn Locke, Melissa Merchant and Sky Croeser from Curtin University. Ceri Clocherty's assistance in preparing the final report has been invaluable, as always. We also value the feedback from PWD and disability service providers who contacted us outside of the survey to share their views about both video on demand and the media and the internet in general. The support of Curtin University and the Department of Internet Studies in particular has been integral in providing an energetic and supportive research environment. Finally, we acknowledge Tim Dolin, Michele Wilson and Steve Mickler for their support of the project and the Office of Research and Development for their excellent administrative assistance.

# Executive summary

Video on demand (VOD) refers to television, movies and other digital video content streamed over internet-based online services. Because it is not linear, viewers are able to watch videos at any time once the programme is available. VOD can be either ad-based and free to watch such as catch-up television services or it can take a subscriber model whereby consumers pay a fee (usually monthly) to access services. Subscription VOD has been slow to take off in Australia. Quickflix and Foxtel Play have been present in a limited capacity for a while; however, 2015 saw the introduction of three new service providers in quick succession – Stan, Presto Entertainment and Netflix Australia. Popular commentary described the expanding market as the “streaming wars” and predicted consumers would be the beneficiaries (Tucker 2016).

However, the amount of benefit was not equal – the accessibility of VOD to consumers with disability has been a focus of disability activists internationally. Despite great potential for accessibility, people with disabilities (PWD) risk being left out of the VOD revolution in television viewing if the content and hardware to access it are not made accessible.

There are two main features that support the playback of online videos in an accessible way:

- Captions: this is the text version of speech and other sound that can be provided on videos. Captions can be either open (which means the captions are always on) or closed (which allows the consumer to turn the captions on or off).
- Audio description (AD): this is when spoken narration is used to describe visual content. Narration is usually included between bits of dialogue and can be used to describe visual elements such as scenes, settings, actions and costumes.

In addition, the World Wide Web Consortium (W3C) has produced the Web Content Accessibility Guidelines (WCAG) 2.0 to make sure that creators of web and app content include accessibility features such as captions, AD and an accessible interface for assistive technology users. However, despite the best intentions, these are not always as accessible as they could be and many PWD find themselves unable to easily access their desired VOD content.

This report details the findings of the research project *Accessing video on demand: A study of disability and streaming television*. The 12-month project reviewed national and international policy and surveyed 145 PWD and sought to:

- Identify what Australian consumers with disabilities want from VOD and investigate how they currently use it.
- Determine which accessibility features would most benefit this group.
- Evaluate VOD in Australia against existing legislation and W3C recommendations.
- Compare access features on current and emerging Australian VOD with international offerings e.g. Netflix in the USA and Amazon Prime in the UK.

This report has three parts. Part 1 reports on Australian subscription VOD service providers’ features and accessibility policies. While none of the providers had an ‘accessibility policy’ in place, there was a varying approach to accessibility, with Netflix, Stan and Quickflix all providing varying degrees of

captions. However, Netflix Australia was the only provider to offer AD. This part of the report is also concerned with associated content analysis on help forums and social media, particularly the Whirlpool thread. Lastly, hardware – the accessibility of devices people use to access VOD such as tablets, smartphones, casting devices and game consoles – is discussed. We discovered a significant commitment to accessibility, with manufacturers integrating accessibility into design.

Part 2 focuses on the role of legislation in broadcast television and in VOD services, both in Australia and internationally, with policies in the USA and UK used as major examples. VOD is not subject to the requirements of the *Broadcasting Services Act (1992)* regarding disability access, and existing VOD in Australia has had a poor history of accessibility (Mikul 2013). However, activists internationally have initiated disability discrimination complaints against inaccessible VOD with significant success, for example Netflix making commitments to improve both captioning and AD.

Part 3 of the report is concerned with the findings of, and offers discussion on, the results of the survey and interview stages of the research project. A total of 173 people participated in the survey regarding their use of VOD in Australia. Detailed insights were gained into both how PWD are currently using VOD and their anticipated usage of the ‘newer’ services which were introduced in 2015. Survey respondents were sourced through disability organisations, community groups and via social media. We triangulated the data obtained through the survey with 14 follow-up interviews and discovered:

- PWD like the choice and freedom offered by VOD but not its limitations such as difficult set-up and inability to integrate with assistive technologies such as screen readers.
- There is no ‘one size fits all’ answer to accessibility – different people use different features in different combinations.
- Cost is a significant prohibitive factor, particularly in the context of the ‘economics of disability’, or the lower income levels of this group alongside increased costs related to assistive technology.
- PWD experience both the same issues the broader population report in relation to VOD (i.e. geoblocking / licensing and connectivity) as well as those specific to disability (absent or inconsistent accessibility).

The report concludes with recommendations that emerged from discussions with disabled consumers (and potential consumers) of VOD and analysis of international trends regarding advocacy and policy.

## Recommendations

### Recommendation to government

Introduce legislation that requires a minimum level of AD accessibility on broadcast television, for example by extending the *BSA* requirements around captions to include AD. Following this, the accessibility requirements applied to broadcast television should also be applied to VOD. Further, we recommend governments work to ensure that PWD are aware of the accessibility features that will benefit them.

## **Recommendation to VOD service providers**

Recognise a significant portion of your consumer base could be PWD or their families and friends who may wish to share in the activity of VOD. We recommend service providers hire accessibility consultants to make their platforms accessible and useable for PWD.

## **Recommendation to advocates and consumer groups of PWD**

Participate in advocacy efforts to encourage and demand that VOD providers improve accessibility options, for example the grassroots approach taken by the ANP or via disability discrimination complaints such as *NAD v Netflix*.

# Introduction

## Background and historical context

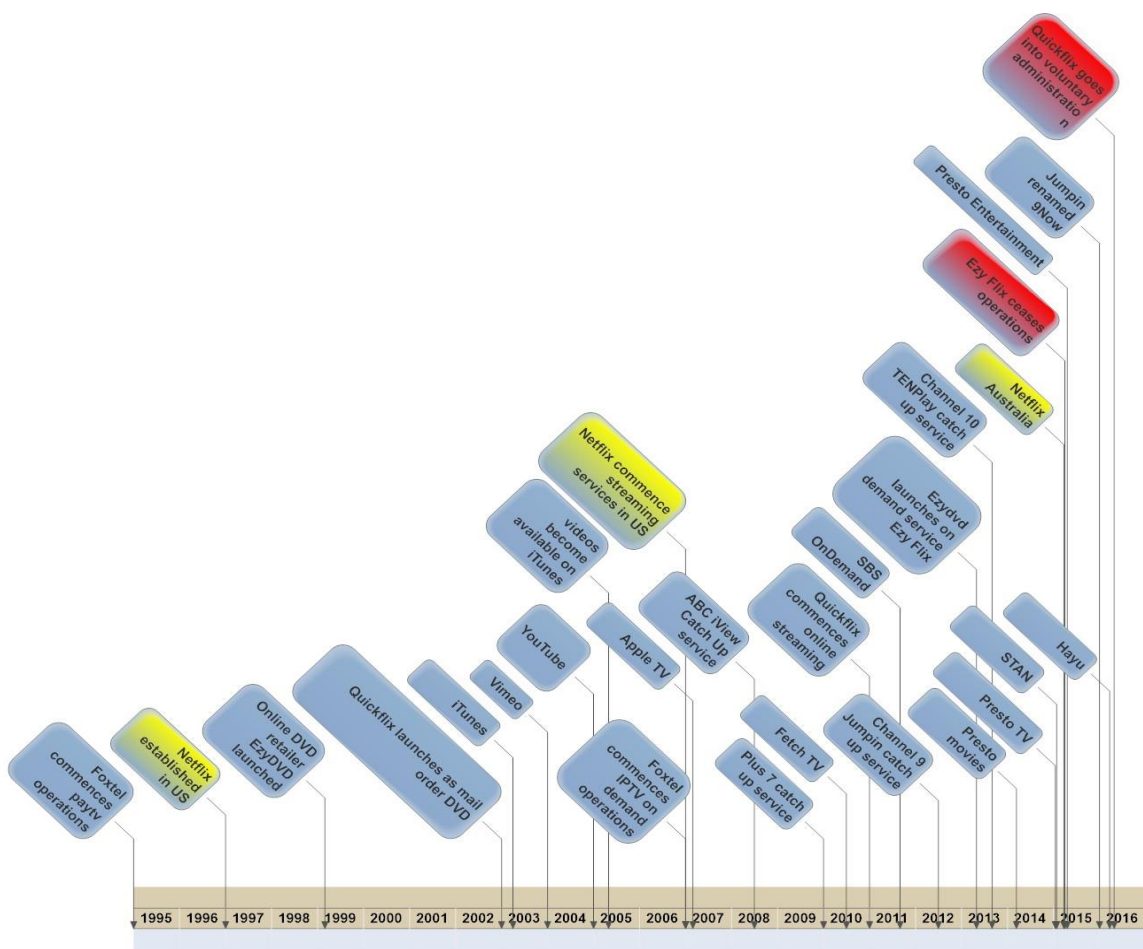
The concept of VOD was first commented on in an article published on 29 March 1971 in the *Iowa City Press Citizen* which described the practice of watching television programs on video cassette rather than the original time of broadcast as “video on demand” (Oxford English Dictionary). Another source described these early ideas of VOD as “time-shifted programmes, such as those recorded and watched at a later date” (RNIB, *Sense & Action on Hearing Loss* 2015, p. 8). However, as technology evolved, this ‘purist’ concept of VOD – watching video content outside of allotted television broadcast times – was also applied to DVDs and pirated videos on the internet. VOD now predominantly refers to any audiovisual content legally streamed via the internet such as the services offered by Netflix and other providers.

There are two types of modern-day VOD. Firstly, free services such as catch-up television that rely on advertising for revenue and, secondly, subscription-based services where subscribers pay a fee to gain access to large collections of content. This research is concerned with the latter, the subscriber model of VOD in Australia, and focuses on the impact of 2015 when three new services – Netflix Australia, Stan and Presto Entertainment – entered the market. At the time, Australia was described as having entered the “streaming wars” and consumers were predicted to be the beneficiaries (Tucker 2016).

VOD differs from more traditional or broadcast television. VOD is generally streamed over internet-based online services and is not linear, giving viewers the opportunity to watch the video at any time once the programme is available. Unlike broadcast television there is no particular government or corporate entity controlling the creation of VOD, although it is common for the distribution hub to be run by a corporation. Such examples include Google’s YouTube in the case of free VOD, as well as other companies affiliated with VOD services such as Netflix Australia, Stan, Presto Entertainment, Quickflix and Foxtel Play. While anyone can effectively record a video and distribute it, these commercial VOD services are largely viewed as a complementary or alternative delivery mechanism to broadcast television, featuring similar television shows and movies while taking advantage of the time-shifted convenience of the medium. However, while VOD also has the benefit of improved video quality, the ability to deliver an effective VOD service remains highly dependent on the speed of broadband. VOD also suffers from geoblocking, meaning that some VOD services are not available locally or their services are limited.

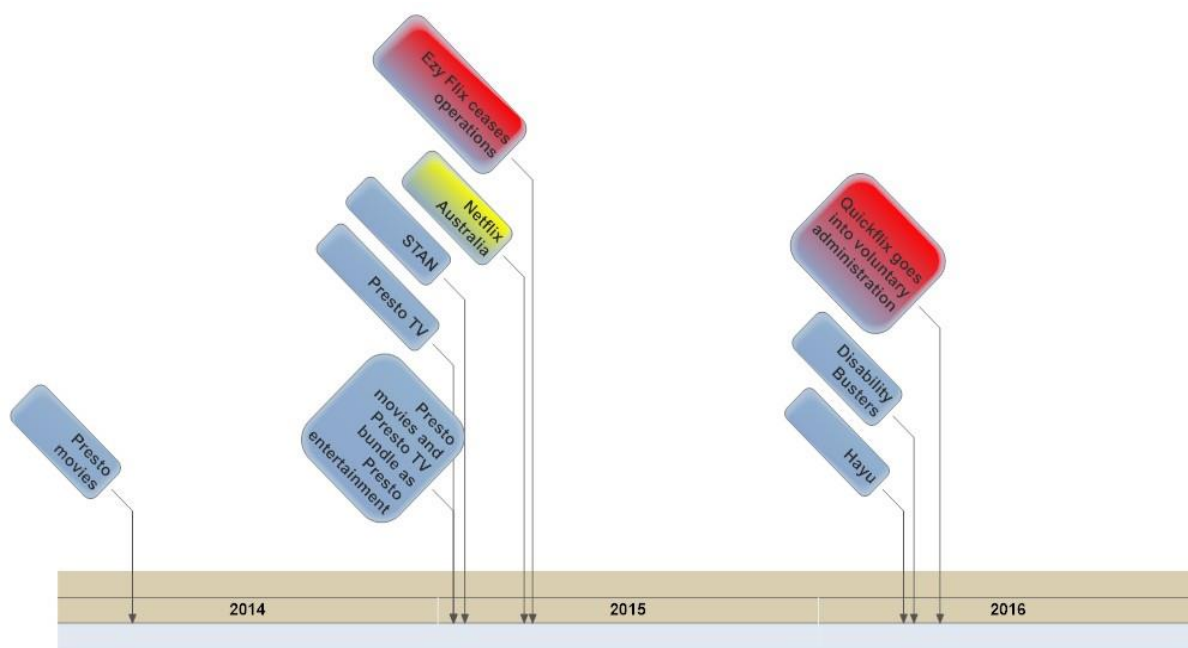
Subscription VOD services have caused a major shift in the way television is used and consumed in Australia. Prior to 2015, there was a small subscription VOD industry in this country. Providers had limited content and the bulk of VOD services used by Australians related to catch-up television or watching user-generated videos on YouTube or Vimeo. As Figure 1 illustrates, the beginnings of VOD in Australia can be traced back to the introduction of pay television carrier Foxtel in 1995, with the majority of activity occurring after 2008 after the introduction of catch-up television. The period between 2014 and 2016, however, is particularly active (enlarged in Figure 2). Historically notable moments include the launch of the online DVD rental store EzyDVD in 1999 and its then counterpart Quickflix in 2003. From 2008 catch-up television on demand offerings then progressively became

available in Australia following the introduction of user-generated sites such as YouTube (2005) and Vimeo (2004) and the availability of audiovisual content on iTunes (also from 2005). Online streaming services came next, with Quickflix streaming content from 2011 and EzyDVD launching an online streaming service, EzyFlix, in 2013. Netflix – which had been operating in the USA since 1997, streaming since 2007 – did not become legally available in Australia until March 2015. Stan and Presto Entertainment became available the same year, with Hayu following shortly after in 2016. A disability focused VOD disability specific site – Disability Busters – launched in April 2016. Between 2014 and 2016 the Australian VOD market experienced rapid growth and change, with the early providers Quickflix and EzyFlix unable to withstand the increased competition. EzyDVD ceased operations in 2015 and Quickflix went into voluntary administration in 2016.



**Figure 1. Timeline of the history of VOD in Australia**

The growing availability of VOD services continues to provide disruptive change to the way in which consumers enjoy information and entertainment. While traditional broadcast television has provided great opportunities for participation in news, events and popular culture references, both socially and in the workplace, the move towards VOD services has seen a notable decline in traditional television viewing habits, with online continuing to increase at the expense of Australian free-to-air programming (C-Scott 2016) (Figure 2).



**Figure 2. Timeline of subscription VOD in Australia 2014-2016**

## Video on demand: its benefits for people with disability

For the general population, the always-on, always-available and always-shareable nature of VOD means that the experience is both convenient and instant. If a television show is of particular interest to friends and family, it can be quickly shared through popular social media with others, allowing everyone to join in the experience.

For PWD, it is this ability to share the experience that is critical to the popularity of VOD services. This gives them not only the same benefits as others but also ensures that PWD are not unintentionally excluded from participation – that is, it allows them the choice as to whether or not to join in. However, as the data from this research suggests, this utopian idea of inclusion is often not currently a reality – exclusion is a significant concern for PWD due to the lack of accessibility features in popular subscription VOD services. In particular, the lack of captions, AD and interfaces that do not comply with international web accessibility standards are resulting in many PWD being unable to fully participate in the preferred viewing platforms of family and friends. This research has revealed that while Netflix, and to some degree Stan, provide accessibility options, other VOD subscription services do not.

There are also different issues in terms of what PWD are seeking from VOD services. In the case of the mainstream population, most people are moving to VOD not because there is any particular flaw in the broadcast television experience, but rather due to the additional benefits of viewing the same broadcast online at a more convenient time. However, this is not the case for PWD. In Australia the amount of captions available on broadcast free-to-air and subscription television is limited on the non-primary channels. Captions are only required on the primary channels (ABC, 7, 9, 10, SBS) and not the digital multichannels (ABC2, ABC3, ABCNews24, SBS2, 7Two, 7Mate, GO!, Gem, One HD and 11). In addition, AD remains elusive despite the ABC trial of an AD service some years ago. In contrast, while VOD services do not currently contain a wealth of accessibility features, most movies



and many television shows offered by these services are created with captions and an AD soundtrack, particularly for DVD release. On this basis, there is therefore more opportunity for mechanisms to be put in place to provide these in a VOD environment. Further, the international nature of VOD makes it more likely that other more accessible versions of certain titles might be able to be accessed from different sources.

With the older VOD services such as YouTube only being 10 years old and more modern Australian subscription VOD services such as Netflix, Stan and Presto being in their infancy, the true benefits for PWD are yet to be realised and, as such, the fear of exclusion remains. Yet if the accessibility features of titles continues to rapidly evolve, and legislative frameworks – such as those in the USA that affect Netflix – continue to incorporate the access of captions and AD into VOD services, it is likely that PWD will be able to participate better in this modern-day increase in online viewing.

## Television accessibility

As a visual and audible medium, television can be disabling in different ways for people with a variety of impairments. For example, the visual nature of television can be problematic for people with vision impairments, while other people may not be able to hear the sound due to a hearing impairment. However, a number of accessibility features exist to translate information in different ways – these are outlined in Table 1.

**Table 1. Definitions of accessibility features**

Accessibility feature	Explanation
AD	A track of narration which describes important visual elements of a television show, movie or performance
Closed captions	A presentation of the audio component of audiovisual content as text on screen
Lip-reading avatars	An animated talking face for lip readers
Signing avatars	Animated hands providing sign language interpretation
Spoken subtitles	A reading aloud of interlingual subtitles. Can be generated as a separate audio track by the broadcaster or created by the receiver using text to speech software
Clean audio	A provision of the speech without any background music or other sounds

While these features are available to varying degrees on an international scale (for example, according to legislation, captions are required on Australian broadcast television but AD is not – yet neither are required on VOD), a Spanish study conducted by Utray, de Castro, Moreno and Ruiz-Mezcua makes the argument they should all be available if television is to be truly accessible. Table 2 highlights the features required to make television accessible to most PWD (Utray et al. 2012).

**Table 2. Television accessibility requirements according to disability**

Impairment	Accessibility features
Hearing	<ul style="list-style-type: none"> <li>• Subtitles for 100% of the content</li> <li>• Sign language in newscasts, documentaries and education programs</li> <li>• A clean audio service for dramatic or fictional contents</li> </ul>
Vision	<ul style="list-style-type: none"> <li>• AD for fiction programs and documentaries</li> <li>• Interactive services, such as the electronic program guide (EPG),</li> </ul>



Impairment	Accessibility features
	<ul style="list-style-type: none"> <li>accessible by means of audio navigation systems</li> <li>Enhanced graphical user interfaces (for people with residual vision)</li> </ul>
Physical disabilities	<ul style="list-style-type: none"> <li>Interactive navigation systems</li> <li>Adaptable ergonomics of hardware and software</li> </ul>
Elderly and people with intellectual disabilities	<ul style="list-style-type: none"> <li>All of the above</li> <li>A 'design for all' strategy</li> </ul>

While these features are becoming more available as a result of digital and online television, research highlights the need for further legislation in this area. A 2013 study of the extent of e-accessibility across 27 European countries and some third world countries – focusing in particular on the web, telecommunications and television – found accessibility to be more widely available on digital and online television in countries where legislation is in place (Kubitschke et al. 2013)

## Internet accessibility

As television moves to online platforms, “much of the accessibility problems found on traditional Web pages are carried also to the TV field” (Fernandes et al. 2013, p. 178). Fernandes et al. recommend evaluating television offerings against available criteria such as those set out by the W3C as well as the specific adaptation requirements of PWD. The W3C has produced the WCAG 2.0 to ensure that creators of web and app content include accessibility features such as captions, AD and an accessible interface for assistive technology users. A simplified version of WCAG 2.0 is reproduced below.

WCAG should be:

- Perceivable
  - Provide **text alternatives** for non-text content.
  - Provide **captions and other alternatives** for multimedia.
  - Create content that can be **presented in different ways**, including by assistive technologies, without losing meaning.
  - Make it easier for users to **see and hear content**.
- Operable
  - Make all functionality available from a **keyboard**.
  - Give users **enough time** to read and use content.
  - Do not use content that causes **seizures**.
  - Help users **navigate and find content**.
- Understandable
  - Make text **readable and understandable**.
  - Make content appear and operate in **predictable** ways.
  - Help users **avoid and correct mistakes**.
- Robust
  - Maximize **compatibility** with current and future user tools (W3C 2008).

## Australian subscription video on demand accessibility

As Table 3 illustrates, in the context of the subscription VOD services analysed in this study, only two of the features outlined by Utray et al. are made available, and are only available in a limited capacity – captions and AD. However, research into VOD services more broadly in the UK context reveals a small number of instances of signing (ATVOD 2015).

**Table 3. Accessibility of subscription VOD in Australia in 2015**

Provider	Closed captions?	AD?	WCAG 2.0 compliant?
Netflix Australia	Yes (most titles)	Yes (limited titles)	No
Stan	Yes (some titles)	No	No
Quickflix	Yes (few titles, difficult to identify)	No	No
Presto	No	No	No
Foxtel Play	No	No	No

Currently there is no specific law in Australia that applies to the accessibility of subscription VOD services. There are, however, some important facts to be aware of:

- Policies and legislation in the USA do require access in VOD services. As such, USA-based services such as Netflix feature more accessibility and are likely to continue increasing their accessible content.
- Broadcast television in Australia is required to provide captioning under specific circumstances. As such, several cases have been lodged with the Australian Human Rights Commission arguing that online video should also be made accessible. This may result in improvements in the future for Australian-based services.
- While there is no specific Australian law that relates to the inclusion of accessibility in content delivered online, Section 24 of the *Disability Discrimination Act (DDA)* of 1992 does require that information should be provided to PWD, and this is what has formed the basis for legal challenges.
- Some VOD subscription providers such as Presto and Foxtel have community boards which can provide a mechanism to complain directly to the provider if there is a lack of access.
- AD content has been trialled in Australia on the ABC broadcast service and ABC iview free streaming service, suggesting that there is some progress being made in increasing the awareness of online AD content in Australia.

# Literature review

The field of academic and industry research in the area of VOD and accessibility is surprisingly narrow, both here in Australia and internationally. Despite the growing popularity of VOD – currently 50% of internet users are watching movies and television online (Screen Australia 2014) – the issue of equitable and inclusive access is only being discussed by a few researchers.

An early example of the argument being put forward for an inclusive digital environment in Australia came from Arch and Burmeister, who reason that “the ‘e’ in e-commerce, e-government and e-learning is for electronic, not for exclusion” (Arch & Burmeister 2003). They use the example of a discrimination case brought against the Sydney Organising Committee for the Olympic Games (SOCOG) by Bruce Maguire in 2000 regarding the lack of accessible features on the SOCOG website (Arch & Burmeister 2003, p. 4). The verdict was that the SOCOG website had discriminated against Maguire, who had a vision impairment, because it was impossible for those who use screen readers to gain access to ticketing information, event schedules or results (Arch & Burmeister 2003). This was a significant result because it was the first time that the alternative format requirements of consumers with disability were recognised as a human right (Ellis & Kent 2011).

Internationally, research into VOD and accessibility focuses on three key areas – social and cultural aspects, and technology. Elizabeth Ellcessor, a cultural, media and disability studies scholar based in the USA, argues that the fight for accessibility begins again each time a new media technology is developed (Ellcessor 2012). She claims that the lessons from previous technologies are not being learned, highlighting how mandates for the captioning of television content were handed down without giving any consideration to its internet counterparts (Ellcessor 2012). This ongoing exclusion, as a result of the media environment not being accessible, results in PWD being omitted from the “mediated public sphere” (Ellcessor 2012). Sean Zdenek, another USA-based researcher, addresses the issue of how little of the content on the internet is captioned (Zdenek 2011). However, the main focus taken by Zdenek is on the *quality* of the captioning that is available, arguing that the primary incentive of the captioner is to “honour the narrative” (Zdenek 2011). Another researcher based in the USA, in the area of media law, is Joshua Pila. He highlights how complicated legislation around captioning and VOD can be (Pila 2012). Finally, Pi-Tzong Jan, His-Peng Lu and Tzu-Chuan Chou carried out a survey in 2012 in Taiwan on how the quality of Internet Protocol Television (IPTV) was perceived by both the providers and the audiences (Jan, Lu & Chou 2012). The researchers measured what variables were considered important for ‘customer satisfaction’ based on five categories: attractive quality, one-dimensional quality, must-be quality, indifferent quality and reverse quality. Their research showed that a discrepancy exists between suppliers and audiences regarding the importance of accessibility. Whereas audiences rated the provision of captions as a “must-be quality” (a necessity of the service), the providers rated it a “one-dimensional quality” (where by the customer’s satisfaction may increase with its availability, but it was not a necessity) (Jan, Lu & Chou 2012).

Australian research in this area appears to be limited to Screen Australia, Media Access Australia (MAA) and the author of this report, Katie Ellis, whose most recent articles on the topic of VOD and accessibility discuss both the transition to broadband-based television and Netflix’s captioning model (including the lack of AD features) and in particular highlight the need for legislation mandating accessible digital media environments (Ellis 2015, 2014b). This echoes the issues around social inclusion (and exclusion) discussed by Ellcessor in 2012 and shows that this is a global

problem. The Screen Australia *Online and on demand: Trends in Australian online video use* report, released in 2014, begins with the premise “online viewing is for everyone”, yet states that its research shows that the Australian market is in fact quite fragmented and that many still access their online video content illegally (Screen Australia 2014). However, their survey and focus groups did not discuss accessibility issues – the categories they used to analyse consumers were age, occupational status, household structure and income (Screen Australia 2014). Additionally, it was conducted prior to 2015, before the influx of subscription VOD providers to the Australian landscape. The MAA report *Access on demand: captioning and audio description on video on demand services*, released in 2015, did address accessibility and VOD services and provided four recommendations:

- Captions should be made available on all catch-up television services by 2015.
- Netflix have proven that it is possible to caption VOD content and therefore other providers should voluntarily caption to “acceptable” levels by the end of 2016. If this does not happen, the Australian government should legislate captioning levels.
- Captioned content needs to be clearly labelled and easy to find.
- The AD trial in ABC’s iview should be used as a framework for this service to be available on all catch-up television content (Mikul 2015).

MAA analysed all of the VOD providers in Australia to assess whether or not they had captioned content and/or AD content available. Their results showed:

- Catch-up television: of the six services offered, three had captioned content and only one of these had AD.
- Ad-supported VOD services: of the five options, two had no captions at all, two had subtitles for foreign language content and YouTube varied depending on who uploaded the video.
- Subscription VOD services: this category had 17 services. Of these only Netflix had captioned content (they are also beginning to offer AD). Two services offered subtitles for foreign language content and 14 offered no accessibility features.
- Transactional VOD services: of the ten services in this category, four had no captioned content, four offered some and one (Telstra Bigpond) offered movies with open captions.

In the UK the Authority for Television on Demand (ATVOD) assess the accessibility of VOD in that country each year. In 2015 they discovered an increasing level of access and understanding of the issue. Their report focused on three accessibility features – subtitles (or captions), signing and AD. Their key findings were that:

- The provision of subtitles is increasing across the board, including through new entrants to the industry such as Amazon.
- Signing is provided on a limited number of VOD services.
- AD lags behind, although providers of AD in the previous year continue to offer it and more VOD are exploring the viability of this service (ATVOD 2015).

As discussed, much of the literature focuses on the provision of captions – a vital accessibility feature for people who are Deaf or hard of hearing. However, television is both a visual and aural medium and, along with audiences with hearing impairments, a significant portion of people with vision impairment ‘watch’ television (Cronin & King 1998; Ellis 2015). Accessibility is even harder to

come by for this group because AD is not well known and is more sporadically implemented – while captions are a well-known television accessibility feature, AD is not, despite both having origins in the 1960s (Cronin & King 1998; Downey 2007). Yet while captions have been available on Australian television since 1992, AD was not introduced until 2012, and then only for a 14 week trial. However, the introduction of VOD has been identified as a potentially pivotal moment for the more widespread adoption of AD (Ellis 2015; Kingett 2014a). Analysis of the available literature reveals four reasons for the under-prioritisation of AD – lack of legislation; absence of international guidelines regarding best practice; technological advancement focusing on other priority areas; and limited activism.

Joshua Robare supports this, arguing that legislation in a number of countries has favoured the inclusion of audiences with hearing impairments while disregarding those with vision impairments (Robare 2011). For example, in Australia, whereas the provision of captions on broadcast television is mandated by both the *DDA* (1992) and the *BSA* (1992), the provision of AD is not (Ellis 2014b). As a result, there is no AD on Australian television. Similarly, Australian standards do not stipulate requirements about how AD is to be delivered on hardware such as set top boxes (Ellis 2014b; Mikul 2010).

In addition to a lack of legislation, the practice of AD is largely unregulated and cultural differences arise in the way AD is delivered in different countries (Fryer 2016). As a result, AD is implemented “at different rates, speeds and styles” (Gisbert 2014). It is also often the case that improved accessibility for PWD, such as the provision of AD, begins as a “sporadic event” and then, once citizens become aware of its existence, a policy follows (Gisbert 2014). In the Australian context, prior to the 12-week trial of 14 hours of AD programming per week on the ABC in 2012, this accessibility feature was not well known in this country (Australian Communications Consumer Action Network 2012). However, that example remains just a sporadic event – no policy has been introduced to mandate its provision (Ellis & Goggin 2015). Research in Europe suggests the delivery of accessibility should be more widespread and take “into consideration the many and wide-ranging technical exploitation channels and formats” (Gisbert 2014). Whereas policy discussion papers predicted improved levels of AD on Australian television following the introduction of VOD and other technological advancements (Australian Government 2008), research in the European Union shows market forces must be encouraged by legislative requirements (Kubitschke et al. 2013).

Technological change has also impacted on the provision of AD internationally. Although AD was introduced on television in the USA during the 1990s, and analysts predicted that technological change such as stereo sound and VCRs would encourage a more widespread provision, this has not been the case (Ellis & Kent 2015). In the USA, the Federal Communication Commission’s (FCC) direction to “the four big TV networks and the 5 biggest cable networks to show 50 hours of AD programmes per quarter by April 2002” (Mikul 2010) was overturned in part due to an argument launched by the networks that the appropriate technology was not available to deliver AD (Robare 2011). However, these regulations were re-enacted in recognition of technological change in 2010 as part of the *Twenty-First Century Communications and Video Accessibility Act (CVAA)* (Media Access Australia 2012). In the late 1990s, Barry Cronin called for further research into the topic to establish the importance of AD and highlighted the need for technical and broadcast standards. He believed “new and emerging television technologies” as well as “nonbroadcast delivery models” were an important area (Cronin & King 1998).

Finally, some studies suggest AD was not as high a priority for Blind and vision impaired activists who focused their energies on access to the workforce rather than access to television (Snyder 2005). However, increasingly, with the digitisation of television, activists with vision impairment are advocating for better television accessibility (Fernandes et al. 2013; Ellis 2015; Ellis & Kent 2015). VOD has been a particular focus point with online movements such as the Accessible Netflix Project (ANP) achieving successful outcomes (Kingett 2015a; Ellis & Kent 2015). Following the ANP's advocacy across a number of online platforms, Netflix announced the introduction of AD on original programming in 2015, just as the service launched an Australian offering.

Overall, there is a varied approach being taken to work carried out in this field, but it appears that much of it is focusing on the intersections of technology, inclusion and social responsibility; however, the research still remains scarce. As Ellcessor writes, "the ability to access a global media sphere is crucial to the integration of people with disabilities as members of increasingly networked cultural, economic, and political spheres", therefore "it is imperative to consider the intricacies of accessibility at the level of national, international, industrial, and voluntary policies" (Ellcessor 2012). The current research is one attempt to consider these intricacies and gain new user-centred insights from consumers with disabilities regarding their current and anticipated use of VOD.

# Methodology

The project used a predominately qualitative approach to the topic, incorporating some quantitative data through the survey stage. The project adopted a multi-modal methodology across four phases:

## **Phase 1 – Content analysis**

The content of accessibility policies published by subscription VOD services (Quickflix, Foxtel Play, Stan, Netflix Australia, Presto Entertainment) and related hardware (Chromecast, Apple TV, tablets) were analysed. In the absence of specific accessibility policies, analysis was given to each provider's 'terms of use', W3C status, terms of consent, and use of key words associated with accessibility (such as captions, Deaf, Blind, AD and accessibility). Associated 'help' discussion forums and each provider's social media profiles were also analysed. A discussion regarding the availability of accessibility on Australian subscription VOD on the Whirlpool forum was also analysed.

## **Phase 2 – Policy analysis**

The accessibility features of VOD providers were analysed against government and industry policies. The content analysis adopted in phase one was repeated for international VOD providers – Netflix US, Amazon Prime UK, iFlix (South East Asia), HOOQ (The Philippines, Thailand), BIGFlix (India), and EUROvod (Europe). Specific analysis was extended to 'accessible' VOD providers – Talkingflix, Zaga (Canada) and Viki (Singapore) – and those targeted via community petitions for non-compliance with accessibility policies – Netflix US and LOVEFiLM/Amazon Prime UK. Related international governmental policies were reviewed across the USA, UK, Singapore, New Zealand and Canada.

## **Phase 3 – Online survey**

Insights were gained into both how PWD are currently using VOD and their anticipated usage of services at the time of the survey. The survey ran from January to February 2016. Significantly, most subscription VOD services (Netflix Australia, Stan and Presto) had only been introduced in Australia in the year prior. Foxtel Play and Quickflix had been in operation for some time prior; however, Foxtel exists in the Australian television landscape as a pay television channel and Quickflix's business model included both streaming and DVD distribution. Survey respondents included PWD, their families and carers, and were sourced through disability organisations and community groups as well as via disability focused social media.

The final sample size was 173. While this sample was a little lower than originally projected, based on the National Statistics Service sample size calculator and drawing data on the number of Australians with disability who access the internet from the Australian Bureau of Statistics (2011; 2013), this sample reflects a margin of error of plus or minus 4%. However, given the sample was selected primarily by snowball selection, rather than a true random sample of the population, this confidence level should be considered with caution. The survey took into consideration the particular characteristics of the target group (e.g. concentration limits, physical factors impacting engagement with technology) and was housed on Survey Monkey to allow translation by a screen reader / other assistive technologies. Alternative formats were also made available on request.

#### **Phase 4 – Interviews**

Data obtained through phase one and two were triangulated with 14 interviews conducted with representative survey respondents, community disability service providers and key stakeholders including Robert Kingett from the ANP and Chris Mikul from MAA. Interviews were requested with accessibility consultants employed at each VOD service investigated; however, none participated. Interviews were conducted via phone, Skype and email.



# Results

## Part 1: Australian subscription video on demand

A content analysis of the policy sections of Stan, Presto, Netflix, QuickFlix and Foxtel Play in November 2015 found none of the Australian VOD providers have an accessibility policy. While the absence of such a policy has implications across a wide range of accessibility features, the two main focus points of this research are captioning and AD. Stan, Presto and Netflix all launched without AD in place, joining the struggling Quickflix which also did not offer AD. While Stan and Presto both claimed to be “working on” adding captions to their catalogue, Quickflix took a distributor-led approach, making captions available if the distributing studio offered them. Stan has since introduced captions on some titles.

Despite the lack of a clear accessibility policy, Netflix are in front in terms of accessibility, with captions available for most content. AD for some content became available in April 2015 shortly after their Australian launch. Chris Mikul from MAA, author of *Access on Demand*, was interviewed as part of this research. He told us that Netflix’s provision of captions was due to the impacts of legislation in the USA, namely the CVAA. Mikul believes the complete lack of AD on local VOD services can be attributed to the lack of Australian legislation requiring it. In an interview as part of this research he explained the central issue with AD in this country as “the lack of AD on broadcast TV, which is shocking in a world context”.

When Netflix did introduce AD on their original programming, the VOD described the access feature as an option customers could choose, “just like choosing the soundtrack in a different language” (Wright 2015). However, despite successful trials, there is no legislation in place regarding the provision of AD in Australia and the other VOD providers have not introduced AD as a way to compete with Netflix. Kingett told us in an interview that VOD providers treat accessibility as an “afterthought”, particularly for Blind people whom most don’t think of as watching television. Yet research dating back to the 1990s shows almost 100% of people with vision impairments watch television at least once a day (Cronin & King 1998). Kingett describes the lack of accessibility as evidence VOD is “stuck in the dark ages” and recommends VOD providers hire PWD:

*If companies want to learn about accessibility, or have someone who will really care so they don’t have to, then actually go out and hire a disabled department leader to lead the audio description team, accessibility design team, or otherwise.*

PWD, including people with vision impairments, *do* use VOD and continue to have particular unmet access needs. As the Netflix example illustrates, both legislation and recognition of PWD as a key audience demographic will result in a more accessible television environment for PWD.

## Service providers: features and accessibility policies

### Stan

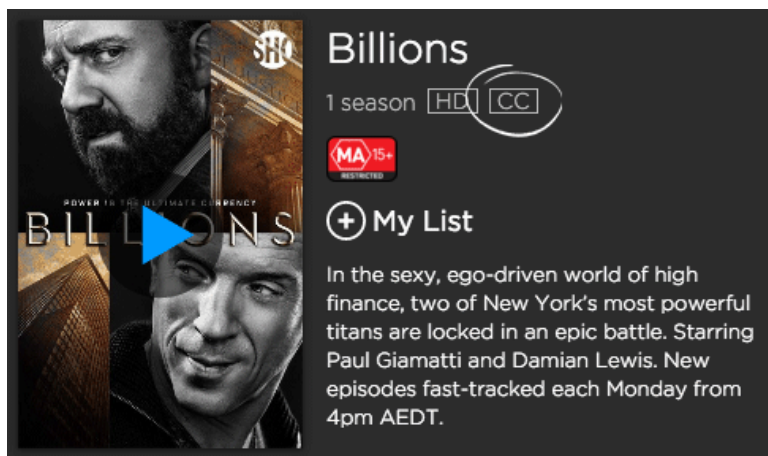
Stan was launched in Australia on 26 January 2015. It is owned by StreamCo, a joint venture of Nine Entertainment Co. and Fairfax Media. Stan produces some limited original content but most of its

content is sourced from others. Subscriptions are based on a 30-day cycle and can be cancelled at any time. Stan allows you to play up to three videos on different devices at the same time. Stan can be watched on a device that is connected to the internet and capable of running a web browser or a Stan app. Devices can include smart TVs; blu-ray players; game consoles; streaming media players; smartphones or tablets; and desktop or laptop computers.

Stan launched without any accessibility features in place; however, closed captions became available on selected content in January 2016 (Media Access Australia 2016). The introduction received little fanfare as no specific announcement or notification was made. However, the issue of closed captions had been raised in Stan discussion forums and on social media during its launch in January 2015. In addition, at that time on Facebook, Stan promised they would “be adding closed captions to a wide variety of content in the near future. We will make sure to keep you updated when that happens” (StanAustralia response to Facebook user, 2015). In June of the same year, in response to a tweet enquiring if they had any closed content available, including lists of such content, Stan’s official Twitter responded “Only foreign films at the moment, we’re working on expanding on that” (@StanAustralia 2015).

Now that captions are available on some titles, Stan offers the following instructions on how to enable them:

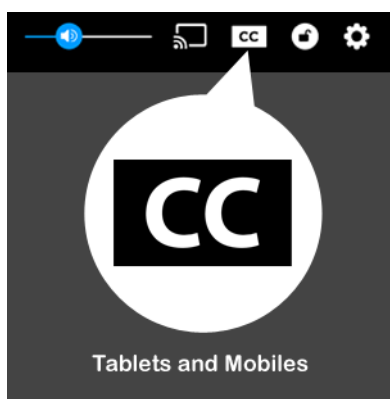
*While choosing your TV show or movie title, you can see if closed captions is available by the **CC** icon under the title. Please note: Closed Captions is not available for all titles.*



*The **CC** icon may be located in different areas of the screen depending on the device you are using, but you will generally find it within the synopsis of a title if it is available.*

*To enable closed captions, click/select the **CC** icon while watching a video. Please note that the **CC** icon will be located in different areas of the screen depending on the device you are using. Please refer to the images below relevant to your device.*

**AirPlay Note:** Closed Captions **MUST** be enabled on both the device that you’re using to airplay and your Apple TV. To enable Closed Captions on your Apple TV, hold down the **center button** on your Apple TV remote while watching a title. Under **Subtitles**, select your preferred language.



*If you don't see the CC icon, closed captions is not supported on that title.*

*You can see if Closed Captions is on by the **ON** indicator on the **CC** icon, or if the **CC** icon is blue (Stan Help 2016).*

While captions are available, there has been some confusion about how to access them and on which titles they are available. In addition, the website and apps on devices such as tablets are not entirely WCAG 2.0 compliant, meaning that some users are likely to experience difficulties in finding and playing video content with their assistive technologies. Further, despite the introduction of captions, AD remains unavailable.

### **Netflix Australia**

Netflix is one of the largest global online video services, operating in over 190 countries worldwide and became legally available in Australia on 24 March 2015. It produces original content in addition to streaming the content of others. Prior to the long awaited launch of Netflix Australia in 2015,

almost one quarter of Australians were illegally accessing the USA version of Netflix via virtual private networks (CNET 2014). Thus, when Netflix Australia launched it was in competition not only with Stan, Presto and Quickflix, but also with their parent company, Netflix. Netflix Australia's content offers a smaller and different variety of content to Netflix in the USA. However, it still contains thousands of movies and television shows available to watch instantly on any device that streams Netflix. Subscriptions are monthly and can be cancelled at any time.

Significantly, Netflix Australia launched with a number of accessibility features in place, including closed captions (or subtitles) available on almost 100% of the content. If available, closed captions and AD can be activated using the languages icon in the bottom right hand corner of the screen once you begin playing a video. Alternatively, all AD content is accessible via a link at the bottom of the Netflix site (<https://www.netflix.com/browse/audio-description>) and available subtitles are listed via language according to your already entered preferences ([netflix.com/subtitles](https://www.netflix.com/subtitles)). Netflix also offers the option to adjust the appearance of subtitles and captions. These high levels of captioning are the result of two developments in the USA – the introduction of legislation such as the CVAA – which introduced a mandate to progressively increase captions on online video – and the advocacy of audiences who are Deaf or hard of hearing (Media Access Australia 2015). In addition, AD became available on original programming on Netflix on 14 April 2015, less than one month after its Australian launch (Wright 2015).

Prior to April 2015, the establishment of the ANP by Robert Kingett in the USA had provided a consistent dialogue about the service's (in)accessibility (Katie 2014) in that country and worldwide. Kingett had also queried whether the company would maintain (or extend) its accessibility policies in Australia and New Zealand (Kingett 2014b). The ANP has offered commentary on the absence of AD available on Netflix and other USA-based subscription VOD services. Traversing a number of social media spaces, the group aims to encourage Netflix to improve accessibility for PWD (Kingett 2014a). While the ANP continues its mission to make digital content more accessible, the introduction of AD on Netflix was seen as a very positive move – the ANP has a page dedicated to Australian audiences with information about how to find out about accessibility (see Kingett 2015b).

However, despite these welcome advances in streaming, Netflix Australia is still seen to be behind others in regards to open accessibility. Unlike Foxtel (and Presto), the Netflix Australia website does not offer a 'Community' or 'Forum' page. Instead, support questions are streamlined through a FAQ page, 'Live chat' and keyword-led Help page. In addition, their Facebook page does not allow posts to the timeline. This restricts customers' ability to post questions and complaints, thus also restricting the avenues for PWD to voice concerns or connect with other customers with disabilities.

Comments on Twitter and Facebook about Netflix Australia associated with access for PWD were, however, generally positive, with customers voicing approval of the company's commitment to providing closed captioning for almost all content and AD for selected content. Whilst these provisions may indicate the company is attuned to PWD and current disability legislation, it is also likely to have been influenced by legal cases brought against the company in the USA in recent years. Some comments on social media, however, have indicated dissatisfaction with the difference in content available on Netflix Australia compared to the USA and UK.

## Presto Entertainment

Presto launched as a feature film streaming service on 13 March 2014. Presto TV launched in January 2015, with a bundled film and television service – Presto Entertainment – launching at the same time. Presto is a joint venture between Foxtel and Seven West Media and features some streaming content from Foxtel as well as other sources. Subscriptions are monthly and can be cancelled at any time. Presto can be accessed via an internet-connected device capable of running a web browser or a Presto app such as any Windows PC or Mac computer; selected Samsung smart TV models and Sony Android TV models; iOS smartphones and tablets; Android tablets and smartphones; Telstra TV, Nexus Media Player and Telstra T-Box; PlayStation 3 or 4 gaming console; Chromecast; or AppleTV with Airplay.

Despite offering content previously screened on broadcast television such as Foxtel and Channel 7, Presto launched without captions in place. According to their FAQs:

*Closed captions are not currently available on Presto. Presto acknowledges the demand for closed captions and we are committed and working hard towards providing this feature for Presto customers in the future. There are many complexities with implementing this functionality, including the technical solutions required to ensure that closed captions are available across the broad range of devices and applications on which our customers currently enjoy Presto. While we're discussing methods of overcoming these challenges, we do not yet have an estimated time of arrival for closed captioning on Presto (Presto admin 2016).*

Consumers have complained regarding the lack of captions on both Presto's community pages and on social media broadly. While Presto continues to promise the eventual introduction of captions, there is no timeline in place.

## Quickflix

Quickflix began as a DVD mail order service in 2003, then became a streaming service in 2011. Prior to the introduction of Stan, Presto and Netflix Australia in 2014 and 2015, Quickflix dominated the Australian subscription VOD landscape. However, by April 2016, the *West Australian* reported that Quickflix shares were trading at just 0.1 cents due to the competition the company had suffered from these new entrants to the subscription VOD landscape, particularly Stan (Sas & Smith 2016).

The Quickflix video streaming service can consist of either a subscription service or a premium pay-as-you-go service. Physical discs, such as blu-ray and DVD titles, also continue to be available for rent. Quickflix can be streamed on a number of internet-enabled devices capable of hosting a web browser or Quickflix app, including smart TVs; game consoles; PCs / Macs; smartphones / tablets; or casting devices such as Chromecast.

However, despite its wide platform accessibility, there are some issues for customers with disabilities. The Quickflix website and apps are not entirely W3C compliant, meaning some users are likely to experience difficulties in finding and playing video content with their assistive technologies. Further, research conducted in 2014 revealed the service did not even have an accessibility policy; however, their FAQ did make reference to captions:

*Our aim is to offer subtitles on as much content as possible. If content with subtitles is provided to us from the studios, we will certainly make these available for our members. Our future plans involve*

*providing as much content with subtitles as possible, on as many devices as we can (cited in Ellis 2015).*

This response remains consistent with Quickflix's website as of June 2015. The company continue to offer the same distributor-led commitment to accessibility rather than making it an issue for Quickflix itself to solve, as their FAQs regarding captions repeat the same quote from 2014; "If content with subtitles is provided to us from the studios, we will certainly make these available for our members on those titles." This idea is supported by analysis of the service's Facebook page which suggests consumers have been raising the issue of captioning availability in excess of two years (Facebook user 2013a).

### Foxtel Play

Foxtel Play, is a subscription VOD service provider that allows consumers to watch video entertainment online. The service is operated by Foxtel, Australia's largest pay television provider. The content is largely a selection of videos aired on Foxtel's pay television service. Foxtel Play can be accessed via smart TVs; computers; X-box; PlayStation; tablets; or smartphones.

As a pay television service, Foxtel is subject to certain captioning requirements for broadcast content; however, these vary according to genre and Foxtel has successfully argued for exemptions in previous years (Ellis 2014b). Captions are not 'required' and are therefore not available via their on demand service – nor is AD. Foxtel markets some content, such as *Game of Thrones*, as available at the same time as the USA. However, captions are not available during these first run programs, typically being offered for repeat screenings seven hours later. Consumers who are Deaf and hard of hearing therefore argue they are not being given an equivalent service, despite paying the same amount in subscription fees as their non-disabled peers (Ellis 2014a).

These concerns are reflected in comments on the company's website. While Foxtel Play and all Foxtel services are covered in the website 'Community' forum, the questions raised across the forum were of interest in relation to the access legislation Foxtel broadcasting is bound by. For example, while the company states that closed captioning is part of its service, this does not apply to all content, and especially not VOD. This legal requirement under the *DDA* to provide closed captioning was raised in the Foxtel Twitter page, with customers highlighting that closed captioning for content was inconsistently applied, lagged behind, and not provided for online content (Twitter users 2016; @FOXTEL\_Help 2015).

Other questions raised in the forum included queries over the inconsistent application of closed captioning (Foxtel community member 2015a) and the quality / timing of captions (Foxtel community member 2014d). This idea regarding inconsistency of use of closed captioning – especially across Foxtel's other services such as the Go App and Play and including the justification of the lack of closed captioning on these services as "technical reasons" – was further challenged by customers, who noted that other companies and similar services (BBC app and ABC iview) had these capabilities (Facebook user 2013b). In this particular conversation, the individual who asked the question originally and prompted a conversation amongst users, noted he was still waiting for a response from Foxtel 2 years later.

The ease of access for PWDs – including those with intellectual disabilities (Foxtel community member 2015b) and visual impairments (Foxtel community member 2014a) – was also raised

multiple times, and responses by the forum moderator were inconsistent. For example, the ability to give consent to obtain a service was a question raised but answered instead by a fellow consumer (Foxtel community member 2014c). The cost of the services and add-on costs of the technology required to run the products for those on a disability pension was also raised (Foxtel community member 2014b).

### **Content analysis on social media: Whirlpool thread**

This research has shown that, for those with a disability, or with friends/family members with a disability, the lack of accessibility of VOD services and the responses by the service companies themselves, is confusing, frustrating and disappointing. Further evidence of this can be seen in discussions on a Whirlpool thread (Whirlpool forum 2015) in September 2015, which captured the types of issues and debates surrounding the accessibility of VOD services.

The initial Whirlpool post reflected on the response by Stan and Presto to a complaint about the lack of captioning on these services. The complaint highlighted the lack of available captioning and the length of the delay in implementation, which, in the case of Presto, was over 2.5 years from when the company claimed they were “working on” introducing captioning for their content.

Responses to this post were illuminating, building on the issues raised in our research. While our research gathered individual responses to VOD services and accessibility, the nature of the Whirlpool forum and the discourse it facilitates captured the interactions between users – both with and without accessibility concerns. In particular, users debated the perceived reasons for the inaccessibility of VOD services – the business rationale behind the inclusion; the lack of legal and political intervention in ensuring companies caption content (and the need to highlight this, as consumers); and the social or moral obligation of accessibility. The discussion queries whether it was a bad or a good business decision to provide for all possible new customers or whether the loss of sales – for example to those with hearing impairments – would be fairly negligible for a large company. Users highlighted that in the short-term this exclusion may be justifiable, but in the long-term the company’s decision might “hit their sales (for example subscription numbers), their reputation, and their viability”. As an example, users also questioned whether the size of Netflix’s customer base was reflective of their inclusion of captions and AD, and whether this was the reason for it out-performing its competitors.

However, there are clear retorts to these concerns – some users in the Whirlpool thread argue that access to VOD is “not a necessity” for the hearing impaired, that the lack of accessibility is a rational “business decision” (reflecting on the expense of implementing the captions for relatively small consumer base) or that the consumer had the option of multiple providers and therefore had the “power” of consumer choice. Likewise, it was argued that the consumer had the responsibility to complain, either to the company or to representative bodies – for example the government or the Australian Communications and Media Authority (ACMA). The question of whether people with a disability were entitled to equal access, and to what services, remains as an underlying issue to the provision of accessibility.



## Hardware: accessibility of devices

VOD is changing the way we watch television, both in terms of content and the technology we use to access it. VOD can be accessed via any internet enabled device, but most often these include smart TVs; game consoles; streaming media players; smartphones or tablets; or desktop or laptop computers. While tablets are increasing in popularity due to their small size, portability and propensity to personalise (McCreery & Krugman 2015), smart TVs and casting options such as Chromecast – which plugs into the back of a television set via an HDMI port and wirelessly connects the television to the user’s laptop and mobile devices, allowing users to ‘cast’ or mirror content from these devices to the television screen – are also popular options, as is the laptop or desktop computer. Research by Screen Australia shows 24% of people watch VOD via a tablet (Screen Australia 2014). Significantly, in the current study this figure increases to 53.03%, and 40.91% use a smartphone compared to Screen Australia’s 10%. As Katie Ellis has previously argued:

*As the television experience becomes increasingly individualised with streaming television, these specific access requirements of individual viewers can potentially be enabled as ‘preferences’ through the affordances of digital broadband televisions (Ellis 2015).*

While this research has focused predominantly on the accessibility of VOD content via the provision of captions and AD, that is only one side of the story. The hardware used to access VOD must also be accessible to users with disability. For example, users wanting to turn on AD also require AD electronic program guides (Utray et al. 2012).

Analysis of the accessibility policies of a selection of these devices reveal a strong commitment to accessibility. As reflected in the table outlining accessibility policies and accessible features in Appendix 1, each includes accessibility features such as screen readers, magnification and dictation as mainstream options. According to W3C member and Australian digital accessibility expert Scott Hollier, there are several reasons for this high integration of accessibility into design including the impacts of legislation, user-generated content, the uptake of mobile devices and competition in the marketplace (Hollier 2013). This commitment to accessibility – both in policy and design – for the VOD market holds great potential for PWD to be recognised as audiences, users and consumers.



## Part 2: Legislation and policies affecting television and video on demand

### Australian legislation

#### Broadcast television

Three main policies apply to television accessibility in Australia:

- *Commercial Television Industry Code of Practice 2010*
- Captioning regulation under the *BSA (1992)*.
- Section 24 of the *DDA (1992)*

However, these regulations relate almost exclusively to the provision of captions and do not address AD. There are currently no policies which require either free-to-air nor subscription television to provide AD on Australian television. Despite trials by the ABC in both 2012 (broadcast television) and 2015 (iview) as well as campaigns from accessibility advocates for providers to provide AD as a way to comply with the *DDA*, both free-to-air and subscription providers have limited and inconsistent application of AD. A motion was made by Senator Siewert (September 2015) to, “amend the *Broadcasting Services Act 1992* to include requirements for the provision of AD on free to air and subscription television programs by the ABC and all other networks, similar to captioning requirements” (Siewert 2015). Senator Fifield added that an AD trial was currently underway with ABC’s iview, due to be completed in 2016 and a report would be made available on the outcome of the trial (Fifield 2015).

#### *Commercial Television Industry Code of Practice 2010*

The *Commercial Television Industry Code of Practice 2010* stipulates that closed captioning is clearly indicated, monitored and provided in emergency broadcasts (see Figure 3). They also regulate the portrayal of disability, and require providers to provide an accessible complaints and feedback policy (ACMA 2010).

#### *BSA (1992)*

The *Broadcasting Services Act 1992* (see Figure 4) is the legislation which governs accessibility requirements on broadcast television and gives authority to ACMA to issue broadcasting licences on the basis of certain criteria and obligations. The *BSA* also gives ACMA the authority to develop and enforce captioning guidelines which then must be followed by Australian broadcasters.

**Codes of Practice 2010 Commercial TV (Captions – part 1.24)**

**Closed Captioning for Hearing Impaired and Deaf People**

1.24 Licensees will:

1.24.1 ensure that closed captioning is clearly indicated in station program guides, in press advertising, in program promotions and at the start of the program;

1.24.2 exercise due care in broadcasting closed captioning, and ensure that there are adequate procedures for monitoring closed captioning transmissions;

1.24.3 provide adequate advice to hearing impaired viewers if scheduled closed captioning cannot be transmitted. If technical problems prevent this advice being provided in closed captioned form, it must be open captioned as soon as reasonably practicable;

1.24.4 when broadcasting emergency, disaster or safety announcements, provide the essential information visually, whenever practicable. This should include relevant contact numbers for further information (ACMA 2010).

**Figure 3. Codes of practice for commercial television (captions)**

**Part 9D of Broadcasting Services Act**

*Broadcasters must comply with rules and standards relating to captioning of television programs for the deaf and hearing impaired.”*

**Captioning obligations (Broadcast) - basic rule**

*“Basic rule*

*(1) Each commercial television broadcasting licensee, and each national broadcaster, must provide a captioning service for:*

*(a) television programs transmitted during designated viewing hours; and*

*(b) television news or current affairs programs transmitted outside designated viewing hours.”*

**(Subscription)**

*“(1) If a subscription television licensee provides a subscription television service in a financial year, the licensee must ensure that the percentage worked out using the following formula is not less than the annual captioning target for the service for the financial year: (Total captioned hours / total program hours) X 100”*

**Captioning Standards**

*(2) For the purposes of subsection (1), **quality** includes:*

*(a) readability; and*

*(b) comprehensibility; and*

*(c) accuracy (Australian Government 1992a)*

**Figure 4. Part 9D of BSA**

Under a 2012 update to the captioning requirements of the BSA, all free-to-air channels had to provide closed captions on 100% content between 6am and midnight by 2015 (Media Access Australia 2013). The requirement is regulated by the statutory body ACMA. In addition to captioning quotas, ACMA also enforces caption quality and consistency. Subscription television is also subject to mandatory caption quotas, but these vary according to genre and providers are not required to caption 100% of content. ACMA initiated a review of the Television Captioning Standards in December 2015 and made recommendations in March 2016. The review considered the differences between “‘live’, ‘part-live’ (programs including live and pre-recorded material) and pre-recorded programs, and how these affect the quality of television captions” (ACMA 2016). Following consultation with the public and broadcasters as well as a review of international standards, ACMA upheld its existing captioning standards (ACMA 2016).

#### *DDA (1992)*

Under the *DDA*, discrimination against PWD is unlawful – PWD must have access to goods and services unless provision of this access causes an unjustifiable hardship (Australian Government 1992b). These goods and services include broadcast television, and the *DDA* works in conjunction with the *BSA* to ensure captions are delivered on broadcast television, although exemptions are often allowed (Ellis 2014b). In 2013 a coalition of people with vision impairments lodged *DDA* complaints against the Australian public broadcaster (the ABC) and the Australian government for failing to provide AD (Madson 2013) (Figure 5).

#### ***Disability Discrimination Act 1992 – Sect 24***

##### ***Goods, services and facilities***

*It is unlawful for a person who, whether for payment or not, provides goods or services, or makes facilities available, to discriminate against another person on the ground of the other person’s disability:*

*(a) by refusing to provide the other person with those goods or services or to make those facilities available to the other person; or*

*(b) in the terms or conditions on which the first-mentioned person provides the other person with those goods or services or makes those facilities available to the other person; or*

*(c) in the manner in which the first-mentioned person provides the other person with those goods or services or makes those facilities available to the other person (Australian Government 1992c)*

**Figure 5. Section 24 of DDA**

#### **VOD**

VOD providers in Australia are currently not subject to any legislation that ensures accessibility, including the provision of captions. Because VOD occurs at the intersection between television and the web, television accessibility and web accessibility – specifically the W3C Web Accessibility Initiative (WAI) – should both be considered in understanding the breadth of applicable accessibility policies. Therefore Section 24 of the *DDA* (1992) is also relevant, stipulating “that people with disabilities have the same fundamental rights to access information and services as others in the community” (Australian Government 1992b). As an example, YouTube has introduced several accessibility measures (including compatibility with screen readers) and extensive captioning services (see YouTube 2016).

## Relevant international legislation

Australian legislation regarding television accessibility has traditionally been heavily influenced by international standards. For example, following the introduction of the *Television Decoder Circuitry Act* (1990) in the USA mandating that televisions with screens larger than 13 inches made or sold in the USA have an in-built closed caption decoder chip (Robson 2004), Australia also introduced captioning requirements on the importation of television sets into Australia (Ellis 2014b). Likewise, during the 2015-2016 review into captioning in Australia, ACMA reviewed Australian policy against international standards (ACMA 2016).

Our analysis of international policy regarding the accessibility of VOD has found a varied approach – from a complete absence of accessibility regulations (New Zealand), to a ‘layering’ of policy through disability discrimination Acts alongside new media laws (USA). Additionally, this need to address convergence and new media in media accessibility regulation is currently a subject being discussed at some government levels, primarily in the UK (ATVOD 2015). However, outside of the USA, there remains either a lack of accessibility policies for media, new or ‘old’ – as is the case in Singapore – or a lack of policies that facilitate accessibility for the VOD market – such as in Australia where a level of accessibility is required for broadcasters and subscription television but not VOD. Likewise, jurisdiction (whether national laws apply to international providers), and the uncertainty regarding who is responsible for the provision of such features as captioning and AD further undermines accessibility progress both in Australia and worldwide.

Several governing bodies or policies for VOD (for example ATVOD or OfCom in the UK) do not have any legal powers to enforce rules and regulations – they can only ‘encourage’ providers to be more accessible. Moreover, both the surveying of compliance and the enforcement of non-compliance continue to require direct involvement and/or complaints and litigation by advocacy groups, such as National Association of the Deaf (NAD) in the USA, rather than an official government body.

Areas of compliance are currently focused on closed captioning (and specifically the percentage captioned), but less so on the quality, consistency, identification of and timeliness of provision. AD is a service only just now being provided in some instances, and by only a few providers. Other disabilities are largely not acknowledged or recognised in the definition of ‘accessibility’ by VOD providers, even when a far broader definition of disability is applied in disability legislation.

The legislating of VOD providers’ responsibility to ensure accessibility for all users is currently a subject being ‘discussed’ at government levels, primarily in the UK. However, aside from the USA, there remains a lack of either accessibility policies for media – as is the case in Singapore (Baker & McKenzie 2012) – or a lack of policies to facilitate accessibility for the VOD market on an international level – for example, in the UK where a level of accessibility is required for broadcasters only. The challenges of convergence remains as VOD providers ‘sit’ on the boundaries of web and television accessibility requirements and expectations (ACMA 2014). Likewise, jurisdiction and whether national laws apply to international providers, and the “complexity of the VOD supply chain” – who is responsible for the provision of such features as captioning and AD – are key issues (RNIB, Sense & Action on Hearing Loss 2015). We discuss the legislative and regulatory climate of television in the USA and UK below.

## The USA

Relevant legislation in the USA includes the *Americans with Disabilities Act (ADA)* (1990) and the CVAA 2010.

The ADA's objectives are to provide "a clear and comprehensive national mandate for the elimination of discrimination" and "clear, strong, consistent, enforceable standards addressing discrimination" by reinstating a broad scope of protection to be available under the *ADA*. It has four titles which pertain to Employment, Public Services, Public Accommodations and Services Provided by Private Entities, and finally Miscellaneous (Unites States Code 1990). The CVAA, by comparison, addresses the specific issue of access to modern communications for PWD. The CVAA seeks to ensure that "accessibility laws enacted in the 1980s and 1990s are brought up to date with 21st century technologies, including new digital, broadband, and mobile innovations" (Federal Communications Commission 2010).

## The ADA

The *ADA* does not refer directly to VOD; however, with the increasing transition of goods and services to online platforms, the jurisdiction of title III 'Public Accommodations and Services Provided by Private Entities ' is being reinterpreted to include online spaces (Ellis 2015). According to title III of the *ADA*:

*Public accommodations must:*

- *Provide goods and services in an integrated setting, unless separate or different measures are necessary to ensure equal opportunity.*
- *Eliminate unnecessary eligibility standards or rules that deny individuals with disabilities an equal opportunity to enjoy the goods and services of a place of public accommodation.*
- *Make reasonable modifications in policies, practices, and procedures that deny equal access to individuals with disabilities, unless a fundamental alteration would result in the nature of the goods and services provided.*
- *Furnish auxiliary aids when necessary to ensure effective communication, unless an undue burden or fundamental alteration would result.*
- *Remove architectural and structural communication barriers in existing facilities where readily achievable.*
- *Provide readily achievable alternative measures when removal of barriers is not readily achievable.*
- *Provide equivalent transportation services and purchase accessible vehicles in certain circumstances.*
- *Maintain accessible features of facilities and equipment.*
- *Design and construct new facilities and, when undertaking alterations, alter existing facilities in accordance with the Americans with Disabilities Act Accessibility Guidelines issued by the Architectural and Transportation Barriers Compliance Board and incorporated in the final Department of Justice title III regulation (Department of Justice n.d).*

The disabilities covered by the *ADA* are wide ranging, including both physical and mental, and were expanded in 2008 to include psychological and emotional disabilities.

Disability advocates seeking more accessible VOD services have attempted prosecution under this Act with varying levels of success. In 2010 a case was brought against Netflix by the NAD who argued Netflix discriminated against those with a hearing impairment by not providing closed captions for all content. It was argued that though the company was not a “physical” place of public accommodation, that online businesses should be considered within this definition. Netflix settled out of court in 2012, agreeing to caption 100% of its content by 2014 (Mullin 2012; Wolford 2012). However, a federal appeals court later ruled that Netflix was not a “place of public accommodation” and therefore did not have to comply with the ruling (Hattem 2015).

### The CVAA

Although the ADA was intended to evolve with changing technology, there has been disagreement as to how the law should apply to online spaces (see Ellis 2015; McCullagh 2002; Wooten 2012; Goren 2012). Like the ADA, the CVAA is designed to be “forward thinking” and evolve with changing technologies (Varley 2013). According to title II of the CVAA – Video Programming:

- *Restores video description rules promulgated by the FCC in 2000 and authorizes some expansion of those obligations over the next 10+ years.*
- *Requires video programming that is closed captioned on TV to be closed captioned when distributed on the Internet (does not cover programs shown only on the Internet).*
- *Establishes deadlines for the FCC to respond to requests for exemption from the closed captioning rules.*
- *Requires video programming distributors, providers, and owners to convey emergency information in a manner that is accessible to people who are blind or visually impaired.*
- *Expands the requirement for video programming equipment (equipment that shows TV programs) to be capable of displaying closed captions, to devices with screens smaller than 13 inches (e.g., portable TVs, laptops, smart phones), and requires these devices to be able to pass through video descriptions and emergency information that is accessible to people who are blind or visually impaired, if technically feasible and achievable.*
- *Requires devices designed to record TV programs to pass through closed captions, video description, and emergency information so viewers are able to turn on/off the closed captions and video description when the TV program is played back, if achievable.*
- *Requires interconnection mechanisms (cables) to carry (from the source device to the consumer equipment – e.g., TV set) the information necessary to permit the display of closed captions and make video description and emergency information audible.*
- *Requires user controls for TVs and other video programming devices to be accessible to people who are blind or visually impaired, and requires TVs and other video programming devices to have a button, key, icon, or comparable mechanism designated for activating closed captioning and video description.*
- *Requires on-screen text menus and program guides displayed on TV by set-top boxes to be accessible to people who are blind or visually impaired and requires set-top boxes to have a button, key, icon, or comparable mechanism designated for activating closed captioning (when built-in to the set-top box) (Federal Communications Commission 2010).*

## The UK

In the UK context, both legislation and regulators play a role in the accessibility of television and VOD. While broadcast television, and not VOD, is subject to the accessibility requirements of the *Communications Act 2003*, VOD has been co-regulated for a number of years by ATVOD and OfCom. However, from December 2015, ATVOD ceased operations and VOD came under the purview of OfCom itself.

*The Communications Act 2003* superseded the *Telecommunications Act* of 1984 to update regulation in response to changing technology. While the Act refers to “the regulation of broadcasting and of the provision of television services” it does not specifically cover VOD. The Act is comprehensive and gives OfCom the authority to:

- (1) draw up, and from time to time to review and revise, a code giving guidance as to—
- (a) the extent to which the services to which this section applies should promote the understanding and enjoyment by—
- (i) persons who are deaf or hard of hearing,
- (ii) persons who are blind or partially-sighted, and
- (iii) persons with a dual sensory impairment,
- of the programmes to be included in such services; and
- (b) the means by which such understanding and enjoyment should be promoted
- (UK Government 2003).

There is no official legislation for OfCom. Current requirements are: “to encourage Service Providers to ensure that their services are progressively made more accessible to people with disabilities affecting their sight or hearing or both”. In 2014 it became “mandatory” for service providers to respond to queries and surveys of access services provisions. Further development of accessibility requirements are posed for 2016: “We will be consulting early in 2016 on what more we can do to encourage accessibility as required under section 368C(2) of the Act.” This is likely to include encouraging on demand service providers (ODPS) to make ODPS progressively more accessible for individuals with visual or hearing impairments (section 368C(2)). Further, while OfCom does not have any power to directly impose captioning quotas, it “encourages” provision of access.

## Content analysis of accessibility policies on selected international VODs

Subscription VOD, while relatively new to the Australian television landscape in 2015, has a longer history internationally. The issue of disability advocacy in relation to accessible features on VOD has also been a focus for a number of activists and consumers of VOD through movements such as the ANP and Twitter protests including #subtitleit. To get a sense of how the Australian VOD compared internationally we evaluated access features on Australian VOD against a selection of international offerings from the USA, UK, Europe and South East Asia.

Ten international VODs were selected on the basis of popularity and activist activity regarding their accessible features. The full details of the analysis are reproduced in Table 4 below. In summary:

- Closed captions are more available than AD.



- Captions, including crowd sourced or community led captions, are more available on VODs from Asia as a way to remove 'language and cultural barriers'.
- A number of fully accessible sites are becoming available.
- Aside from the 'fully accessible' sites, Netflix is the only one to offer AD.
- Talkingflix – a VOD that exclusively provided AD – failed when Netflix began offering AD.
- Activist activity does appear to have an impact, with Netflix introducing AD in response to online activist groups such as the ANP and improving captioning following Twitter led protests

The approach taken by Australian VOD therefore is consistent with what is happening internationally – limited AD, some distributor led captions and others offering captions as a matter of course. The move towards fully accessible sites such as Talkingflix and Zaga are also being replicated in Australia with the introduction of Disability Busters in 2016. However, while Disability Busters is captioned by default, they do not offer AD.

As a result of direct government intervention in VOD accessibility, global providers have demonstrated a mixed approach to accessibility. In South East Asia and India there is an absence of accessibility policies across major providers (iFlix, HOOQ and BIGFlix). In the UK and the USA, public pressure and the involvement of disability advocates – both at a public campaign level (such as #subtitleit and a change.org petition) as well as direct complaints to regulators – have seen a dramatic rise in the provision of closed captioning for all content. However, the provision of AD for content still lags considerably behind the achievements in closed captioning.

Two notable exceptions to the approach to accessibility by VOD providers are Viki (Singapore) and Zaga (Canada) (yet to be launched). Zaga has branded itself as “a fully accessible VOD service” and was established to provide an alternative to current VOD providers. Whether this service will be able to achieve the funding required to launch – a fact which ultimately lead to the failure of Talkingflix, an AD VOD service – is yet to be seen. Viki is based within a country which has no captioning policies or requirements for either broadcast television or VOD, yet has marketed itself as different from other VOD providers through the development of a captioning (or subtitling) community. While the purpose of this crowd-sourced captioning approach appears to be marketed more so as a global social networking feature – rather than an aim to provide captions for those with a hearing impairment – there are links to this 'additional' benefit through a Billion Words campaign and some (though limited) awareness by the Viki community itself of the benefit of captioning for accessibility. The Billion Words campaign was an online community captioning effort led by Deaf actress and activist Marlee Matlin which sought to caption one billion words on Viki in one year. They achieved their goal.



**Table 4. Accessibility on selected international VOD services**

VOD provider	Country	Accessibility policies / availability	W3C	Recent activist activity
Netflix	USA	AD and closed captions provided and can be customised	Member	Disability visibility project (Daredevil and AD); Netflix project; case brought against Netflix by Disability America
Amazon Prime	UK	“We currently have several features available to improve the Amazon experience for our customers with disabilities” (only feature listed is amazon.co.uk optimised for mobile devices). Some closed captioning options, not all content. Accessibility features (on Fire Tablet).	No	LOVEFiLM (rebranded or merged into Amazon Prime in 2014; LOVEFiLM ‘by post’ operates as a DVD rental service) – captions protest
Hulu	USA	None. Provide closed captioning when provided by the producer: “We currently receive closed captioning data and subtitles for some of our shows, and we are committed to expanding our library of closed captioned content.” Offers “closed caption support”.	No	ANP
Zaga	Canada	Created as a ‘fully accessible VOD service’. “A VOD service featuring movies and series with described video...”. Can be used with assistive technology. Includes descriptive video.	No	Founder/president is vision impaired.
Viki	Singapore	Created as a ‘collaborative’ VOD service that uses crowdsourced subtitling’: “Viki, a play on the words video and wiki, is the global television site where millions of people discover, watch and subtitle global primetime shows and movies in more than 200 languages. Together with its fans, Viki removes the language and cultural barriers that stand between great entertainment and fans everywhere.” However, the emphasis is on subtitling for other languages rather than for the hearing impaired.	No	Launched a Billion Words March “a campaign to champion access to online TV shows” <a href="http://blog.viki.com/2014/04/join-viki-and-marlee-matlin-on-billion.html">http://blog.viki.com/2014/04/join-viki-and-marlee-matlin-on-billion.html</a>
Talkingflix	Fully AD	Created as a fully AD site intended to solve a ‘global problem’. Talkingflix would licence AD tracks of existing movies which can be accessed by people with vision impairment to use in conjunction with other VODs		An AD VOD service that failed in 2014 (website is now down).
iFlix	SEA – Malaysia-based, Philippines and Thailand	None. They do provide some subtitles, but this is aimed at addressing the multiple languages spoken in the countries it provides content to, rather than those with a hearing impairment (see <a href="https://www.facebook.com/iflix.letsplay/posts/698261540307832">https://www.facebook.com/iflix.letsplay/posts/698261540307832</a> ). There is no reference to closed captions, disability, deafness, hearing impairment etc on their site.	No	
HOOQ	The Philippines,	Some content is subtitled. There is no reference to closed captions,	No	

VOD provider	Country	Accessibility policies / availability	W3C	Recent activist activity
	Thailand, and India	disability, deafness, hearing impairment etc on their site.		
BIGFlix	India	“Movies on Demand online streaming service in Hindi, English, Tamil, Telugu, Malayalam and multiple regional languages.” English movie content is subtitled. There is no reference to closed captions, disability, deafness, hearing impairment etc on their site.	No	
EuroVoD	Europe	“EuroVoD is a network of independent European Video on Demand platforms specialising in art-house films and independent cinema.” There is no overriding policy of disability or closed captioning. Members include UniversCine (France), UniversCine (Belgium), Flimmit (Austria), Filmin (Spain), Volta (Ireland), Lekino.ch (Switzerland), Netcinema.bg (Bulgaria), Distrify (UK)		

## Part 3: Survey and interviews: Findings and discussion

This section reports the findings of and offers discussion on the results of the survey and interview stages of the research project. It is concerned with the demographics of the survey cohort, the barriers to accessibility to the internet and VOD services, the participants' 'freedom' of choice of provider, their preferred hardware, their use of assistive technologies and aids to facilitate access as well as the availability of these accessibility features, and their need for assistance with set-up. Respondents were also asked to determine any key issues with regards to accessibility to VOD services. Three were cited – a lack of availability of accessibility features such as captions and AD, reduced useability for PWD and unreliable internet connections. Finally, the future of VOD in Australia from a disability perspective was discussed.

A total of 173 respondents started the survey – 145 completed it, resulting in a response rate of nearly 84%. Of these 173 respondents to the survey, 78.6% had a disability. For the purpose of this study, we only included the respondents with disabilities for data analysis. We also excluded responses from people under 18 or who resided outside of Australia.

A further 14 people participated in interviews, 12 of whom were initial survey respondents who agreed to participate in follow-up interviews. We also interviewed two experts in the area of disability access to VOD. Firstly, Chris Mikul – from MAA and the author of the report *Access On Demand* – was uniquely positioned to give us a snapshot of the current level of accessibility on both broadcast and VOD in Australia. Secondly, Robert Kingett – founder of the ANP – was also invited to give an advocate's perspective, with a particular focus on how Netflix introduced AD following the advocacy efforts of the ANP.

### Summary of respondents' views on video on demand services

In summary:

- When asked to define their disability, the majority of respondents classed themselves as having hearing impairments.
- The main barriers to accessibility were cited as cost of the VOD service itself and the cost and reliability of internet connection.
- Netflix Australia was cited as the most accessible service.
- The majority of respondents said they accessed VOD via a tablet such as an iPad.
- Respondents took an impairment-specific approach to VOD with people with vision impairment more likely to access VOD via an iPad or smartphone and people with intellectual disability most likely to use a smart TV.
- There was no 'one size fits all' answer to accessibility – different people used different features and aids in different combinations dependent on their needs.
- Similarly, different providers offered different accessibility features on different programs.
- Some respondents cited frustration with integrating their required assistive aid with the VOD service, for example screen readers.
- Respondents noted that they liked the choice and freedom offered by VOD but not its limitations such as difficult set-up.

- The results showed that PWD experience both the same issues the broader population report in relation to VOD (for example geoblocking or unreliable internet connectivity) yet also those specific to disability (absent or inconsistent accessibility).
- Respondents claimed that VOD services (and television broadly) would only become more accessible in the future as a result of both legislation and the activism of PWD.

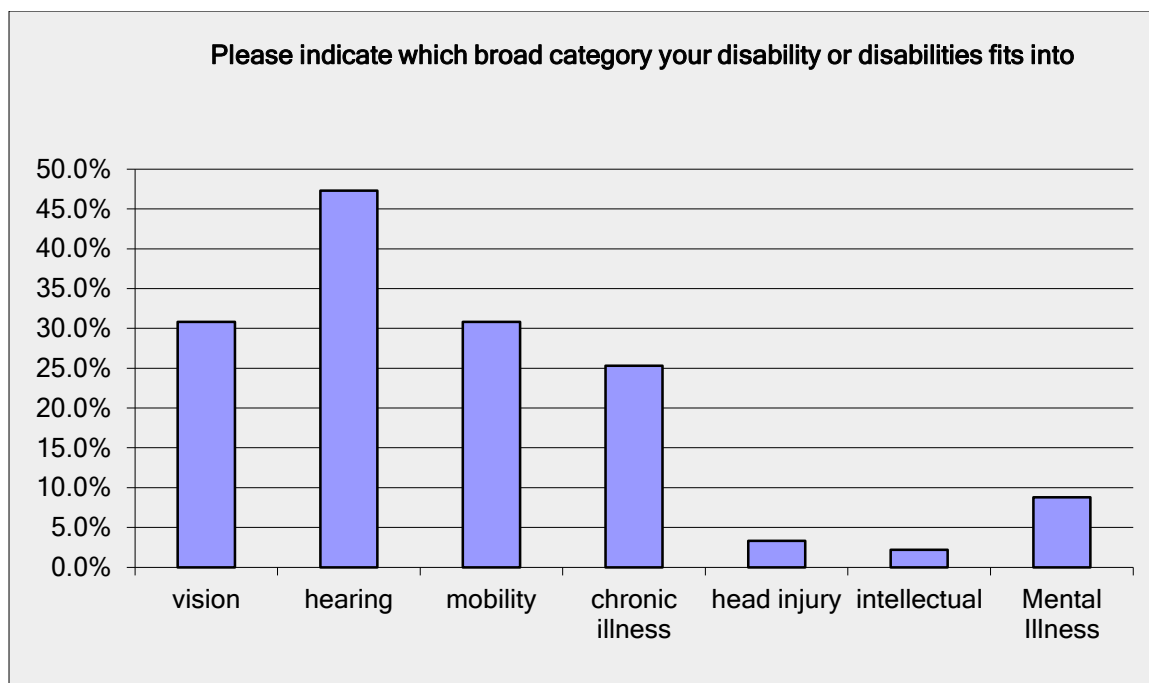
## Demographics

The aim of the research was to capture the experiences of people with a broad range of disabilities including those with vision impairment, hearing loss, mobility disability, head injury, intellectual disability, and mental and chronic illness. In summary (see Figure 6):

- 47% of survey respondents had a hearing impairment,
- 31% had a vision impairment,
- 31% had a mobility impairment,
- 25% had a chronic illness,
- 9% had a mental illness,
- 3% had a head injury and
- 2% had an intellectual disability.

Significantly, multiple respondents were listed as having more than one disability, which accounts for the respondent numbers totalling more than 100%. As previously mentioned, people with different impairments require different, at times contradictory, accessibility features. It is particularly important to note the existence of comorbidity in research addressing the access requirements of PWD, as one survey respondent explains:

*One category is inadequate to describe the diverse and varying nature of my disabilities, caused by several serious long term medical conditions and side-effects of some long term medications.*



**Figure 6. Respondents' category of disability**

Respondent ages ranged from 18 to 65 and over. Most respondents fell into the 25–34 or 45–54 age bracket (both groups representing 23% of the survey sample). Less than 6% of the sample were between the ages of 18 and 24, which may have been indicative of the ages of the target organisations' client base. The majority, 63%, of the sample were female, and 36% were male, with the remaining not selecting a gender category.

### Barriers to accessibility

Not all survey participants used VOD services – in fact, 40% stated they did not, and a further 11% cited that they had wanted to but could not. This was due to a number of reasons including cost of the VOD service itself and the cost of and reliable access to an internet connection.

With regards to cost, 36% respondents who did not use VOD cited cost as a reason for not using these services:

*Costs too much. I know this isn't the type of accessibility you were aiming at researching but considering the poverty levels of many/most Australian PWD it's probably a very relevant one.*

The lack of reliable, efficient and cost-effective internet services is also identified as a key component of the expense of VOD:

*Accessibility of on demand video requires reliable broadband through phone lines and mobile streaming is very expensive. We need a solution to provision adequate broadband into the home before we can even access such on demand video services.*

*Accessibility to me is not so much the features, but rather to ability to have reliable internet that can handle streaming videos online.*

*I am on a broadband plan that has a monthly limit on data downloads. [...] VoD chews up & swallows my monthly internet quota. Once the quota is used up, I go back to dial-up speeds and VoD is not possible.*

This need for a good internet connection is recognised within the Australian context, particularly because the introduction of subscription VOD throughout Australia has seen the emergence of a new 'prime time' between 9pm and midnight (Stephens 2015). The increased strain on internet services as a result of VOD impacts on people's perceived quality of VOD (Screen Australia 2014). As previously mentioned, VOD is often marketed as a particularly accessible form of television and video entertainment. For example, Screen Australia describe VOD as "accessible to everyone with an internet connection" (Screen Australia 2014). However, the survey respondents indicate this is not necessarily the case. VOD requires a particular type of internet connection, one that was out of reach financially for a number of this group.

### Choice of provider

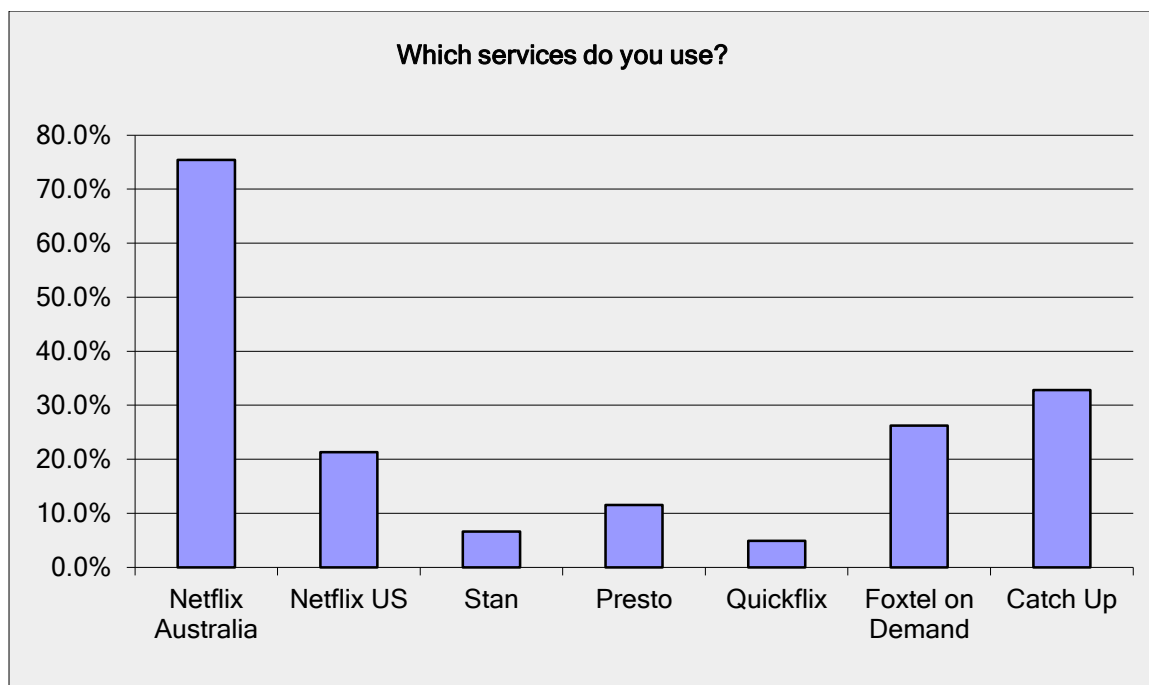
Of the 52% that did use VOD, the majority (75%) used Netflix Australia or Netflix US (21%) – aligning with the accessibility features of the service. Catch-up services (such as ABC iview) were the next most popular services, used by 33% of respondents. Foxtel Play was used by 26%, Presto 11%, Stan 7% and Quickflix 5%. This finding shows that, like the general population, PWD use a number of services. Indeed, the choice of provider was not always based purely on accessibility – convenience and the range of content offered were both cited as reasons for using VOD:

*I like video on demand because I get to see shows and movies when it suits me, and not when the TV channels want me to watch them.*

*I love them – they give me more options (though the Australian services definitely need to get more content), allow me to pause a show & come back to it later and allow me to choose what time I watch things. They have improved my quality of life by providing me with a guaranteed source of entertainment & distraction.*

These findings align with Screen Australia's research regarding the general population, namely that people choose VOD over broadcast television because of the freedom this format offers in terms of watching what you want whenever you want to. Sometimes this 'freedom' is compromised – consumers of Australian VOD often complain about the limited content on Netflix Australia compared to the international offerings of Netflix (Tucker 2015).

However, in this context, it should be noted that sometimes the 'freedom' of choice is compromised by accessibility – significantly, with the exception of Quickflix, the popularity of the services amongst this survey's PWD respondents aligns with the amount of accessibility of each service at the time of the survey (see Figure 7). For example, although Stan has since introduced closed captions, they were not available at the time of the survey, making them a less popular choice. Tellingly, when interviewees were asked whether their choice of provider was related to accessibility, only two interviewees stated their choice of the VOD service was *not* related to their accessibility.



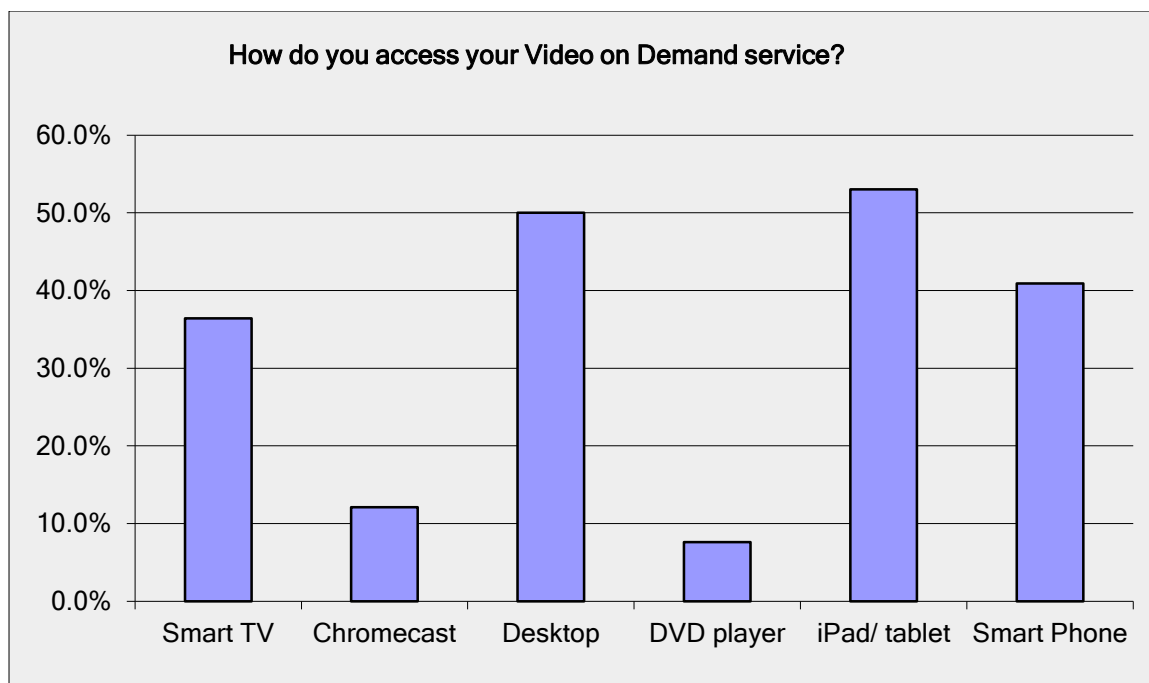
**Figure 7. Services used by respondents**

### Preferred hardware

The methods for accessing these services were varied. Many respondents used multiple devices – 53% used an iPad or tablet, 50% used a desktop computer, 40% used their smartphone and 36% used a smart TV. Less popular were Chromecast (12%) and DVD players (8%). A further three respondents commented that they used PlayStation or Xbox devices, and four commented that they used Apple TV (see Figure 8).

As discussed earlier in this report, the hardware used to access VOD is adopting a greater focus on accessibility. This is particularly the case regarding the concept of ‘out of the box’ accessibility, meaning PWD can buy the same equipment as everybody else but personalise it in such a way to account for the impacts of their impairments.

The hardware chosen also sometimes reflected the disability of the respondent (see Table 5 at the end of section). Although a small number of total respondents, significantly, 100% of respondents with intellectual disability accessed VOD via a smart TV whereas people with mobility impairment and mental illness were more likely to use a desktop computer and those with vision and hearing impairments most often used tablets such as an iPad. In fact people with vision impairment were as equally likely to access VOD using either an iPad/ tablet or a smartphone (54.5%).



**Figure 8. Respondents' access methods**

### Use of assistive technologies and aids

Beyond the hardware used for access, 40% of respondents cited using some sort of assistive technology when using VOD services. We asked respondents to reflect on how they used these assistive technologies to access both the internet and television, with the premise that accessing VOD often required users to combine features for both. Beyond the categories listed – screen reader, magnifier, keyboard or Braille display – respondents additionally listed a range of aids used including smartphones, in-built browser zoom, specialised mouse, dictation software, large print/text zoom, colour inversion, screen dimmers, high contrast, onscreen keyboard and a 'combination' of hardware and software. The most commonly used was a screen reader (22%), while others used a magnifier (10%), keyboard (15%) or Braille display (2%):

*[I use] screen readers on all devices. voice over on the apple ones and NVDA 2016.1, JAWS for windows 17 latest build March 2016, and Window Eyes for office 9.4.*

*Combination of Zoom and specialised hardware to replace keyboard/mouse and software such as Dwell Click.*

*We only watch ABC, and only really through ABC iView. For this, I can only watch it on my Surface Pro laptop. Closed Captions are only available on imported British content, not any Australian content. ABC iView, like Netflix, also has quite small buttons/icons/internal links, which can make it hard to use when my fingers are not working properly, and I am trying to use the interface rather clumsily with the back of my hands.*

While these responses show that users of VOD and the internet generally are aware of and use assistive technologies, respondents to this survey and follow-up interviews also had advice for the providers of VOD regarding what *they* should be doing to make their services more accessible. When



survey respondents were asked about what service providers could do to assist in making television easier to access, most cited closed captions (62%) as a key feature. AD (27%) and spoken subtitles (27%) were also popular aids, as were talking menus (25%), large or colour-coded remote control keys (19%), clean audio (18%) and signing (12%) (see Table 6 at the end of the section). This will be discussed further in the next section regarding availability of accessibility features offered by VOD providers.

When broken down into impairment-specific needs, it is clear that people with vision impairments require AD, while those with hearing impairments cite captions. Outside of these two impairment-specific access needs, closed captions are favoured by the majority of respondents with a variety of impairments as are large or colour coded remote controls.

Accessibility is not a 'one-size-fits-all' solution, a range of features is often needed to facilitate access for PWD. This was confirmed in our interviews, with several interviewees citing that they used multiple accessibility features (e.g. closed captions or spoken text), software (such as JAWs) and specific hardware (such as smart TVs) in order to access television or the internet. As one interview subject with a hearing impairment explained:

*[I use] Captioning. I have used a loop system for television in the past however new developments with cochlear implants have not supported this and I had to abandon this technology. I now use a separate program on my processor which helps to provide clarity when watching TV though it is not as good as the old loop system was.*

Another interviewee provided an in-depth description of the limitations that assistive technology have (in this example, screen readers) in providing full accessibility. He highlighted that creators of platforms and content may not recognise how this technology 'uses' online content:

*I use the three computer systems and multiple screen readers to overcome problems using the internet in general. The whole idea of VOD services as a specific problem for me is irrelevant because the same problems plague my use of VOD services as using the internet in general. For example poorly designed web pages with too much clutter. Some web pages are not designed properly using proper html coding. Today there is a lot of use of these quick and dirty web editors that mean that any fool can publish stuff on the net without understanding how to properly code the pages to work [and] screen readers use the underlying code and alt text for graphics to make a web page structurally useful for the blind.*

This quote aligns with the argument put forward by Robert Kingett, who, in our interview with him, advocated for the employment of PWD in media companies to help design and test accessibility on platforms. As Kingett explained:

*If companies want to learn about accessibility, or have someone who will really care so they don't have to, then actually go out and hire a disabled department leader to lead the audio description team, accessibility design team, or otherwise. Even if you don't care about accessibility, at least make it to where other people can care on your behalf.*

Such accessibility experts are a must Kingett went on to explain, particularly with the rapid updating of software updates often superseding any accessibility measures already in place:

*They need to have accessibility experts on their team to make sure [non visual desktop access] can read their website, to make sure that the audio description track will, indeed, make it onto the feature or otherwise if it is produced. They need to have accessibility testers on staff to make sure all buttons on their app are labelled. [...] I will applaud them for taking steps but there's more work that needs to be done.*

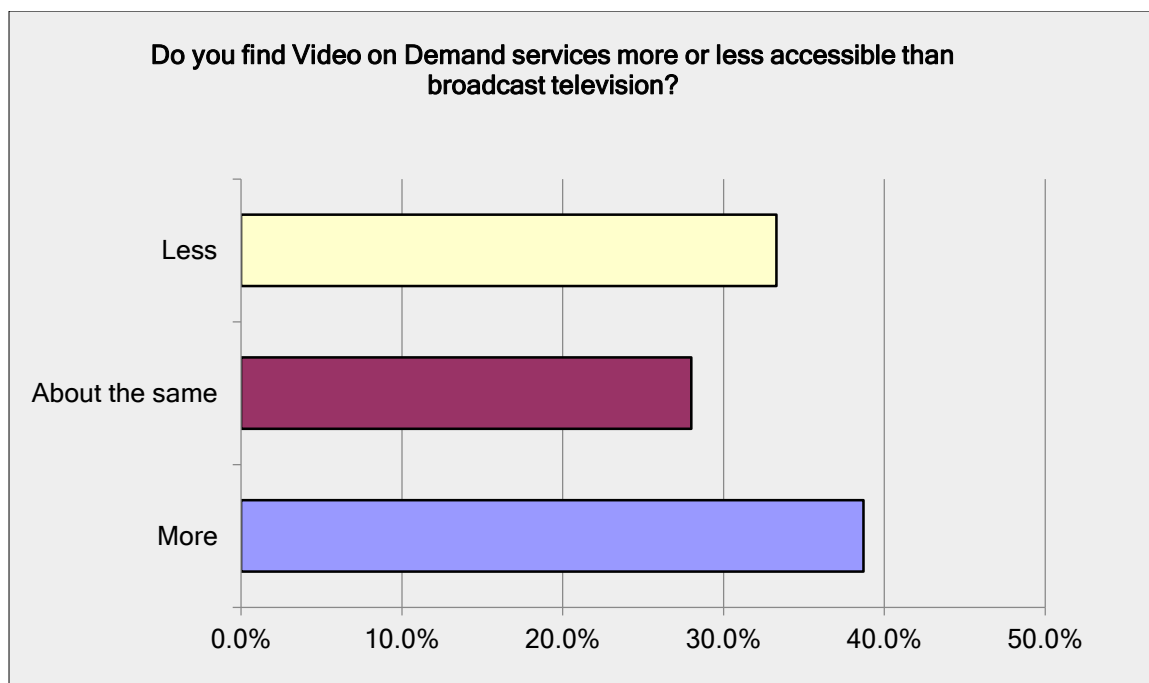
### Availability of assistive technologies and aids

When asked about the availability of accessibility features on VOD, 20% of respondents stated these features were present on their choice of VOD service, 33% stated it was “sometimes available”, and 14% said it was not available.

A further 34% of respondents stated they “did not know” if accessibility features were available on VOD. This figure suggests that the marketing and communication of accessibility features by service providers is lacking – compounded by the inconsistent application of such features (such as closed captions) both across and within (e.g. applied only to some content) VOD services. Stan, who brought in closed captions without an announcement earlier this year, exemplified this. There is also inconsistency in how this information is communicated which can result in confusion. For example, closed captions and AD are accessed in the language option in Netflix which can appear at either the bottom (desktop) or top (tablet) of the screen depending on the device used to access it. Similarly, captions on Stan and Quickflix captions are enabled in different ways.

In comparing VOD and broadcast television, although 39% found VOD to be more accessible (39%), 28% stated it was “about the same” and 33% stated it was less accessible (see Figure 9). As previously mentioned, broadcast television, although bound by certain accessibility legislation, is not required to offer AD. In his interview for this research Chris Mikul described this as “shocking in a world context”. In this sense, the absence of AD and inconsistent deployment and quality of captions on VOD is not significantly different from broadcast television (see Table 7 at the end of the section).

While confusion exists as to the availability of these features on VOD, the impairment-specific break down shows that for the most part people see accessibility on VOD as largely being a case of “sometimes available”. However, for people with vision impairments accessibility is more often “sometimes available” than “available” or “unavailable”. People with hearing impairments acknowledge accessibility as more often “available” than either “sometimes available” or “unavailable”. Again, this reflects the current state of accessibility on Australian subscription VOD, with AD being available on only a selection of one provider’s content and closed captions being more often available but inconsistently deployed.



**Figure 9. Respondents’ comparison of accessibility between VOD and broadcast television**

When asked to compare VOD accessibility to the accessibility of broadcast television, response was influenced by the use of multiple services, for example several respondents identified that while one service (predominantly Netflix) was “more accessible”, others used were not:

*Netflix has been excellent in providing closed captions, and far better than what is currently available for free-to-air (FTA) / on-demand (i.e. ABC iview, SBS on Demand)... I get continually frustrated when trying to catch-up via on-demand, and finding things are not captioned, when they were on FTA (free-to-air) broadcasts... or they have been captioned on original screenings in the past, but are no longer provided with captions on repeat screenings. Also, the accessibility of turning on captions on FTA on-demand services, is far more complex and sometimes impossible (i.e. not provided on iPad, or cannot be accessed via certain smart TVs).*

*[The]Netflix app on [my] iphone allows me to access lists of programs, and search and turn on audio description for those shows and movies that have it. I have control and am able to use the service. With regular broadcasting TV however, it’s a matter of pressing buttons on a remote to find channels. Foxtel is completely visual and unusable by me. I couldn’t use Foxtel independently because the menus are visual with no voice output.*

These responses highlight several important issues in the Australian context previously discussed in this report. Firstly that captions are only required by law on the primary channels (ABC, 7, 9, 10, SBS) and not the digital multichannels (ABC2, ABC3, ABCNews24, SBS2, 7Two, 7Mate, GO!, Gem, One HD and 11). Additionally, captioning requirements for pay television such as Foxtel differ according to the genre of the program and Foxtel has in the past received exemptions (Ellis 2014b). Secondly, as mentioned previously, accessibility must extend to the electronic program guides as well as the content of the program itself.

## Assistance with set-up

The simplistic idea of accessing VOD encompasses just the ability to view and/or hear content; however, access is also concerned with the capacity to ‘set-up’, obtain help and use the service or turn on captions or AD. VOD is often marketed as user-friendly and easy to set up; however, as this research shows, this is not always the case, particularly for PWD who must navigate inaccessible menus as well as television content. In response to whether VOD was indeed accessible, several respondents identified that while the provider might have accessibility features, these were not always easy to identify or utilise:

*Sometimes it is difficult to work out how to turn on the captions on the Smart TV, the process is not logical and takes time to work out how they operate. The method/process of turning on the captions on purchased DVDs is not consistent. Some are easier than others and some can take a few goes of starting and restarting the DVD over and over to get the hang of how it works.*

Other respondents cited that using VOD required extensive technical skills, and they were “not a techead”, or that they had “inaccessible websites”:

*If you have the right technology it makes a lot of difference. There is a [bit] you have to know what to get so you can access these video on demand services.*

*[I] heard about it but couldn’t work out how to use. Gave up and don’t watch much TV at all.*

When asked how difficult it was to set up their chosen VOD service, 43% stated it was either “very difficult” or “difficult”, 29% said it was “easy” or “very easy”, and 28% were “neutral” on the question. Significantly, no one with a vision impairment or intellectual disability found setting up VOD “very easy”. Other responses across impairment type were fairly evenly spread over the level of difficulties suggested in the question (see Table 8).

In asking for assistance, 44% stated they did ask for help and 56% said they did not. The source of help came typically in the form of family or friends (37%) rather than the provider (14%). Almost 8% used paid technical assistance, and 12% used an online help website. This technical support in adapting to changing television environments is a significant issue for the disability community; however, as both this and previous research suggests, this support often comes from family and friends rather than the service providers or the manufacturers of the hardware used to access the service (Sinclair et al. 2007). Similarly, for people who do access formal support mechanisms, the assistance provided is invaluable (Mackay 2007).

**Table 5. Impairment breakdown: How do you access your VOD service?**

Answer options	All responses	Vision	Hearing	Mobility	Chronic illness	Head injury	Intellectual	Mental illness
Smart TV	36.4%	22.7%	38.5%	26.3%	23.5%	33.3%	100.0%	57.1%
Chromecast	12.1%	4.5%	11.5%	31.6%	17.6%	66.7%	0.0%	0.0%
Desktop	50.0%	50.0%	42.3%	57.9%	64.7%	0.0%	0.0%	71.4%
DVD player	7.6%	9.1%	11.5%	10.5%	11.8%	0.0%	0.0%	14.3%
iPad/ tablet	53.0%	54.5%	53.8%	52.6%	70.6%	33.3%	0.0%	28.6%
Smartphone	40.9%	54.5%	34.6%	36.8%	29.4%	66.7%	0.0%	14.3%

**Table 6. Impairment breakdown: What accessible features would make watching television easier for you?**

Answer options	All responses	Vision	Hearing	Mobility	Chronic illness	Head injury	Intellectual	Mental illness
Closed captions	62.3%	23.1%	92.7%	40.0%	45.0%	100.0%	100.0%	60.0%
AD	27.3%	76.9%	4.9%	35.0%	40.0%	0.0%	0.0%	20.0%
Signing	11.7%	3.8%	22.0%	5.0%	5.0%	0.0%	0.0%	0.0%
Spoken subtitles	27.3%	46.2%	26.8%	10.0%	20.0%	0.0%	0.0%	0.0%
Clean audio	18.2%	26.9%	14.6%	30.0%	25.0%	0.0%	0.0%	0.0%
Large or colour-coded remote control keys	19.5%	30.8%	7.3%	50.0%	40.0%	0.0%	0.0%	60.0%
Talking menus	24.7%	73.1%	4.9%	25.0%	30.0%	0.0%	0.0%	0.0%

**Table 7. Impairment breakdown: How available are these accessibility features on your choice of VOD service?**

Answer options	All responses	Vision	Hearing	Mobility	Chronic illness	Head injury	Intellectual	Mental illness
Available	19.8%	11.1%	27.5%	4.2%	4.8%	66.7%	0.0%	37.5%
Sometimes available	32.6%	44.4%	25.0%	37.5%	52.4%	33.3%	50.0%	25.0%
Unavailable	14.0%	25.9%	12.5%	16.7%	4.8%	0.0%	50.0%	0.0%
Don't know	33.7%	18.5%	35.0%	41.7%	38.1%	0.0%	0.0%	37.5%

**Table 8. Impairment breakdown: How would you describe the level of difficulty in setting up your VOD service?**

Answer options	All responses	Vision	Hearing	Mobility	Chronic illness	Head injury	Intellectual	Mental illness
Very difficult	16.0%	20.8%	19.4%	13.6%	15.0%	33.3%	0.0%	0.0%
Difficult	26.7%	25.0%	19.4%	22.7%	30.0%	0.0%	50.0%	37.5%
Neutral	28.0%	29.2%	29.0%	13.6%	20.0%	33.3%	50.0%	37.5%
Easy	21.3%	25.0%	29.0%	27.3%	30.0%	33.3%	0.0%	12.5%
Very easy	8.0%	0.0%	3.2%	22.7%	5.0%	0.0%	0.0%	12.5%

## Key issues regarding accessibility

In the final question of the survey, respondents were asked to provide an overall impression of VOD services, and to tell us about their positive and negative experiences. Analysis of 68 extended responses, and the responses provided by the 13 interview participants, identified three key, consistent problems for PWD in accessing VOD services – a lack of availability of accessibility features such as captions and AD, reduced useability for PWD and unreliable internet connections.

### Lack of availability of accessibility features

Though our sample of participants represented a range of disabilities, those with a hearing impairment clearly articulated that their experience of VOD was marred by a lack of quality, consistent, useable captioning across service providers. Both negative past experiences and public perception of accessibility, as articulated by this respondent, can hinder the uptake of VOD:

*I haven't bothered with Stan, Presto, or similar as have heard their captioned content is very poor. My previous experience with FOX TV was terrible – very little choice in what was captioned. We left them for various reasons, particularly poor service, misleading advertising, expense and lack of real choice.*

As this particular respondent highlights, however, the retention (or cancellation) of a VOD service is not always solely based on the provision of a singular accessibility feature such as captioning, rather that the balance of customer service, 'honest' advertising, content selection and cost all contribute to the experience of the customer, whether they have a disability or not.

What our results indicate is that while customers with a disability are largely accommodating of the inaccessibility of providers (using their own assistive technology to access content), they are keenly aware of the provisions that could be made:

*They could do a lot better: talking menus, spoken sub titles, and also spoken messages on screen.*

*The iview app is particularly annoying and upsetting and I can't understand why the captions can't be provided on the app when all programs are captioned on the TV. The iview service is useless for me and do not like being shut out.*

One interviewee expressed that, especially for older users, the expectations on services to provide accessible content was minimised by past experiences and availability:

*So, the other thing is, my expectations are quite low because of years of not having audio descriptions. I have slightly different expectations to other people.*

This reflection is important in considering both the shifting expectations regarding VOD providers but also the need for a clear communication of what features are available in order for providers to capture (and cater to) the older market.

The identification that captioning was the main accessibility problem of VOD services may not accurately reflect the need for other accessibility features. Rather, it may be indicative that this feature is often the only choice given to consumers. As Chris Mikul identified, "the only disability being catered for to any great extent is deafness/hearing impairment". Kingett agreed, noting:

*People who are deaf and hard of hearing are placed way before the rest because captions are beyond easy and cheap to create now. Please, there's even companies that people use to crowd source captions so companies don't have to do it anymore. This all came about because the deaf community has [banded] together [...] to achieve a cause. I know audio description isn't as cheap to make as captions but, by these companies budgets that's like dropping a penny.*

Another respondent pointed toward the importance of both disability advocacy and political will by politicians to introduce legislation. As this respondent explained, accessibility features that addressed vision impairments were neglected due to the perception this disability was experienced by a minority of the population:

*We have very little audio described content available in Australia. We don't have the population of blind people nor the political will by politicians to force providers to provide for us.*

However, as discussed, people with vision impairment are banding together in attempts to achieve improvements regarding the availability of AD on both broadcast television and the VOD sector.

#### Reduced useability

Robert Kingett described the need for both accessibility and useability in VOD, explaining:

*If something is usable, it's exactly that, usable, even if we need to adapt to using it. It might not even be accessible though, so that's where the adaptations come in.*

Many of the respondents to the survey and interview articulated this distinction, highlighting the ways complex website design or navigation limitations render services inaccessible, despite the presence of 'accessibility features' such as closed captions. A collection of responses articulate the issues participants experienced across a number of platforms and providers regarding its supposed useability:

*Foxtel website – to actually find [out] how to use it is very complicated.*

*Only access on iPad as the apps are easier to use than the website. There are some functions even within the app that the voiceover software cannot read to me so there could be programs/features that I am missing out on*

*I found video on demand services provided a lot more shows of interest but difficult to navigate. Netflix was so much work I didn't bother with it after the free trial ended.*

Similarly, the inconsistent application of and approach to accessibility across providers can render a service 'unusable':

*Each device has its own settings... I would like one central settings page that applies across all devices. I would like to let Netflix apply accessibility settings across all my devices. I wish it was easier to search for accessible media to know which service to subscribe to. Like I searched iTunes for AD movies a few weeks ago and found nothing and then was told Finding Nemo was available. On Netflix I had watched Daredevil with description but hadn't found any others then my friend tells me there are lots of shows on Netflix with AD... How do you find this out????*



### Unreliable internet connections

A consistent issue for respondents that extended beyond the VOD provider's 'internal' accessibility was the ability to access service through current internet providers and options:

*My only negative experiences relate to poor internet connectivity in my area causing it to drop out, or issues related to licensing where every season of a series is not available.*

*When I'm watching like Netflix... [it often will] slow down or drop out. Where I am, we've got the old corroded copper wiring network still... The other side of town has the NBN we don't and no idea when we are going to have it.*

Although we do not address it within this research, the issue of licensing and available content is a significant issue within the Australian television landscape where licensing deals tend to favour legacy broadcasters. Many respondents noted that Netflix Australia offered less content than Netflix US. Similarly, the issue of internet connectivity, already mentioned in this section, was of significant concern. While the introduction of the NBN may alleviate or eliminate these issues over time, the current cost of online access, compounded with the cost of the VOD service, continues to effect the uptake of the service by PWD, particularly if they feel they are not getting an equitable service (Ellis & Kent 2015). These concerns related to licencing and connectivity were tightly bounded with concerns regarding what we call the 'economics of disability':

*Negatives are geo blocking and cost of subscribing. Until these issues are resolved we are always going to be restricted in what we get in Australia and limited by cost I'd like to see streaming and subscription services offer concession rates for Health and Pension card holders like cinemas do.*

*Technology works to create and enforce class divides by excluding those of us without the latest computer equipment.*

*All but ABC iview have 'updated' systems, which excludes me from accessing. My iPad, although but a handful of years old, cannot 'upgrade' its OS – Apple requires that a new model is purchased!*

Respondents therefore believed they were limited by both poor internet connectivity and using older equipment which did not always integrate well with the service platforms. The necessity to use older equipment is well documented in the literature, with PWD electing to use older machines for both financial and assistive purposes (Ellis & Kent 2011).

As discussed in this report, a policy discussion paper in 2008 predicted improved television access for people with vision and hearing impairments as a result of competition following the entry of new providers in the marketplace (Australian Government 2008). However, the experience of our respondents shows that while this is the case to a limited degree (for example Netflix's introduction of AD), a number of issues continue to exist. In 2003 Gerard Goggin and Christopher Newell identified the ways in which new technology is both enabling and disabling (Goggin & Newell 2003). We see the continued operation of what they termed "digital disability" through the introduction of VOD in this country. While some issues are not disability specific, such as geoblocking and poor internet connection, when compounded by the unique problems experienced by this group – such as the loss of accessibility in software updates, a lack of available accessibility features, again combined with lower levels of income – the issue of paying the same amount for an even poorer quality of service is compounded.

## The future

Despite these issues, respondents to the survey did see a place for VOD in the Australian disability landscape. In reflecting on their overall impression of VOD services, survey respondents also articulated what features and additions the providers could make to create an accessible service. These 'hopes' included practical accessibility design inclusions like universal descriptive audio, consistent captioning, larger buttons, more screen reader friendly navigation of the user interface, and AD.

More broadly, respondents to both the survey and the interview expressed the need for overarching social, political and industry expectations to change:

*It would be good if it was available and accessible for all.*

*Captioning needs to be available for those who need it to be able to participate in all aspects of the community.*

*I don't know about other people's needs, however captioning should be considered as the norm for hearing impaired and deaf people.*

*Simply put – it needs to be recognised that some people require access to be provided in a different way and that should not be considered that they are being given special services or privileges. Everyone should be treated equally and have equal access.*

This respondent articulates a common barrier experienced by PWD, that they are accused of being given something 'extra' when requesting accessibility. It is important to remember that equality sometimes means providing something different so that the PWD can achieve the same result. After all, PWD are paying the same amount as everyone else for the service, it is not 'fair' that they are unable to use it simply because they experience television in a different way.

Reinforcing this idea of general accessibility and mirroring the discussions being held in the VOD help forums and social media profiles, respondents were aware that "the technology was there" for more accessible content (including AD and captioning), and cited experiences in the USA and UK where providers were including these accessibility features across all content. Again, these respondents are aware both of their rights as consumers and of international advances in legislation that make VOD and television more generally accessible in a world-wide context:

*I mean if you look at the UK experience, [and] the American experience you'd think that well the technology is there, why not just use it!*

*In America... they have a lot stronger legislation... [but if they include] audio description on there, why shouldn't it be the same here in Australia?*

*The CVAA in the USA bridges the gap to some extent with captioning (although it doesn't venture into online audio description). Nevertheless, my short answer to this question would be that we need something like the CVAA here.*

Looking further into the future, in the interviews conducted, respondents were asked what impact they thought VOD might have on the television industry. There were two main themes that emerged

from these responses – that it will increase expectations of both VOD and broadcast television, including the expectation on accessibility, and that it will help to influence accessibility legislation:

*Eventually it will erode the market place and people will expect more from VOD. Commercial TVs will invest in more VOD and work jointly with them to provide entertainment services. More people will have smart TV and will have VOD so that [the] traditional TV market will shrink.*

*Once people start opting for viewing options that better suit their lifestyle TV stations will have no choice but to offer more features ie audible TV guide stations and/or more closed captioning services to draw people back. The programs from overseas will be broadcast here sooner (or all at once) and programs only available on demand ie Making A Murderer will be able to claim large fees to allow stations exclusive access to them and prevent viewers looking elsewhere.*

*I think with Netflix coming in all of a sudden [and] putting closed captions on, before Netflix, they weren't even considering it. So I think it's made the local provider see that there is a demand for these particular features.*

The idea of both legislation and disability advocacy also emerged as the answer to the question of how to improve accessibility in the future:

*Hopefully the government legislation changes as well... That'd be nice. I'd like them to do it without being forced but if forcing them is the only way to do it, then it needs to happen soon.*

*The normal television owners and producers are not interested in accessibility. While it has been a very long long time since the Disability Discrimination Act of 1992, there is no requirement for television owners and producers to make television programs and shows and movies accessible. The DDA isn't working for people with disabilities, most mainstream people acknowledge there are Discrimination laws but see the DDA as a voluntary guideline that they could opt-in to rather than see it as law."*

*Disability Rights advocates [will get] involved, where legal consequences would come about, then [that will] get the ball rolling. I think Australia will need to actively push this or else it will not happen until many years later when Netflix is dying.*

These interviews and survey results provide important insights into how PWD access and use VOD. However, this consumer group has been significantly ignored.

# Conclusions and recommendations

When this project set out to investigate the ways Australians with disability access and use VOD, existing research suggested, despite great potential for accessibility, that PWD were at risk of being left out of the VOD revolution. The results not only confirmed this, they underlined that accessibility to VOD required more than the provision of captions and AD, although that remained significant. Consumers, and those who hoped to be consumers of VOD, required accessibility from sign up (start) to viewing (finish).

The main conclusions we draw from this project are:

- None of the Australian VOD providers have an accessibility policy. Stan, Presto and Netflix all launched without AD in place, joining the struggling Quickflix which also did not offer AD. While Stan and Presto both claimed to be “working on” adding captions to their catalogue, Quickflix took a distributor-led approach, making captions available if the distributing studio offered them. Stan have since introduced captions on some titles. However, a large number of titles on Netflix are captioned, due to the requirements of USA-based legislation.
- The approach taken by Australian VOD to accessibility is consistent with what is happening internationally – limited AD, some distributor-led captions and others offering captions as a matter of course. The move towards fully accessible sites such as Talkingflix and Zaga are also being replicated in Australia with the introduction of Disability Busters in 2016. However, while Disability Busters is captioned by default, they do not offer AD.
- Analysis of the accessibility policies of a selection of devices used to access VOD reveal a strong commitment to accessibility with regards to hardware. Each integrates accessibility into mainstream design and includes features such as screen readers, magnification and dictation as mainstream options.
- VOD providers in Australia are currently not subject to any legislation that ensures accessibility, including the provision of captions. Because VOD occurs at the intersection between television and the web, television accessibility and web accessibility – specifically the W3C WAI – should both be considered in understanding the breadth of applicable accessibility policies. Therefore Section 24 of the *DDA* (1992) is also relevant, stipulating “that people with disabilities have the same fundamental rights to access information and services as others in the community” (Australian Government 1992b).
- PWD, including people with vision impairments, *do* use VOD and continue to have particular unmet access needs. Many of those surveyed and interviewed believe the answer to the accessibility problem lies in a mix of legislation, advocacy and the introduction of common standards.

As a result of these findings we propose the following recommendations. As previous research has shown, accessibility relies on the activities of three key groups – policy makers in government who have the ability to legislate in this area; advocates and consumer groups of PWD; and finally the VOD service providers themselves taking an active interest in this issue (Robare 2011; Ellis & Kent 2015). As such, our recommendations are directed to these three groups:

## Recommendation to government

As this report has demonstrated, the main driver behind the adoption of accessibility standards is regulation. Waiting for market forces to encourage adoption and self-regulation is a slow and ineffective pathway to achieve change and enable the social inclusion of people with disabilities. We recommend that as a matter of urgency the government reviews current legislation relating to the accessibility of broadcast television content to both expand the requirements relating to captioning services and also to include requirements of content with audio description.

While video on demand services offered over the internet may appear to be transnational, this report has shown that they are in fact very much focused at the national level, with even international companies like Netflix providing a specific national level service in Australia. As such the government must, also as a matter of urgency, put in place regulation to require accessible content including - at least - requirements for captioning services and audio description for content provided through these services in Australia and to mandate that all web sites associated with these services meet with W3C accessibility requirements.

Further, we recommend governments work to ensure that people with disabilities are aware of the accessibility features that will benefit them in both broadcast television and video on demand services.

## Recommendation to the video on demand service providers

Having no accessibility policy, or an announcement - in some cases years old - that a company is in the process of developing an accessibility policy and accessible content is simply not acceptable for a contemporary media company. A significant portion of your consumer base could be people with disabilities or their families and friends who may wish to share in the activity of experiencing video on demand.

There is still scope for the industry to take the lead in this area ahead of any external regulation and we urge the companies involved to embrace this opportunity. All involved in the industry need to urgently work with the disability community to provide an accessible environment for people with disabilities. We recommend service providers hire accessibility consultants to make their platforms accessible and useable for this group of consumers.

## Recommendation to advocates and consumer groups of people with disabilities

The Accessible Netflix Project has demonstrated that advocates can successfully agitate for change to make services accessible for people with disabilities. While the Accessible Netflix Project has a predominant focus on the United States, it is important that local activists in Australia are able to put the accessibility practices and policies of video on demand companies under the spotlight to improve accessibility options, either through the grassroots approach taken by the ANP or via disability discrimination complaints such as *NAD v Netflix*.

# Authors

## Katie Ellis

Dr Katie Ellis is a Senior Research Fellow in the Internet Studies Department at Curtin University and the convenor of the Curtin University Critical Disability Research Network. She has worked with PWD in government, academia and the community and has convened disability research advisory panels. She has authored and edited several books and articles on the topic, including an award winning paper on VOD published as Netflix was launched in Australia. She began a highly competitive Discovery Early Career Researcher Award (DECRA) in 2013 to investigate the impacts of the changing television environment on the social inclusion and exclusion of PWD.

## Mike Kent

Dr Mike Kent is Head of Department and Senior Lecturer at the Department of Internet Studies at Curtin University. He has a strong history of successfully conducting research involving PWD and new media environments having worked on Australian Research Council funded research into people with chronic fatigue syndrome and their use of Second Life, and his current research into university students with disabilities studying online funded through the Centre for Student Equity in Higher Education. He is also a leading expert in the field of disability media, with a particular focus on new media.

## Kathryn Locke

Kathryn Locke is an Adjunct Research Fellow at Curtin University. Kathryn has extensive research experience in a range of fields, including sustainability and internet studies, and has worked across projects for Curtin University, the University of Western Sydney and Murdoch University. Notable projects from the past 3 years include: Intergenerational approaches towards enhancing parent's knowledge and practice of online safety 2011-2012 (Young and Well Cooperative Research Centre, UWS and Google); Aboriginal heritage in the City of Perth 2014 (CUSP and City of Perth); and Navigating urban spaces 2015 (Curtin). Beyond her academic and research experience, Kathryn teaches externally for both Curtin and Murdoch in the fields of communication, media and cultural studies.

## Melissa Merchant

Dr Melissa Merchant is a Research Assistant in the Department of Internet Studies at Curtin University where she has participated in research projects investigating a variety of ways PWD use digital and online media, including digital television, VOD and captioned lectures as part of online learning. She has extensive experience working with diverse student groups in Australia, the USA and China. Her background is in English literature and communications and cultural studies. She received her PhD from Murdoch University in 2013 where she also works in the School of Arts. Melissa has been published in the *Journal of Interactive Media* and has a forthcoming publication in *The Routledge Companion to Disability and Media Studies*.

# References

- @FOXTEL\_Help 2015, *Conversation #7041641*, viewed 31 May 2016, <<https://foxtel.response.lithium.com/portal/conversation/7041641>>.
- @StanAustralia 2015, 'Only foreign films at the moment, we're working on expanding on that', 9 June, *Twitter*, viewed 3 November 2015, <<https://twitter.com/stanaustralia/status/608182964346863616>>.
- ACMA 2010, *Commercial Television Industry Code of Practice*, ACMA, viewed 27 May 2016, <<http://www.acma.gov.au/~media/Broadcasting%20Investigations/Regulation/pdf/Commercial%20Television%20Industry%20Code%20of%20Practice%202010.pdf>>.
- ACMA 2014, *Converged legislative frameworks*, 21 November, ACMA, viewed 27 May 2016, <<http://acma.gov.au/theACMA/Library/researchacma/Occasional-papers/covered-legislative-frameworks-international-approaches>>.
- ACMA 2016, *ACMA finalises TV captioning quality standard review*, 18 May, ACMA, viewed 27 May 2016, <<http://www.acma.gov.au/theACMA/Newsroom/Newsroom/Media-releases/acma-finalises-tv-captioning-quality-standard-review>>.
- Arch, AMJ & Burmeister, OK 2003, 'Australian experiences with accessibility policies post the Sydney Olympic games', *Information Technology and Disabilities*, vol. 9, no. 2.
- ATVOD 2015, *Provision of video on demand access services: A report on the level of provision by on demand*, The Authority for Television On Demand, viewed 13 May 2016, <[http://stakeholders.ofcom.org.uk/binaries/broadcast/on-demand/access-european/AS\\_survey\\_report\\_2015.pdf](http://stakeholders.ofcom.org.uk/binaries/broadcast/on-demand/access-european/AS_survey_report_2015.pdf)>.
- Australian Communications Consumer Action Network 2012, *Blindness sector report on the 2012 ABC Audio Description Trial* 18 December, ACCAN, viewed 21 November 2013, <<http://accan.org.au/index.php/access-for-all/research-reports/524-blindness-sector-report-on-the-2012-abc-audio-description-trial>>.
- Australian Government 2008, *Access to electronic media for the hearing and vision impaired – a discussion paper*, viewed 18 October 2013, <[http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0003/83415/Access\\_to\\_Electronic\\_Media\\_for\\_the\\_Hearing\\_and\\_Vision\\_Impaired.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0003/83415/Access_to_Electronic_Media_for_the_Hearing_and_Vision_Impaired.pdf)>.
- Australian Government 1992a, *Broadcasting Services Act*, viewed 26 June 2010, <[http://www.austlii.edu.au/au/legis/cth/consol\\_act/bsa1992214/](http://www.austlii.edu.au/au/legis/cth/consol_act/bsa1992214/)>.
- Australian Government 1992b, *Disability Discrimination Act*, viewed 25 June 2010, <[http://www.austlii.edu.au/au/legis/cth/consol\\_act/dda1992264/](http://www.austlii.edu.au/au/legis/cth/consol_act/dda1992264/)>.
- Australian Government 1992c, *Section 24 Disability Discrimination Act*, viewed 2 June 2016, <[http://www.austlii.edu.au/au/legis/cth/consol\\_act/dda1992264/s24.html](http://www.austlii.edu.au/au/legis/cth/consol_act/dda1992264/s24.html)>.
- Baker & McKenzie 2012, *Guide to media and content regulation in Asia Pacific*, Comms Alliance, viewed 27 May 2016, <[http://www.commsalliance.com.au/\\_\\_data/assets/pdf\\_file/0016/42136/Guide-to-Media-and-Content-Regulation-in-Asia-Pacific.pdf](http://www.commsalliance.com.au/__data/assets/pdf_file/0016/42136/Guide-to-Media-and-Content-Regulation-in-Asia-Pacific.pdf)>.



C-Scott, M 2016, *The battle for audiences as free-TV viewing continues its decline*, 22 April, Mumbrella, viewed 24 May 2016, <<https://mumbrella.com.au/the-battle-for-audiences-as-free-tv-viewing-continues-its-decline-362010>>.

CNET 2014, *The Australian environment*, CNET, viewed 17 May 2016, <<http://www.cnet.com/au/pictures/piracy-by-the-numbers-how-does-it-add-up-pictures/2/>>.

Cronin, BJ & King, SR 1998, *The development of the descriptive video services*, National Center to Improve Practice in Special Education Through Technology, Media and Materials, viewed 8 May 2014, <<http://www2.edc.org/NCIP/library/v&c/Cronin.htm>>.

Department of Justice n. d., *Title III highlights*, viewed 27 May 2016, <<http://www.ada.gov/t3highlight.htm>>.

Downey, G 2007, 'Constructing closed-captioning in the public interest: From minority media accessibility to mainstream educational technology', *Info*, vol. 9, no. 2-3, pp. 69-82.

Ellcessor, E 2012, 'Captions on, off, on TV, online: Accessibility and search engine optimization in online closed captioning', *Television & New Media*, vol. 13, no. 4, pp. 329-52.

Ellis, K 2014a, 'Cripples, bastards and broken things: Disability in game of thrones', *Media Culture*, vol. 17, no. 5, viewed 5 June 2016, <<http://journal.media-culture.org.au/index.php/mcjournal/article/viewArticle/895>>.

Ellis, K 2014b, 'Television's transition to the internet: Disability accessibility and broadband-based TV in Australia', *Media International Australia, Incorporating Culture & Policy*, no. 153, pp. 53-63.

Ellis, K 2015, 'Netflix closed captions offer an accessible model for the streaming video industry, but what about audio description?', *Communication, Politics & Culture*, vol. 47, no. 3.

Ellis, K & Goggin, G 2015, *Disability and the media*, Palgrave Macmillan, New York.

Ellis, K & Kent, M 2011, *Disability and new media*, Routledge Studies in New Media and Cyberculture, Routledge, New York.

Ellis, K & Kent, M 2015, 'Accessible television: The new frontier in disability media studies brings together industry innovation, government legislation and online activism', *First Monday*, no. 20, viewed 5 June 2016 <<http://firstmonday.org/ojs/index.php/fm/article/view/6170>>.

Facebook user 2013a, *When will closed captions be on streaming tv & movies on watchnow!!!!*, 1 September 2015, Facebook, viewed 17 May 2016, <<https://www.facebook.com/quickflix/posts/10151243573409748>>.

Facebook user 2013b, *Will you provide subtitles on foxtel go app*, 24 May 2016, Facebook, viewed 31 May 2016, <<https://www.facebook.com/FOXTEL/posts/10152698527840074>>.

Facebook user 2015, *Does Stan have closed captions?*, 25 January, Facebook, viewed 3 November 2015, <<https://www.facebook.com/StanAustralia/videos/808470939210114/>>.

Federal Communications Commission (FCC) 2010, *21st Century Communications and Video Accessibility Act (CVAA)*, FCC, viewed 27 May 2016, <<https://www.fcc.gov/consumers/guides/21st-century-communications-and-video-accessibility-act-cvaa>>.



Fernandes, N, Costa, D, Duarte, C & Carrico, L 2013, 'Evaluating the accessibility of adaptive TV based web applications', in P Biswas, C Duarte, P Langdon, L Almeida & C Jung (eds.), *A multimodal end-2-end approach to accessible computing*, Springer London, London, pp. 177-94.

Fifield, M 2015, *Motions: audio description*, 17 August, Parliament of Australia, viewed 27 May 2016, <<http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;db=CHAMBER;id=chamber%2Fhansards%2F6f4408b3-e190-4f50-a0eb-3d776163ef42%2F0073;query=id%3A%22chamber%2Fhansards%2F6f4408b3-e190-4f50-a0eb-3d776163ef42%2F0000%22>>.

Foxtel community member 2014a, *Box office*, viewed 31 May 2016, <<http://community.foxtel.com.au/t5/Foxtel-TV/box-office/m-p/15201/highlight/true#M2053>>.

Foxtel community member 2014b, *Foxtel Go – Android Access*, viewed 31 May 2016, <<http://community.foxtel.com.au/t5/Foxtel-Go/Foxtel-Go-Android-Access/m-p/32560/highlight/true#M2823>>.

Foxtel community member 2014c, *How can I authorise someone to speak for me*, viewed 31 May 2016, <<http://community.foxtel.com.au/t5/Foxtel-TV/How-can-I-authorise-someone-to-speak-for-me/m-p/35601/highlight/true#M4628>>.

Foxtel community member 2014d, *Subtitles* 3 June, viewed 31 May 2016, <<http://community.foxtel.com.au/t5/Programming-Technical-Support/Subtitles/m-p/17307/highlight/true#M318>>.

Foxtel community member 2015a, *Escape to the Country CC & others*, 17 February, viewed 31 May 2016, <<http://community.foxtel.com.au/t5/Programming-Technical-Support/ESCAPE-TO-THE-COUNTRY-CC-amp-Others/m-p/44355/highlight/true#M1221>>.

Foxtel community member 2015b, *Introduction, a bit about me*, viewed 31 May 2016, <<http://community.foxtel.com.au/t5/Welcome-to-the-Foxtel-Community/introduction-a-bit-about-me/m-p/43360/highlight/true#M592>>.

Fryer, L 2016, *An introduction to audio description: A practical guide*, Routledge, London and New York.

Gisbert, MV 2014, 'Audio description in Italy: An anecdote or a social integration policy?', *Review of Disability Studies: An International Journal*, vol. 10, no. 1&2, viewed 5 June 2016 <<http://www.rds.hawaii.edu/ojs/index.php/journal/article/view/35>>.

Goggin, G & Newell, C 2003, *Digital disability: The social construction of disability in new media*, Rowman and Littlefield Publishers Inc, Lanham.

Goren, W 2012, *Must the internet be accessible to comply with the Americans with Disabilities Act?*, 23 June, Understanding the Americans with Disabilities Act (ADA), viewed 9 May 2014, <<http://www.williamgoren.com/blog/tag/21st-century-communication-video-accessibility-act-of-2010/>>.

Hattem, J 2015, 'Court: Netflix doesn't have to comply with disability law', 3 April, *The Hill*, viewed 20 August 2015, <<http://thehill.com/policy/technology/237829-court-netflix-doesnt-have-to-comply-with-disability-law>>.

Hollier, S 2013, *10 milestones in the mainstreaming of accessibility*, 15 July, viewed 21 August 2013, <<http://www.creativebloq.com/netmag/10-milestones-mainstreaming-accessibility-7135541>>.

Jan, P-T, Lu, H-P & Chou, T-C 2012, 'Measuring the perception discrepancy of the service quality between provider and customers in the Internet Protocol Television industry', *Total Quality Management & Business Excellence*, vol. 23, no. 7/8, pp. 981-95.

Katie 2014, *Advocating for audio description on Netflix's Daredevil series*, 6 July, The Accessible Netflix Project, viewed 19 November 2015, <<https://netflixproject.wordpress.com/tag/daredevil/>>.

Kingett, R 2014a, *The accessible Netflix project advocates taking steps to ensure Netflix accessibility for everyone*, viewed 30 January 2014, <<http://netflixproject.wordpress.com/>>.

Kingett, R 2014b, *Will Netflix be inaccessible in Australia and New Zealand?*, 19 November, The Accessible Netflix Project, viewed 19 November 2014, <<http://netflixproject.wordpress.com/2014/11/19/will-netflix-be-inaccessible-in-australia-and-new-zealand/>>.

Kingett, R 2015a, *"Daredevil," Audio description and the Accessible Netflix Project*, 1 June, Disability Blog, viewed 19 November 2015, <<https://usodep.blogs.govdelivery.com/2015/06/01/daredevil-audio-description-and-the-accessible-netflix-project/>>.

Kingett, R 2015b, *Netflix Australia will have captions now. Audio description later*, 4 March, The Accessible Netflix Project, viewed 17 May 2016, <<https://netflixproject.wordpress.com/tag/australia/>>.

Kubitschke, L, Cullen, K, Dolphi, C, Laurin, S & Cederbom, A 2013, *Study on assessing and promoting e-accessibility*, European Commission, viewed 3 February 2014, <<http://ec.europa.eu/digital-agenda/en/news/study-assessing-and-promoting-e-accessibility>>.

Mackay, H 2007, 'Analogue switch-off: Multi-channel viewing by "the reluctant 50%"', *International Journal of Cultural Policy*, vol. 13, no. 1, pp. 33-48.

Madson, G 2013, *What just happened? Our audio description has vanished!*, 10 July, Ramp Up, viewed 1 January 2014, <<http://www.abc.net.au/rampup/articles/2013/07/10/3800109.htm>>.

McCreery, SP & Krugman, DM 2015, 'TV and the iPad: How the tablet is redefining the way we watch', *Journal of Broadcasting & Electronic Media*, vol. 59, no. 4, pp. 620-39.

McCullagh, D 2002, *Judge: Disabilities Act doesn't cover web*, viewed 25 June 2010, <[http://news.cnet.com/2100-1023-962761.html?tag=fd\\_top\\_1](http://news.cnet.com/2100-1023-962761.html?tag=fd_top_1)>.

Media Access Australia 2012, *Audio description on TV in the US*, viewed 12 May 2014, <<http://www.mediaaccess.org.au/television/audio-description-on-tv/audio-description-on-tv-in-the-us>>.

Media Access Australia 2013, *Policy and expectations: What you can expect on free-to-air television*, Media Access Australia, viewed 27 May 2016, <<http://www.mediaaccess.org.au/tv-video/policy-and-expectations>>.

Media Access Australia 2015, *Netflix launches in Australia with captions*, 24 March, Media Access Australia, viewed 5 June 2016, <[http://www.mediaaccess.org.au/latest\\_news/tv-video/netflix-launches-in-australia-with-captions](http://www.mediaaccess.org.au/latest_news/tv-video/netflix-launches-in-australia-with-captions)>.

Media Access Australia 2016, *Stan introduces closed captions*, 5 January, Media Access Australia, viewed 16 May 2016, <[http://www.mediaaccess.org.au/latest\\_news/news/stan-introduces-closed-captions](http://www.mediaaccess.org.au/latest_news/news/stan-introduces-closed-captions)>.

Mikul, C 2010, *Audio description background paper*, Media Access Australia, Ultimo NSW, viewed 5 June 2016,  
<<https://view.officeapps.live.com/op/view.aspx?src=http%3A%2F%2Fmediaaccess.org.au%2Fsites%2Fdefault%2Ffiles%2FMAA%2520-%2520Audio%2520Description%2520Background%2520Paper.doc>>

Mikul, C 2013, *Captioning on video on demand services: It's time for Australia to catch up*, Media Access Australia, viewed 1 October 2014,  
<<http://www.mediaaccess.org.au/sites/default/files/files/MAA%20Video%20on%20Demand%20report.pdf>>.

Mikul, C 2015, *Access on demand: Captioning and audio description on video on demand services, Media Access Australia Report Series*, Media Access Australia, viewed 5 June 2016,  
< <http://www.mediaaccess.org.au/research-policy/research-and-reports/access-on-demand-captioning-and-audio-description-on-video-on-demand-services>>

Mullin, J 2012, *Netflix settles with deaf-rights group, agrees to caption all videos by 2014*, 11 October, arstechnica, viewed 1 January 2014, <<http://arstechnica.com/tech-policy/2012/10/netflix-settles-with-deaf-rights-group-agrees-to-caption-all-videos-by-2014/>>.

Oxford English Dictionary, *Video, n.*, Oxford University Press, Oxford.

Pila, JN 2012, 'They're already regulating the Internet?', *Communications Lawyer*, ODD

Presto admin 2016, *Closed captions and subtitles*, 23 February, viewed 28 May 2016,  
<<https://community.presto.com.au/t5/Watching-Presto/Closed-captions-and-Subtitles/mp/1521/highlight/true#M321>>.

RNIB, Sense & Action on Hearing Loss 2015, *Defining progress for access services on video on demand (VOD)*, viewed 27 May 2016,  
<<https://www.actiononhearingloss.org.uk/~media/Documents/Campaigns/Access%20to%20tv%20and%20web/Defining%20Progress%20for%20Access%20Services%20on%20VOD.ashx>>.

Robare, JS 2011, 'Television for all: Increasing television accessibility for the visually impaired through the FCC's ability to regulate video description technology', *Federal Communications Law Journal*, vol. 63, no. 2, pp. 553-78.

Robson, G, D 2004, *The closed captioning handbook*, Gulf Professional Publishing, Amsterdam.

Sas, N & Smith, S 2016, 'Quickflix collapses, blames Nine's Stan', *The West Australian*, 26 April, viewed 16 May 2016, <<https://au.news.yahoo.com/thewest/wa/a/31436401/quickflix-collapses-blames-nines-stan/>>.

Screen Australia 2014, *Online and on demand: Trends in Australian online video use*, Screen Australia, viewed 5 June 2015,  
< <http://www.screenaustralia.gov.au/getmedia/0062da06-db04-4932-a3e1-20a81d383129/Online-on-demand-copy.pdf?ext=.pdf>>.

Siewert, R 2015, *Motions: Audio description*, 17 August, Parliament of Australia, viewed 27 May 2016,  
<<http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;db=CHAMBER;id=chamber%2Fhansards%2F6f4408b3-e190-4f50-a0eb-3d776163ef42%2F0072;query=id%3A%22chamber%2Fhansards%2F6f4408b3-e190-4f50-a0eb-3d776163ef42%2F0000%22>>.

Sinclair, S, Bramley, G, Dobbie, L & Gillespie, M 2007, *Social inclusion and communications: a review of the literature*, November, OfCom, viewed 24 September 2013, <[http://www.communicationsconsumerpanel.org.uk/downloads/Research/LowIncomeConsumers\\_Research/Social%20inclusion%20and%20communications/Social%20inclusion%20and%20communications.pdf](http://www.communicationsconsumerpanel.org.uk/downloads/Research/LowIncomeConsumers_Research/Social%20inclusion%20and%20communications/Social%20inclusion%20and%20communications.pdf)>.

Snyder, J 2005, 'Audio description: The visual made verbal', *International Congress Series*, vol. 1282, pp. 935-9.

Stan Help 2016, *How do I enable closed captions?*, Stan, viewed 16 May 2016, <<https://help.stan.com.au/hc/en-us/articles/203080370>>.

Stephens, A 2015, *Stan and streaming chiefs reveal there's a new prime time for Australian TV viewers*, *Sydney Morning Herald*, 4 June, viewed 30 May 2016, <<http://www.smh.com.au/entertainment/tv-and-radio/stan-and-streaming-chiefs-reveal-theres-a-new-prime-time-for-australian-tv-viewers-20150604-ghgdwy.html#ixzz4A7QE77wp>>.

Tucker, H 2015, *What's best? Netflix, Foxtel Presto or Stan?*, 24 March, News.com.au, viewed 30 May 2016, <<http://www.news.com.au/technology/home-entertainment/tv/whats-best-netflix-foxtel-presto-or-stan/news-story/3828086930fb8a886d44d5cc8a1c38af>>.

Tucker, H 2016, *Netflix leads the streaming wars, followed by Foxtel's Presto*, 24 June, News.com.au, viewed 18 May 2016, <<http://www.news.com.au/technology/home-entertainment/tv/netflix-leads-the-streaming-wars-followed-by-foxtels-presto/news-story/7adf45dcd7d9486ff47ec5ea5951287f>>.

Twitter users 2016, *foxtell closed captions*, viewed 5 June 2016 <<https://twitter.com/search?q=foxtell%20closed%20captions&src=typd>>.

UK Government 2003, *Communications Act 2003*, The National Archives, viewed 27 May 2016, <<http://www.legislation.gov.uk/ukpga/2003/21/contents>>.

United States Code 1990, *Americans with Disabilities Act of 1990*, United States Code, viewed 27 May 2016, <<http://www.ada.gov/pubs/adastatute08.htm>>.

Utray, F, de Castro, M, Moreno, L & Ruiz-Mezcua, Be 2012, 'Monitoring accessibility services in digital television', *International Journal of Digital Multimedia Broadcasting*, vol. 2012, 9 pages.

Varley, A 2013, *New access for a new century: we sit down with Karen Peltz Strauss*, 28 August, Media Access Australia, viewed 27 May 2016, <[http://www.mediaaccess.org.au/latest\\_news/australian-policy-and-legislation/new-access-for-a-new-century](http://www.mediaaccess.org.au/latest_news/australian-policy-and-legislation/new-access-for-a-new-century)>.

W3C 2008, *Web Content Accessibility Guidelines (WCAG) 2.0*, 11 December, viewed 21 August 2013, <<http://www.w3.org/TR/WCAG20/>>.

Whirlpool forum 2015, *Presto, Stan \_ disgraceful and discriminatory*, September, Whirlpool, viewed 31 May 2016, <<http://forums.whirlpool.net.au/archive/2447946>>.

Wolford, J 2012, *Netflix will caption all streaming videos by 2014, per settlement* 11 October WebProNews/ Technology, viewed 1 January 2014, <<http://www.webpronews.com/netflix-will-caption-all-streaming-videos-by-2014-per-settlement-2012-10>>.

Wooten, V 2012, 'Waiting and watching in silence: Closed captioning requirements for online streaming under National Association for the Deaf v Netflix, Inc. and the CVAA', *North Carolina Journal of Law & Technology*, vol. 14, pp. 135-66.

Wright, T 2015, *Netflix begins audio description for visually impaired* 14 April, Netflix, viewed 5 June 2016 <<http://blog.netflix.com/2015/04/netflix-begins-audio-description-for.html>>.

YouTube 2016, *Add subtitles & closed captions*, YouTube, viewed 27 May 2016, <<https://support.google.com/youtube/answer/2734796?hl=en>>.

Zdenek, S 2011, 'Which Sounds are Significant? Towards a Rhetoric of Closed Captioning', *Disability Studies Quarterly*, vol. 31, no. 3.

# Appendix: Hardware accessibility

Hardware	Associated software	Accessibility policy	Accessibility features
Android devices	n/a	<i>Android accessibility features and apps enable you to customise your Android device to suit your needs</i>	<p><b>Screen reader (TalkBack):</b> uses spoken feedback to describe actions, and provide alerts and notifications.</p> <p><b>Switch access:</b> enables the control of a device with one or more switches (providing an alternative to using the touch screen).</p> <p><b>Voice access:</b> allows control of the device with your voice through spoken commands.</p> <p><b>Braille support (BrailleBack):</b> offers an add-on accessibility service that connects a supported refreshable Braille display to the device via Bluetooth. BrailleBack works with TalkBack for a combined speech and Braille experience.</p> <p><b>Setting customisation controls:</b> includes captions, magnification gestures, large text, high-contrast text, power button ends call, auto-rotate screen, speak password, accessibility shortcut, text-to-speech output, touch-and-hold delay, colour inversion, colour correction.</p>
iOS	n/a	<i>Intuitive by design, iPhone, iPad and iPod touch also come with assistive features that allow PWD to experience the fun and function of iOS. With these innovative technologies built in, iOS devices become powerful and affordable assistive devices</i>	<p><b>VoiceOver:</b> is a screen reader that aids in screen description and navigation.</p> <p><b>Speak screen:</b> reads emails, iMessages, web pages and books. Can be controlled via touch or through voice control (Siri). The voice’s dialect and speaking rate can be adjusted.</p> <p><b>Siri:</b> is Apple’s ‘intelligent assistant’ that operates via voice control. Siri can send messages, place phone calls, schedule meetings, and turn on and off accessibility features. Siri is integrated with VoiceOver.</p> <p><b>Dictation:</b> allows users to talk rather than type. It converts the user’s words (and numbers and characters) into text.</p> <p><b>Zoom:</b> is a built-in magnifier that works across iOS platforms and Apple apps. The zoomed area can be opened in a separate window while keeping the rest of the screen at its original size. Magnification can be adjusted between 100 and 1,500 per cent, and access multiple filter options in either mode. Zoom also works with VoiceOver.</p> <p><b>Font adjustments:</b> converts text. When larger dynamic type is activated, the text inside a range of apps – including Calendar, Contacts, Mail, Messages, Music, Notes and Settings, and even some third-party apps — is converted to a larger, easier to read size.</p> <p><b>Invert colours and greyscale:</b> allows the option of higher contrast or greyscale display, including for videos.</p> <p><b>Braille displays:</b> allow iPad, iPhone (3Gs or later) and iPod touch (3rd generation or later) to support approximately 50 Bluetooth wireless Braille displays. These displays can be paired with supported iOS devices and used in conjunction with VoiceOver. Braille tables are available for different languages.</p>

Hardware	Associated software	Accessibility policy	Accessibility features
			<p><b>FaceTime:</b> facilitates non-verbal communication through video phone calls.</p> <p><b>Closed captions:</b> allows for captions to be turned on and off (when provided by the content provider) – these can be customised with different styles and fonts.</p> <p><b>Mono audio:</b> mitigates the distinct left- and right-channel audio tracks common in recordings by playing both audio channels in both ears. It also allows for adjusted balance for greater volume in either ear.</p> <p><b>Visible and vibrating alerts:</b> delivers both visual and vibrating alerts for incoming phone and FaceTime calls, new text messages, new and sent mail, and Calendar events. LED light flash, photos of callers and different vibrating patterns can also be set for incoming calls and alerts.</p> <p><b>Made for iPhone hearing aids:</b> deliver a “power-efficient, high-quality digital audio experience”, and allows for management of the hearing from the iPhone.</p> <p><b>Assistive touch:</b> lets users adapt the multi-touch screen of their device to specific physical needs. Gestures like rotate and shake are available for mounted devices. Third party assistive devices are also supported.</p> <p><b>Switch control:</b> allows sequential navigation through onscreen items and the performance of specific actions using a Bluetooth-enabled switch hardware. Switch control is customisable.</p> <p><b>Touch accommodations:</b> adjusts how the screen responds to touch.</p> <p><b>Dictation:</b> converts words (and numbers and characters) into text. Predictive text adjusts results based on user preferences and commonly used words.</p> <p><b>Keyboard short cuts:</b> offer a customised shortcut allowing for faster typing. Support for third party keyboards accommodates customised keyboards.</p> <p><b>Hardware keyboard support:</b> assists with the use if a physical keyboard, such as activating sticky keys to combine keystrokes, or slow keys to adjust the amount of time between when a key is pressed and when it is activated.</p> <p><b>Learning tools for people with attention challenges or other cognitive and learning disabilities (guided access):</b> designed for people with autism or other attention and sensory disabilities. Allows for the control and limitation of device displays, such as limiting the apps open at one time, or the amount of time spent in an app, or restricting access to the keyboard or touch input on certain areas of the screen.</p> <p><b>Dictionary:</b> facilitates quick access to definitions and commonly used phrases to help with spelling, pronunciation and grammar.</p> <p><b>Safari reader:</b> reduces the visual clutter on a web page by removing distractions. It removes ads, buttons and navigation bars. Safari reader works with Speak selection and VoiceOver.</p>



Hardware	Associated software	Accessibility policy	Accessibility features
Apple TV	n/a	<i>The new Apple TV was designed with built-in assistive technologies that allow PWD to fully experience television. These powerful yet easy to use accessibility features help you spend less time adjusting to your TV and more time enjoying it</i>	<p><b>VoiceOver (Apple’s screen reader):</b> describes what is on the screen and assists with choosing commands. Available in 30 languages.</p> <p><b>Zoom:</b> is a built-in magnifier, adjustable up to 15 times. Useable with the Siri remote.</p> <p><b>Siri remote and dictation:</b> allows the user to bypass onscreen activation. The remote works off spoken commands. The dictation component lets the users search fields and sign in to apps using voice and spelling commands.</p> <p><b>Bluetooth keyboard:</b> connects to Apple TV providing an alternative way to enter text.</p> <p><b>Closed caption and subtitles for Deaf and hard of hearing (SDH) support:</b> allows for captions to be turned on and off (when provided by the content provider) and customize styles and fonts.</p> <p><b>Remote app for switch control:</b> works from another iOS device, using Switch control. This feature allows users to navigate sequentially through onscreen items and perform commands remotely.</p> <p><b>Other setting controls:</b> includes bold text, increase contrast, reduce motion, accessibility shortcut, touch surface sensitivity.</p>
Chromecast	The Google Cast Accessibility app (for Android)	<i>The Google Cast app for Android works with the following accessibility features to make it easier to use your Android device with your Chromecast or Chromecast Audio if you have physical impairments</i>	<p><b>TalkBack:</b> is a pre-installed screen reader service provided by Google.</p> <p><b>Magnification gestures:</b> temporarily magnifies what is on the screen or uses magnification mode to zoom and pan the screen. Large text increases the text size on your device.</p> <p><b>BrailleBack:</b> works with the TalkBack app to give a combined Braille and speech experience. It connects to a supported refreshable Braille display on the device via Bluetooth. Screen content appears on the Braille display, which is then able to be navigated and interacted with using the keys on the display. Text can also be input using the Braille keyboard.</p> <p><b>Tap and hold delay:</b> is an accessibility feature for those with motor impairments. It provides short, medium, to long touch and hold delay options providing more time to navigate the features of an app.</p> <p><b>Switch access:</b> aids in the control of devices by allowing the user to focus on and select clickable items. This is possible due to configurable key combinations.</p> <p><b>Captions:</b> enables normal-sized written content in white text on a black screen for audible sound on the screen.</p> <p><b>Large text:</b> provides an increased size of the written text on the screen.</p> <p><b>High contrast text (experimental):</b> contrasts the colour of the text to its background – the typical contrast produced is white text against a darker background.</p> <p><b>Power button:</b> ends calls – for those who prefer to use a physical button to end calls.</p> <p><b>Auto-rotate screen:</b> allows the screen to rotate freely. Turning it off locks the screen and prevents it from rotating.</p> <p><b>Speak password:</b> provides an alternative to a typed password.</p> <p><b>Text-to-speech:</b> uses Google’s text-to-speech engine to convert text to speech.</p>



Hardware	Associated software	Accessibility policy	Accessibility features
Xbox	n/a	<i>Ease of access settings bring accessibility options to the Xbox One console. These settings are in the Ease of Access section of Settings, and in some cases, they can be enabled from anywhere on the Home screen</i>	<p><b>Narrator:</b> is a screen reader that can be enabled from the console, from the controller or an attached keyboard.</p> <p><b>Magnifier:</b> is a tool that zooms in on part of the screen.</p> <p><b>Closed captions:</b> are available for supported DVDs, blu-ray discs, and VOD services. Captions can be turned on/off and modified (font, size, colour, style, background and effect).</p> <p><b>High contrast:</b> helps the user distinguish between items and text on the screen. When enabled, users on the console will see light blue focus elements on a black background with prominent white borders.</p> <p><b>Button mapping:</b> allows for customised button use on the device controller. Users can change buttons by remapping its functionality. Requires the Accessories App to configure.</p>
PlayStation	n/a	<i>Select (Settings) &gt; [Accessibility] to configure accessibility features, such as zooming and controller button assignments. Some accessibility settings may only be applied to certain functions or certain screens. Also, the settings may not be applied to your screenshots or video clips, or to images shown in broadcasts</i>	<p><b>Text-to-speech:</b> is a screen reader, and allows users to listen to on-screen text and contextual information. It can be customised for reading speed and volume (available only for systems in certain countries, and functions only when system language is set to English, United States).</p> <p><b>Closed captions subtitling:</b> displays the spoken parts of a video as text, and is only available for supported content. Music and sound effects are also noted. It can be turned on/off, and customised for size and background colour.</p> <p><b>Button assignments:</b> changes controller button assignments.</p> <p><b>Auto-scroll speed:</b> can be adjusted for automatic scrolling.</p> <p><b>Add to quick menu:</b> allows users to add accessibility settings to the quick menu that appears when they hold down the PS button.</p> <p><b>Other setting options:</b> includes zoom, invert colours, larger text, bold text, high contrast.</p>



**Accessing subscription video on demand:**  
A study of disability and streaming television in Australia