

<b>Institution:</b> Swansea University		
<b>Unit of Assessment:</b> 19		
<b>Title of case study:</b> DigCom Equality: Achieving Changes in Broadcaster and Charity Policies to Benefit Sensory Impaired Users of Digital Media in Wales		
<b>Period when the underpinning research was undertaken:</b> 2011-present		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b>	<b>Role(s) (e.g. job title):</b>	<b>Period(s) employed by submitting HEI:</b>
Yan Wu	Associate Professor (Media and Communication), PI	2007-present
Leighton Evans	Senior Lecturer (Media and Communication), Co-I	2017-present
Rhys Jones	Senior Lecturer (Media and Communication), Co-I	2013-present
Elain Price	Lecturer (Media and Communication), Co-I	2007-present
<b>Period when the claimed impact occurred:</b> 2015 - present		
<b>Is this case study continued from a case study submitted in 2014?</b> No		
<b>1. Summary of the impact</b>		
<p>Wu et al's research focuses on the challenges posed for sensory impaired users in Wales by first, the digital switchover of television; and secondly, the broader digitalization of services and information. They have both brought risks of exclusion, 'digital gaps' and the erosion of communicative rights. The research has had an effect on the awareness and understanding of these challenges in Wales by elected representatives, broadcasters, Action on Hearing Loss and the Royal National Institute for the Blind (RNIB). The research on digital television switchover has led to changes in S4C policy on subtitling, with the aim of benefiting access for hard of hearing television users. The research on the challenges of broader digitalization has led to changes in RNIB Cymru policy on how it provides technology and digital skills services for people with sight loss. Additionally, the research has had an effect on the RNIB's development of its Design for Everyone Campaign and award. This has aimed to inspire businesses and designers to embed design principles in new digital technology, which take people with sight loss into account. These impacts have the aims of providing service benefits to people with sight loss, as well as benefiting people with sight loss through influencing new digital technology.</p>		
<b>2. Underpinning research</b>		
<p>All the work for the <i>DigCom Equality</i> initiative has been carried out at Swansea University since 2011 with different phases facilitated by funding from several sources. Specifically, phase I focusing on academic and practitioner interest in the implications for the hard of hearing of television digital switchover, was funded by the University's Bridging the Gaps programme, Action on Hearing Loss, BBC Cymru, S4C and the Coleg Cymraeg (2011-2015). Phases II and III, which broadened the focus to academic and partner interest in the implications for people with sight loss and dual sensory impaired users of the broader development of new digital technologies, were funded by the EPSRC supported Challenging Human Environments and Research Impact for a Sustainable and Healthy Digital Economy (CHERISH-DE) (2018 – present). Wu has been the Principal Investigator for a portfolio of research projects focusing on the communicative rights for people with sensory impairments in the digital age.</p>		
<p>In Phase I of the underpinning research Wu led a consortium funded interdisciplinary research team, which conducted a Wales-wide survey of hard of hearing audiences' use of digital television in 2013. The outcome of this research [R1] revealed that hard of hearing audiences proactively use digital television for information, education, entertainment, and services, but that they face difficulties in accessing quality subtitling and customized services. The resulting Report, published in 2014, was regarded by survey participants as a timely intervention in an area of digital exclusion that had been overlooked by policymakers and campaigners. Based on the empirical evidence</p>		

gathered from this research, a co-authored article [R2] was published in the *International Journal of Digital Television*. This concluded that, despite some improvements in service, difficulties in accessing quality subtitling were still experienced by study participants post-digital switchover and that there were no significant differences in age in experiencing these difficulties. The results, however, also revealed how knowledge of other digital services was subject to significant difference in age. Resultant recommendations included a greater priority on the quality of subtitling by policy makers as well as increased attention by the regulator (Ofcom) and more innovative and powerful interventions in the form of statutory requirements.

Following this work, Wu explored possible cross-national comparisons and lessons learned in terms of digital inclusion via conference participation. Notably, she was invited to present key findings from this research in Beijing, China. Based on a comprehensive literature review of digital inclusivity policies in both the UK and China, she had a co-authored paper [R3] published in one of the Chinese Social Science Citation Index source journals *Modern Communication*, a monthly journal of Communication University of China with the support of National Social Science Fund.

Phase II of the underpinning research (2016-2018) was based on close collaboration with RNIB Cymru, which itself grew out of positive responses to Phase I of the *DigCom Equality* initiative. This research, comprised an in-depth survey of RNIB Cymru members, conducted between March and May 2017, which focused on the experience of the broader digitalisation of services and information. The output of the study, *Digital Media Usage of Sensory Impaired Users in Wales 2018* [R4], examined not only the benefits brought by digital media to sensory impaired users in Wales, but also the barriers and disadvantages affecting people who have sensory loss in using digital technologies. The Report revealed how digital exclusion could be generated by a range of factors, including financial constraints, access to training opportunities, web accessibility and technology design. Its recommendations for improved digital inclusion highlighted the need for sustained training and support, the application of alternative technologies, and adherence to British Standard web accessibility protocols.

In particular, the Report recommended the need for a new technology design agenda in both the public and private sectors. Companies tend to focus on the most active users who usually have stronger purchasing power, and a higher level of digital literacy. Sensory impaired users are often overlooked in this market-driven and technology-oriented approach. Overall the research argued that to tackle the root problem of digital exclusion, academics, policy makers and campaigners must address the socio-economic barriers that create it. The research was the first of its kind to be carried out in Wales and generated wider interest in the issue beyond Wales. For example, a short 'cross-over' related piece by Wu was published by *The Conversation* [C9] later in 2018. This attracted over 4,500 views from countries including the US, France, India, Canada, the Philippines, Singapore, South Africa, and Malaysia and was reposted by various international media outlets.

Phase III of the research (2018- present), in continued collaboration with the RNIB, has developed into a longitudinal study of preferences for and usage of new digital technology by sensory impaired users. This is based on a series of focus groups with repeat participants to develop an enhanced evidence-based understanding of the problems and needs of sensory impaired users in negotiating new digital technology, and how then to develop services to support them. In practice, an element of the research now includes the particular challenges posed for digital usage during the COVID-19 pandemic.

### 3. References to the research

R2 is published in a journal with a SCImago Journal Rank of 0.188 and impact factor of 0.26. R3 is published in a journal of the Chinese Social Science Citation Index source journals. R1 and R4 are grey literature reports published online and presented to related policy-making audiences at various levels in Wales.

**R1** - Wu, Y., Evans, L. and Price, E. (2014). *Digital Television and Deaf/Hard of Hearing Audiences in Wales*. Swansea: Swansea University, 25, (November 2014)

[https://www.swansea.ac.uk/media/Wu-Price-and-Evans-\(2014\)-Digital-Television-and-Hard-of-Hearing-Audiences-in-Wales-Survey-Report.pdf](https://www.swansea.ac.uk/media/Wu-Price-and-Evans-(2014)-Digital-Television-and-Hard-of-Hearing-Audiences-in-Wales-Survey-Report.pdf)

**R2** - Evans, L., Wu, Y., & Price, E. (2015). A new hope? Experiences of accessibility of services in deaf and hard-of-hearing audiences post-digital television switchover. *International Journal of Digital Television* 6 (3), 347-366. doi:10.1386/jdtv.6.3.347\_1

**R3** - Wu, Y. and Zhang, Y. (2017). Opportunities of and challenges to building a digitally inclusive society: the case of the UK 构建数字共融社会的机遇和挑战——英国个案研究. *Modern Communication 现代传播* 21(3), 130-135. doi:10.3969/j.issn.1007-8770.2017.03.024

**R4** - Wu, Y., Lindsay, S., Cable, J., Jones, R., Evans, L. & Xie, X. (2018). Digital Media Usage of Sensory Impaired Users in Wales 2018 Report. Report 11, (October 2018). <https://www.swansea.ac.uk/media/Digital-Media-Usage-of-Sensory-Impaired-Users-in-Wales.pdf>

#### Research has been funded by the following schemes:

Who grant was awarded to	The grant title	Sponsor	Period of the grant (dates)	Value of the grant
Yan Wu	Cherish DE Escalator Fund / International Mobility Fund / Focus Group Fund	Engineering and Physical Sciences Research Council	December 2016	GBP8,051
Yan Wu	-	BBC Cymru	2013 -2015	GBP300
Yan Wu	-	S4C	2013 -2015	GBP300
Yan Wu	-	Action on Hearing Loss	2013 -2015	GBP300
Yan Wu	Bridging the Gaps	Swansea University	2013 -2015	GBP987
Yan Wu	Coleg Cymraeg Cenedlaethol	Swansea University	2013 -2015	GBP1,571
Yan Wu	Bridging the Gaps	Swansea University	2011-2012	GBP800

#### 4. Details of the impact

The Office for National Statistics estimates that in the UK approximately 11,000,000 people are living with hearing loss and 2,000,000 are living with partial sight or blindness. The numbers are rising due to an increasingly aged society. This is happening at the same time as the digitalisation of communication has developed rapidly. The *DigCom Equality* project has provided evidence of digital exclusion and offered recommendations in the specific context of Wales. The research has achieved substantial impact, in terms of both reach and significance, via two principal routes.

##### 1.Changing the Policies of Broadcast Media and Digital TV Switchover

The Report *Digital Television and Deaf/Hard of Hearing Audiences in Wales* [R1] was released online and officially presented to Action on Hearing Loss, BBC Cymru, S4C, and the National Assembly for Wales Cross Party Group on Deaf Issues on 25<sup>th</sup> November 2014. The publication of the research was welcomed by hard of hearing audiences. A dual-sensory impaired user from Neath Port Talbot said on RNIB Connect Radio, ***The research at Swansea University is excellent because they listened. We came from the angle of dual-sensory [loss] and the Neath Talbot Swansea group can't wait to go back. They felt ...valued. They were people***

**feeling valued for a day [in which] their opinion mattered'** [C1]. The Report duly enhanced awareness among Welsh government and charity sector policy actors of the challenges posed for hard of hearing audiences by digital TV switchover. Ann Jones AM, Chair of the Cross-Party Group on Deaf Issues, noted, **'This is a comprehensive and important study into the inclusion of deaf people in broadcasting'** [C2].

The research led directly to three changes in S4C policy on subtitling, based on the findings and recommendations made in the Report. The Deputy Director of Content and Broadcasting at S4C, confirmed that these comprised: (1) changes to the subtitling signs on-screen in order to differentiate between Welsh and English subtitles; (2) the provision of a more prominent place for the subtitling service and how to access them on the S4C website; and (3) the launch of an on-screen campaign to promote Welsh and English subtitles [C3]. This was further confirmed by the Director of Action on Hearing Loss Cymru, who said that the research **'has led to improvements in public broadcasters subtitling coverage'** and **'has been quoted in communications with Ofcom in enabling more effective regulation of access services'** [C4].

S4C made the changes with the aim of benefiting the opportunities of hard of hearing TV audiences. There are no figures specifically available to evidence the benefits of these changes to audiences, but publicly available data indicate that benefits were likely to be significant. In 2019-20, on average 702,000 people throughout the UK watched S4C every week, and 11,500,000 watched S4C at some point during the year. In 2018-19, 8,600,000 people watched S4C programmes using BBC iPlayer and S4C Arlein online. Action on Hearing Loss estimate that there are approximately 575,000 people in Wales with hearing loss. Moreover, according to Ofcom 80% of television viewers use subtitles for reasons other than hearing loss. Overall, this suggests that the hard of hearing audience beneficiaries of the S4C subtitle policy changes that resulted from Wu et al's research were likely to be at least in the tens of thousands per year, and the number of audience beneficiaries overall in the hundreds of thousands.

## **2.Changing Charity Sector Policies and the Digitalisation of Services and Information**

Wu et al's second Report *Digital Media Usage of Sensory Impaired Users in Wales 2018* [R4] presented the key findings from a survey carried out with RNIB Cymru on people with sight loss and dual sensory impairment in 2017. It demonstrated how the level of interest in digital technology among sensory impaired users had not been matched by levels of digital ownership and usage. As noted above, it made recommendations on what obstacles to digital inclusivity needed to be challenged. The research came at a time when the RNIB was conducting a UK-wide project *Online Today*, which sought to enhance the experience of people with sight loss in engaging with digitalization of services and information. Consequently, the Report enhanced the awareness and understanding of the RNIB on these issues as they related to Wales at a crucial time. The Institute's Specialist Lead, Assistive Technology and Digital Inclusion, stated that, **'Before this research RNIB had no specific sight loss related data for digital inclusion in Wales; research was either based upon UK wide data, or more general research covering data from disabled people in Wales.** The Technology for Life Coordinator (TLC) at RNIB Cymru noted that **'the findings of this research have been shared internally with RNIB staff across the organization and with external organizations like Digital Communities Wales, who we work closely with. The feedback has been very positive. This research has been integral to our work to influence policy in Wales'** [C5].

The research also raised the awareness and understanding of issues of digital exclusion for sensory impaired people among government policy actors. The findings of the research were presented at a Welsh Vision Strategy (WVS) event, and circulated among more than 25 WVS members, as well as to the Welsh Government's Digital Inclusion Programme Board. The Board ensures that the needs of blind and partially sighted people in Wales are understood by policymakers. The Digital Inclusion Manager (DIM) at RNIB Cymru, said, **'It is important that this research work feeds into the Welsh Government Digital Inclusion strategic framework. It was showing that the disabled people were less likely to access the digital world. This research work is really important because it is the first opportunity at an all Wales level to give us a sense of what still needs to be done'** [C6]. The DIM stated that the Digital Inclusion

Programme Board benefited as the findings have '**greatly assisted [their] work and will continue to do so in the future**' [C6].

As well as raising awareness and understanding, the research has also directly changed and/or affected RNIB policy and activities in Wales in two ways. First, it has changed RNIB Cymru's approach to providing technology and digital skills services for people with sight loss. The RNIB's Specialist Lead for Assistive Technology and Digital Inclusion, stated that, '**This insight has changed the way RNIB approaches the issue in Wales and allowed our technology and digital skills programmes to be designed, informed and more tailored to Blind and Partially Sighted people in the country**' [C8]. The TLC noted on RNIB Connect Radio, that '**Overall...the research shapes the RNIB's Technology for Life approach**. She continued, *it 'reinforces what we need to do, as RNIB, to facilitate and make it easier for people with sight loss accessing technology'* [C7]. Speaking of the ongoing RNIB-Swansea University research collaboration, the TLC stressed that '**We look forward with pleasure, to continuing our work together, understanding more about the challenges faced by blind and partially sighted people in this area, and using this research to support our work and our community**' [C8].

Secondly, the research had an effect on the RNIB in developing its broad strategy of 'See Things Differently' launched in 2018, which included the See Things Differently Awards. Specifically, through the Design for Everyone campaign and award, RNIB have aimed to inspire businesses and designers to embed inclusive design principles in new digital technology, one of the main recommendations of the Wu et al report. The TLC further stated that '**Learning taken from the analysis and recommendations of the research has been shared with RNIB's Innovation and Social Impact teams, informing their approach in working with commercial organisations, as well as public bodies, particularly informing campaigns such as 'Design for Everyone' aiming to ensure mainstream technological solutions are accessible by those with low vision**' [C8].

These two impacts on RNIB policy have had the aims of providing service benefits to people with sight loss, as well as benefiting people with sight loss through influencing new digital technology for the future. Again, estimating the precise benefit to people of these policy changes is problematic. But given that RNIB Cymru estimate that there are 121,000 people in Wales living with sight loss, the benefit through affecting RNIB digital services provision from 2018 is already likely to be significant.

## 5. Sources to corroborate the impact

**C1** - End user / beneficiary interview (Connect Radio interview)

**C2** - Chair of the Cross-Party Group on Deaf Issues (News Item) <https://www->

[2018.swansea.ac.uk/press-office/news-](https://www-2018.swansea.ac.uk/press-office/news-)

[archive/2014/reportintochallengesfacingdeafandhardofhearingaudiencesinwalespublished.php](https://www-2018.swansea.ac.uk/press-office/news-archive/2014/reportintochallengesfacingdeafandhardofhearingaudiencesinwalespublished.php)

**C3** - Deputy Director of Content and Broadcasting, S4C (Letter)

**C4** - Director, Action on Hearing Loss (Letter)

**C5** - Technology for Life Coordinator at RNIB Cymru (Letter)

**C6** - Digital Inclusion Manager, RNIB Cymru (Connect Radio Interview)

**C7** - Specialist Lead, Assistive Technology and Digital Inclusion, RNIB (Letter)

**C8** - Technology for Life Coordinator at RNIB (Connect Radio Interview)

**C9** - Wu, Y. (2018) 'Sight-impaired people want to use technology but are excluded by cost and accessibility - new research', The Conversation. <https://theconversation.com/sight-impaired-people-want-to-use-technology-but-are-excluded-by-cost-and-accessibility-new-research-103882>