Disability & Digital Citizenship:

Australian Consumers & Citizens with Disability Navigating Digital Society

by Gerard Goggin, Wayne Hawkins, and Aaron Schokman

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Executive Summary & Recommendations

Disability & Digital Citizenship Report

by Gerard Goggin, Wayne Hawkins,
and Aaron Schokman

Executive Summary

Australia has a long history of developments and discussions concerning disability and technology. Yet without the requisite policy frameworks and associated compliance and enforcement mechanisms, tangible progress has remained limited. In this light, this report provides a progress update on disability inclusion and accessibility, noting there is much unfinished business across the key access of access, affordability, and digital ability.

There are many reasons why progress towards full inclusion, participation, and rights for people with disability in Australia's evolving digital society has been so slow. To achieve urgently needed and lasting change, the report proposes adapting and expanding digital citizenship. The report provides a preliminary exploration of how digital citizenship could function as a linchpin for a transformative new framework for underpinning disability and digital technology, and the essential role it plays in fundamental belonging and participation, wellbeing and thriving, rights and justice in Australian society.

In that spirit, we suggest that if digital citizenship is to fulfill its potential and genuinely include Australians with disability we need to have a robust whole-of-society commitment to ameliorating the known digital barriers people with disability currently face and ensure that our future digital society includes all Australians, including people with disability.

Nationally, there are various foundational policy instruments already in place, that are built upon and joined-up, including:

* ***Australia's implementation of its obligations under the the United Nations Convention on the Rights of Persons with Disabilities (CRPD);***

* ***policy and legislation such as the Disability Discrimination Act;***

* ***communication laws as well as envisaged responses to emergent digital technology concerns across a wide front including AI and automation, data privacy, social media platforms disability policy and provision;***

* ***Australia's Disability Strategy and the National Disability Insurance Scheme.***

In addition, there are worthwhile initiatives such as Accessible Telecoms (an ACCAN project), Be Connected (the Federal government initiative aimed at building confidence, online skills and safety of older Australians), and the *First Nations Digital Inclusion plan*.

These could be built on imaginatively as a framework to bring together industry, community, sector and institutional, and other interested groups and leaders, to work with government in an overdue transformation of digital technology for people with disability (something which could also advance progress for other groups).

However, in order for any action to be suc-

cessful we need to reset current and future public policy to focus on addressing disability digital citizenship holistically. In attempting such a bold change, we also need to move away from the policy blindspot of disability being a homogenous population sector.

Both within the disability community more broadly and also within separate disability cohorts there are a multitude of different abilities, barriers and interests. As such, our approach to inclusive disability and digital citizenship needs to be founded upon this. In this light, we make the following recommendations.

Recommendations

In line with the objectives of this research we make the following recommendations. We have grouped the recommendations in the three areas outlined in the research objectives: Research, Policy, Practice.

Research

As outlined throughout the project, there is a need for clarification on both what is Digital Citizenship and more specifically, what is Disability Digital Citizenship. As such, our first research related recommendation is:

Recommendation 1: Research needs to be undertaken to develop a comprehensive definition of disability and digital citizenship.

This research will interrogate the following areas:

* Firstly, a better understanding of the implications for digital technology for citizenship of people with disabilities. this will provide a comprehensive understanding of the state-of-play of disability citizenship in contemporary Australia with a better understanding of the new dimensions and issues of digital citizenship–positive and negative.

* Secondly, what are the new aspects of citizenship for people with disabilities, and across the wider communities, that digital spaces and technologies can support? What of people with disabilities who have barriers to accessing full citizenship or citizenship at all, including refugees (Leung, 2018), asylum seekers, immigrants on range of visas and other residents who are not citizens, while also identifying the Rights and responsibilities of digital citizenship for people with disability.

* Thirdly, this research will provide a clear understanding of digital citizenship across the full range of groups and individuals with disabilities, especially intersectionalities, areas, communities, and individuals with multiple disadvantage, and identify the state-of-play across areas of cultural, political, and other areas of citizenship. It would ask: how do people with disabilities fare in relation to leveraging digital technology for participation?

Recommendation 2: Our second recommendation calls for research to identify and develop a better baseline definition and measure of digital inclusion for people with disability.

This research will endeavour to include those people who do not primarily identify as people with disability but do have impairments which limit their engagement in main-stream digital programs i.e. seniors. This will allow for better statistical measuring and monitoring of digital access and inclusion.

For example, the indicator in the monitoring of the Australian Disability Strategy has been

a start but there are other aspects that are important measurements of digital inclusion, for example, we need to see an ongoing decline in the ADII disability gap over time.

Recommendation 3: Our third recommendation in this section is for research to be undertaken that will identify the current levels of Digital literacy, ability, capability of people with disability.

This research will identify how well are currently digital and media literacy, training and education programs are meeting the needs of people with disabilities, especially those in locations (rural and remote communities) and contexts who have less capacity or who are under-served by available programs.

Policy

The project identified that while there exists a breadth of both Federal and State and Territory policies in place to increase community digital uptake, it has also identified a clear need for a comprehensive national plan for digital inclusion of people with disability.

Our recommendations related to policy initiatives include,

Recommendation 4: the adoption of a whole-of-government policy based on the foundational Closing the Gap Target 17.

Such a policy, with a clear outcomes framework with measurable targets and timeframes will allow for the optimisation of existing Australian disability digital policies.

It will also provide a framework for new and targeted disability digital policies and disability Citizenship policies.

Practice

There are identified barriers for many people with disability in relation to digital inclusion, accessibility, affordability and capability. As such, we make the following recommendations which we believe will ameliorate many of these barriers.

Recommendation 5: All levels of Government implement programs to address digital access barriers for people with disability.

These should include easy to access services and programs that are specific to the various needs of different disability cohorts.

Following this, our second Practice recommendation relates to the barriers of affordability people with disability encounter when accessing the digital environment,

Recommendation 6: All levels of Government implement programs to remove affordability barriers. These programs need to include affordable network connectivity, both fixed and mobile.

For example, the Commonwealth government needs to implement a disability-Affordable nbn service, similar to ACCAN's No Australian Left Offline campaign which proposes a 50 mbps unlimited broadband service offered at a wholesale price of $20 per month by NBN Co.

Additional programs focused on the cost of equipment are also needed to alleviate the affordability barriers incurred as new technology is developed and older equipment becomes obsolete. As highlighted by project participants removing the NDIS arbitrary ban on funding mainstream technology which

for many people with disability acts as an alternative to expensive assistive technology would eliminate unnecessary financial obstacles for those people.

Our final recommendation relates to barriers created by limited digital capability. While the project participants acknowledged that there are many people with disability who are able to traverse the digital environment, there remain many capability barriers for a majority of people with disability. As such we recommend,

Recommendation 7: There be a whole-of-society response to developing accessible digital training opportunities for people with disability.

This needs to be addressed through focused government programs, industry initiatives and by funding disability representative and consumer organisations to develop targeted training programs.

A key aspect of this recommendation is the need for government funding to underpin this digital skills uptake. For example, a funding program similar to the Government's approach to upskilling older Australians needs to be developed for the upskilling of people with disability.

Additionally, we recommend that governments at all levels fund place-based programs for specific disability cohort training.

Moreover, business and digital industry participants are well place to co-design appropriate training programs to upskill people with disability. A successful example of such a program is Telstra's Tech Savvy Seniors program which has recently been expanded to include information focused on the needs of people with disability.

Finally, programs such as the Commonwealth funded Accessible Telecoms service, delivered by ACCAN, provides up-to-date information about digital communications technologies available in the Australian market that is suitable for people with disability and seniors.

Access to digital technologies and services is a basic human right for everyone, including people with disability. For people with disability, their right to access technology is enshrined in the *United Nations Convention on the Rights of Persons with Disabilities (CRPD) (Lazar & Stein, 2017; UN, 2006)*.

However, many people with disability continue to face digital exclusion for reasons including "prohibitive costs of digital technologies, the limitations of current technologies and a lack of digital education and training" (ACCAN, 2022, p.4; ACCAN, 2024, p. 24).

Some jurisdictions have pushed forward with moves in this space, such as the European Union (*European Accessibility Act* 2019), Canada (*Accessible Canada Act* 2019) and the U.S. (2024 final rule on accessibility of web content and mobile apps, Title II, *Americans with Disability Act* – DoJ, 2024).

For its part, Australia has lagged behind enacting rights to accessible technology in alignment with the UN CRPD.

How societies secure the benefits of technology for all their members is a major global challenge. This imperative goes hand-in-hand with inclusive futures, because technology underpins many aspects of of modern-day life.

Disability is a dynamic cross-cutting area of technology being given overdue attention by researchers, technology enterprises and designers, policy makers and institutions.

Yet how well the diverse population of people with disability fit into systems, plans, visions, and social shaping of technology is something that is unclear at the present time.

Specifically:

* ***The evidence base for relatively well-established areas of digital inclusion*** – such as mobile phones and Internet (integral to the UN Sustainable Development Goals), when it comes to people with disability is sparse and incomplete. What research is available points to major shortfalls and gaps;

* ***Research on the experience and innovations of people with disability*** as consumers and users when it comes to adoption, adaptation, shortcomings, challenges and so on of digital technologies is lacking;

* ***What digital citizenship means for people with disability is not clear.*** For instance, the ways in which people with disability use technologies to access government services, engage in media and entertainment, or arts and culture, participate in political life, and other important areas need to be better captured in design, policy, and research;

* ***How inclusive design and the needs and requirements of people with disability is being factored into emerging and future technologies*** – such as AI, Virtual Reality/Augmented Reality, digital transaction technologies and platforms, and future mobile technologies–has not been properly addressed or researched;

* ***What people with disability think about digital inclusion and digital citizenship policies has received little attention*** from researchers, technology developers and designers, and policy makers.

As a collaboration with the Australian Communications Consumer Action Network (ACCAN), this project aims to break fresh

ground to offer a scoping study on disability and digital citizenship in Australia.

Our hope is that the project will provide an essential foundational stone for the development of a research, policy, and practice agenda to tackle disability and digital citizenship in Australia – paving the way for the essential collaborative work needed.

We also hope the study will provide a useful contribution to international work on disability, digital technology, and social participation and equality.

Approach

The project was jointly designed and conducted by a team based in Faculty of Arts and Social Sciences at the University of Sydney (USYD), led by Professor Gerard Goggin (then based in the Discipline of Media and Communications; subsequently in the Institute for Culture and Society, Western Sydney University); and the Australian Communications Consumer Action Network (ACCAN) (at that time led by Dr Wayne Hawkins; subsequently an Adjunct Fellow at Western Sydney University). The researcher on the project who carried out the bulk of the work was Dr Aaron Schokman, based at USYD.

The project sought to match and bring together USYD's research capabilities in disability, digital inequalities, digital society and policy, and digital cultures, with the policy, advocacy, research, and leadership capabilities of Australia's peak organisation for communication consumers and its members.

The project was guided by ACCAN's Disability Advisory Forum (DAF), which comprises representatives from a wide range of national and state disability, Deaf, and Blind organisations.

The project revolved around three broad questions:

1. What are the issues people with disability are facing when it comes to digital access, use, affordability, skills, and outcomes?

2. What are people with disability able to do? What are the barriers that are stopping them?

3. What are people with disability wanting digital inclusion and inclusive digital futures to look like? What would key benchmarks be, from their perspectives?

The project proceeded from the understanding that people with disability are a very diverse group, and many experience multiple disadvantage and inequality. It is not a homogenous group, nor is a "one size fits all" approach possible. Accordingly, the project was mindful of the need to map and analyse barriers specific to different cohorts of people with disability, and of the complex and rich intersectionalities among groups and individuals.

The Research

The main research for the project was conducted from July to December 2023, comprising

⋆ collection and analysis of relevant academic research literature;

⋆ collection and analysis of relevant policy reports, submissions, and other "grey literature" in the public domain, especially from NGO and

disability sectors and organisations;

**** discussions with key disability, consumer, and digital inclusion organisations and stakeholders, as well as disability technology experts and researchers;***

**** a workshop held at the University of Sydney in November 2023.***

Throughout the project, feedback was provided via ACCAN staff and members of its DAF.

The research was written up and finalised at the Institute of Culture and Society in 2024.

A draft report was circulated for feedback to ACCAN representatives, participants, key organisations, experts, and researchers in May-July 2024. This is the final version of the report, published in October 2024.

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The finalisation of the project report, its publication, and launch workshop were supported by the Institute of Culture and Society, Western Sydney University.

We wish to acknowledge and thank the invaluable input and feedback from a wide range of disability and technology organisations, representatives and advocates, practitioners and researchers, who generously spoke to us, suggested resources, and made available their work. This report builds on decades of such work, especially the various reports and submissions from consumer and disability advocacy groups, as well as the work of ACCAN (including the work of Elie Antonios on "*Barriers to Digital Inclusion for People with Disability*").

We also are indebted to the work of the Australian Digital Inclusion Index (ADII) group, participants in the Australian Digital Inclusion Alliance (ADII), various NGO and advocacy groups, research by policy practitioners and regulators, and academic research. In return, we hope this report illuminates key elements of the future agenda of disability and digital inclusion, inequalities, and citizenship.

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Digital Inclusion and Disability: Chapter 2

Unfinished Business & the Road Ahead

An ideal accessible communications sector is one in which there are no barriers. People with disability and accessibility needs would have full and equal access to all communications technologies and services. – ACCAN, Ideal Accessible Communications Roadmap, 2020

Introduction

For over 20 years, digital inclusion has been widely discussed. In recent years it has an encore performance as commonly used term in public discourse, research, and public policy, providing a boundary category for governments, technology providers, designers, institutions, and communities as they grapple with the expanding nature of digital technology in society (Tsatsou, 2022).

Digital inclusion overlaps and is often used interchangeably with two other major keywords, even when there are other tensions among them.

The second keyword is "digital divide". The digital divide is a term that first appeared in U.S. discussions and policy in the mid-1990s that still has currency (van Dijk, 2020). There is an early line of work on disability and digital divide (Dobransky & Hargittai, 2006; Jaeger, 2012) that offered robust and important perspectives before broader research and public interest existed in this topic. One of the advantages of the digital divide as a catch-cry is that it puts the issues of digital inclusion and exclusion in stark relief.

As recognized early on (e.g. Mossberger et al., 2003; Warschauer, 2003), the major problem with the term is that the "divide"–and the "divides"– and their relationships to digital inclusion (Andreasson, 2015) are more complex than they first seem (Dobransky & Hargittai, 2016; Ragnedda & Muschert, 2018), involving the interaction of various levels (van Dijk, 2020).

The third keyword is "digital inequality".

Digital inequality has the benefit of engaging the rich heritage of research and debates on inequalities, especially social inequalities (Hargittai, 2021; Helsper, 2021; van Deursen, et al., 2021). The concept of digital inequality promises precision when it comes to the two interlinked issues in "ethical analysis of inequality", posed by the distinguished economist Amartya Sen: "(1) Why equality? (2) Equality of what?" (Sen, 1992, p. 12; cf. van Dijk, 2020, p. 12ff).

This kind of precision is especially helpful when it comes disability and social and digital inequalities (Goggin, 2021a), which can be hard-to-pin, or even for some attract a sense of disbelief given the reflex view that digital technologies have been a gamechanger in reduce inequality. In any case, as yet digital inequality does not enjoy the wide recognition or acceptance in public policy and discourse that the terms digital inclusion or divides do (Goggin, 2018; Marshall, 2024).

In this report we will shortly discuss and critically put forward a fourth term, "digital citizenship". But first it is important to note that all these terms and other cognates have their histories and merits, picking up important aspects of and concerns about digital technology–as well as their shortcoming.

Digital inclusion has proven especially handy and flexible, despite concerns about its fuzziness and imprecision. We think this is because it contains the kernel of the central aspiration of digital society that digital technologies should be in the hands of and benefit all, especially in societies which rely upon and are increasingly structured by and around digital technologies.

In Australia, due to the work of many, but especially the Australian Digital Inclusion Alliance (ADIA) (https://www.digitalinclusion.org.au/) and the *Australian Digital Inclusion Index (ADII)* (https://www.digitalinclusionindex.org.au/) which aim for broadening the general understanding of this area, digital inclusion has been an anchor point for policy.

The ADIA suggests:

* ***At its heart, digital inclusion is about social and economic participation: using online and mobile technologies to improve skills, enhance quality of life, educate and promote wellbeing across the whole of society.***

* ***We believe everyone in Australia should be able to make full use of digital technologies. (ADIA, 2020a)***

In its 2020 National Digital Inclusion Roadmap, the ADII suggested that "being digitally included means":

* ***A person has affordable access to high-quality internet, and owns appropriate devices to utilise the internet.***

* ***A person can use the internet in an accessible way, whether they are living with disability, from culturally or linguistically diverse backgrounds, or with other needs.***

* ***A person has the ability, skills and confidence to complete tasks on and benefit from the internet. (ADIA, 2020b)***

For its part, the ADII project defines digital inclusion as "ensuring that all Australians can access and use digital technologies effectively" (Thomas et al., 2023). When it comes to disability, we find that many organizations as well as policymakers describe the needs and concerns of people with disability through the lens of digital inclusion.

Against this backdrop, in this chapter we will discuss disability in relation to digital inclusion. In the following chapter, we seek to go beyond digital inclusion by looking at disability in relation to digital citizenship–arguing that, while not without its own problems, a rethought citizenship lens helps us to fully examine and grasp the expanding range of issues societies face.

Disability and Digital Inclusion

Overview

Stretching back to the 1970s, governments have been keen to position Australia in relation to successive waves of emerging technology — and, bit by bit, understand and address concerns for inclusion of all especially as the tackling these challenges are clearly core to digital lives. In recent years,

successive Australian Governments and their agencies have made the embrace of digital technologies a priority, supported by key stakeholders in business, industry, institutions, and civil society (BCA, 2023).

Key "headline' policies include:

* ***the Digital Economy Strategy, which set out how Australia will become a leading digital economy by 2030 (PMC, 2021);***

* ***Digital government strategies, including the Digital Transformation Agenda (and establishment of the Digital Transformation Office (Turnbull, 2015), and the Data and Digital Government Strategy, outlining how the "Australian Government will deliver simple, secure and connected public services for all people and business through world class data and digital capabilities" (Australian Government, 2023). State and Territories governments followed suit with digital government and economy strategies, such as ACT's Digital Strategy, NSW's Beyond Digital, and Queensland's Our Thriving Digital Future.***

* ***strategically critical areas such as AI, and the need to develop national capabilities (CSIRO, 2024; DEWR, 2023), increase investment and training in this area;***

* ***Digital Health Blueprint and Action Plan (DoHAC, 2023), and National Digital Health Strategy 2023-2028 (ADHA, 2023).***

Many areas of digital technology policy involve disability and have significant implications for people with disability and how a fair, fully inclusive, and thriving society is conceived.

For instance, there is a general trend in government towards digital products, interfaces, and solutions for the delivery of an array of social services. In many cases, the adoption of these solutions is not optional. Despite years of design and delivery of government services underpinned by digital information and registration, websites, apps, platforms, highly concerning issues of poor service, inaccessibility, and exclusion abound. As a disability policy advocate consulted in this research put it:

> People are being forced to use technologies to access government services rather than finding their way to digital engagement and delivery through their own choice and preferences. Given the inaccessible nature of many of these services and the absence of disabled perspectives from their design, this forced adoption has interesting equity and rights implications that warrant further investigation.

Despite the pervasiveness of digital technology for all in society including people with disability, only a few contain explicit and systematic acknowledgement of disability and digital inclusion–despite the fact that it has been now been seriously acknowledged as a key success factor (for an example of a good attempt to do this see the "Closing the Digital Divide" priority in Queensland's digital economy strategy, Qld Govt, 2023; cf. Deuzanni et al., 2023).

Instead many policies still exhibit significant shortcomings in terms of adequately addressing issues of disability and accessibility, especially capturing areas of diversity, intersectionality, and multiple kinds of exclusion and disadvantage (Martin & Goggin, 2016).

This is a profound missed opportunity, given that disability offers powerful and generative insights for other areas of digital inclusion, and for how we understand digital societies and social inclusion in general.

This situation persists, even though digital inclusion for people with disability sometime ago moved centre-stage in digital inclusion discussions, recognized as an important area in its own right (Goggin, Ellis, & Hawkins, 2019).

In the COVID-19 period, disability was highlighted as an urgent area of pandemic rapid responses to fixing digital inclusion. Activists, communities, policymakers and researchers devoted significant attention to digital inclusion and disability, so that a worldwide legacy of COVID-19 is fresh work, perspectives, and approaches exploring, mapping, and advancing our understanding (Biao & Halvorsen, 2021; Chadwick et al., 2023; Engelbrecht et al., 2023; Hargittai, 2022; Goggin & Ellis, 2020; Jashinsky et al., 2021; Xie et al., 2020).

Great hopes were raised in the pandemic that the pain and suffering, and lessons learnt would be permanently etched in the infrastructure, best practice, and culture of how to enact digital accessibility, inclusion, and rights for people with disability; however, the post-pandemic record has been mixed at best.

Digital inclusion for people with disability has seen some progress but still lags significantly. The pace of digitisation is growing at a high rate which creates significant potential risk. At this stage, it is important to pay attention to and analyze what occurs to actual social inclusion and citizenship in digital inclusion discourse, policies, and practices—something to which we will return.

This is especially the case that there is a range of gradations of exclusion and inclusion, operating on diversity of people and communities in inclusion policy (Dominelli, 2014; Glenn, 2011).

Australian Policy in Detail

Since the 1970s, Australia has progressively if slowly paid attention to disability and digital technology. Initially policy efforts centred in inclusion and accessibility of telecommunications, mobiles, Internet, and social media technology (Bourk, 2010; Goggin, Hollier & Hawkins, 2017; Hawkins, 2020; Harpur, 2017), then expanded across the gamut of digital formats, and obvious new areas for audiences and users such as the need for captioning and audio description in new developments in broadcast such as streaming services (Ellis, 2019).

In parallel, assistive technology has evolved. Assistive technology has ben placed in other policy and service provision frameworks.

Previously the responsibility of state governments, with the advent of the NDIS, assistive technology for people with disability under 65 years of age that meet the “reasonable and necessary criteria” is provided by the NDIS scheme (NDIS, 2023).

Access to assistive technology is also supported by a range of other schemes, including Home Care Packages, Commonwealth Home Support Programme and the Department of Veteran Affairs as well as compensation schemes (Aplin & Gustafsson, 2024); Layton & Brusco, 2022).

This is a problem, as the 2023 NDIS Review highlighted:

> Assistive technology for people outside the NDIS is under-funded, fragmented, and complex. There are approximately 108 different schemes in addition to the NDIS where assistive technology can be provided, each with different eligibility criteria. (NDIS Review, 2023, p. 57)

Overall, in Australia there are well documented problems with the current approaches to assistive technology, and its reliance on market competition. These issues include the narrow focus on cost justification of options, lack of information, challenges in navigating the system, need for better coordination of support (Aplin & Gustafsson, 2024: NDIS Review, 2023a & b; Steel et al., 2016). People with disability, assistive technology users, providers, and researchers have underscored the importance of transformative changes needed to ensure adequate consumer-driven provision of assistive technology to enhance capability and pave the way to full equality and societal well-being ((Layton et al., 2023; Layton & Borg, 2023; Steele, 2019, 2023).

As part of its response to the NDIS Review, the government introduced changes to legislation which resulted in the National Disability Insurance Scheme Amendment (Getting the NDIS Back on Track No. 1) Act 2024, which took effect in early October 2024. The key change was a new definition of NDIS supports, including assistive technology–with the fine detail to be worked out. Here we note the concerns that a range of devices, especially mainstream goods and devices (for example, a smartphone with good accessibility) may be considered not appropriate for funding as part of the NDIS supports lists (NDIS, 2024a & b).

The right to digital technology for people with disability across an expanded range of areas of social life is now recognized as a high priority for Australia. Notably it is prominent in policy priorities for major outcomes areas in *Australia's Disability Strategy (2023)*. In the area of "Personal and Community Support", there is the key priority that: "People with disability are supported to access assistive technology" (Policy Priority 4) (DSS, 2022).

In the area of "Inclusive Homes and Communities", there are two inter-related policy priorities that speak to expanded notions of digital inclusion and citizenship:

* ***"People with disability are able to fully participate in social, recreational, sporting, religious and cultural life" (Policy Priority 3);***

* ***"The built and natural environment is accessible" (Policy Priority 4).***

In regard to the latter, it is important to note that the built environment continues to merge with the technological environment – something evident in urban futures, planning, and construction (Barns, 2020; Foth, 2009).

This is evident in retail built environments; for example, when a customer of a food outlet is faced with a machine to place an order with, as part of the automation and digitization of transactions (Borowski-Beszta et al., 2023).

This trend has considerable implications for disability (Kapsalis et al., 2024; Zhuang et al., 2023).

The digital inclusion gap is tracked in the annual reports of the "Outcomes Framework" of the Australia's Disability Strategy. Under the outcome area of "Inclusive Homes and Communities", it is construed as the priority

of “Information and Communication Systems Accessibility” (AIWH, 2023a). The measure used is the “Difference in digital inclusion between people with disability and the Australian population” (AIHW, 2023a, pp. 43-44).

This measurement and the data relied upon comes from the ADII, mentioned above. This a longitudinal study which continues as collaboration between the Australian Research Centre for Automated Decision-Making & Society at RMIT University and Telstra (Thomas et al., 2023). The ADII defines digital inclusion as “ensuring that all Australians can access and use digital technologies effectively” (Thomas et al., 2023). The instigators of the ADII felt that there was a need for such an index, so that digital inclusion could be conceptualized, captured, and tracked:

> The Australian Digital Inclusion Index will measure the level of digital inclusion of the Australian population as a whole and monitor this over time. The construction and results of the index will be transparent. Any community in Australia will be able to replicate the index to compare their results against Australia as whole and if they are able, to do this over time. (Swinburne ISR et al., 2015)

From the publication of the first report in 2016 (Thomas et al., 2016), the ADII has grown in visibility and usefulness for policymakers and the wider community.

The ADII offers a snapshot of the levels of digital inclusion experienced by communities across Australia, based on an index of three dimensions for measuring a person’s levels of digital inclusion: Access, Affordability and Digital Ability. Since inception, but especially since a change in the survey design and data collection from 2020-2021 onwards (Thomas et al., 2021), ADII has become a key measure of digital inclusion for people with disability.

Thus, the 2023 ADII figures show that 24.5% of people with disability are highly digitally excluded (Thomas et al., 2023, p. 10).

While there have been welcome improvements, people with disability continue to face digital exclusion. This is a crucial point, pointing to the need for further exploration of equity in the digital space. Given the gap and the trend towards digital-only access for many products and services it is more vital than ever that the proper inclusion and resourcing of disabled perspectives in the design of mainstream online services and environments becomes routine.

Before we proceed to unpack the different aspects of disability and digital inclusion, it is important to consider how the Australian government tracks this–relying on the ADII.

For its purposes, Australia’s Disability Strategy tracks the “difference in the ADII score between people with disability and the Australian population, rather than the proportional difference between the two populations” (AIWH, 2023b).

The reason given for this by the responsible agency, the Australian Institute of Health and Welfare, is that the “desired population outcome for this measure is an increase in people with disability being able to access communication and information networks” (AIHW, 2023a, 31).

In 2022, the “digital inclusion gap between people with disability and the Australian population widened from 9.1 points in 2021 to 11.7 points in 2022” which is a “regress” in terms of “progress status” (AIHW, 2023a, xi,

31).

The report notes this existing tracking measure for digital inclusion in Australia's Disability Strategy (namely, as just discussed–the difference in ADII score between people with disability and the Australian population) will be "replaced in the future by 'Proportion of people with disability reporting the internet sites and apps they want to use are accessible' " (AIHW, 2023a, 31).

It is unclear what the rationale for this change would be. Nor is it clear how it considers and measures widely used digital terminals and interfaces. These include self service maps at shopping centres instead of staffed kiosks, ordering machines at restaurants, self service queue machines at government departments, self check in terminals, and so on (Harvey et al., 2023; Park et al., 2023; Vilnai-Yavetz et al, 2024). In the discussion of future measures, this "population measure" is grouped with a "system measure" that would logically be related to it, namely:

"Proportion of Australian, state and territory, and local government websites that meet Web Content Accessibility Guidelines (WCAG) 2.0 accessibility standard or above (system measure)" (AIHW, 2023c).

Reflecting on the digital inclusion gap and how it may best be measured and tracked, we note at at the same time that disabled citizens are being formed to manage more and more of their lives online, the gap between them and the rest of the population in terms of inclusion is at best slowly improving but in various respects widening. As one respondent to this report suggested, "the increase in usage has not been coupled with a commensurate increase in consideration of the unique and diverse access needs" of people with disability.

The gap results both from access issues with current hardware, software, online spaces, and so on, and the impact of historic access issues in those domains that shape community understanding of the role and potential of devices and technology. A respondent explained that:

The general public has had their digital ability built in a scaffolded manner over time as devices and connectivity have developed and new cultural norms around their usage have emerged. For many deafblind people their digital uptake began in earnest with the advent of smartphones and social media.

Not all people online currently got there via the same route and therefore don't have the same capabilities or expectations across a range of digital spaces.

An important new reference point in the National Disability Strategy is the National Disability Data Asset initiative (NDDA). The NDDA aims to "deliver a single source of information combining Commonwealth, state and territory data on people with disability" (Rishworth & Shorten, 2023). The government has made significant efforts to involve disability leadership and input into its shaping, including in the membership of its NDDA Council that has the role to "make sure the disability data asset is used correctly" (NDDA, 2024a).

In various consultations in the development of the Asset, concerns were raised–summed up in a key recommendation of a Sydney Policy Lab report on the need to "build inclusivity and accessibility into all aspects of the NDDA to represent and meet diverse needs and cultures within the disability community"

(Sydney Policy Lab, 2022, p. 39).

The NDAA's draft Charter of April 2024 includes important principles to allay many concerns such as what kind of decisions will be made drawing on the data in the Asset (NDDA, 2024b).

Despite these acknowledgements, signal concerns remain about how representative and inclusion the data sets constituting the asset will be. To take one telling example that shows the stakes for other groups also, Deafblindness is not recorded or recognized in many of the administrative data sets being linked together to form Disability Data Asset.

As such, Deafblind people are one group that risk being left out of the "picture" that the collective data assembles—and subsequently left out of decisions that affect them; a real concern for such a diverse and little understood community. On the face of it, there would be significant concerns if this change occurs.

Such a new measure of system and population dimensions of web, Internet, and app accessibility would be welcome–indeed well overdue. However, it goes hand-in-hand with other important measures of digital inclusion for people with disability not yet given much attention. Consider, for instance, in its submission to the Department of Social Security in its consultation on the current Disability Strategy,

ACCAN recommended that:

* ***The Strategy must report against measures relating to the accessibility and use of digital communications technologies (including internet and phone services), rates of digital inclusion, and the use of accessibility features on audio-visual content. (ACCAN, 2020b, Recommendation 29)***

From this general level discussion of digital inclusion, we will proceed to discuss the key elements of this for people with disability – especially considering the question of: what are the needs and concerns experienced by disabled people when navigating digital landscapes?

To do this, we will adopt the categories used by the ADII.

Access

Access to digital technologies and services is a basic human right for everyone, including people with disability. This is embedded in the UN Sustainable Development Goals, as well as initiatives by UNESCO (Internet universality indicators), ITU, and others. Attention has particularly centred on Internet and mobile phones as two key technologies for benchmarking access.

For people with disability, their right to access digital technology is enshrined in the landmark UN CRPD of which Australia is a signatory (Beaupert et al., 2017; Franziska et al., 2022; Harpur, 2017). Notable provisions include Article 3 (General Principles – especially Principle 6. Accessibility) and Article 9 (Accessibility).

The right to access digital technology is also referenced in important ways in other Articles, such as Article 21 (Freedom of expression and opinion, and access to information), Article 29 (Participation in political and public life), Article 30 (Participation in cultural life, recreation, leisure and sport).

As digital technologies become more commonplace, accessible technologies become crucial to execution of a range of these and other CRPD obligations. Consider Article 21 – Freedom of expression and opinion, and access to information. Here accessibility underpins citizenship. For instance, It is not just a right to accessible information – for instance, in sign language; it is a right to use sign language in a citizen's interactions.

This example illustrates the need to go beyond access to frameworks for effective and equitable citizenship. Other examples of digital technology and CRPD obligations include:

Article 11 *- Situations of risk and humanitarian emergencies: where accessible technologies in disaster and emergencies have been increasingly highlighted as essential*

Article 12 *– Equal recognition before the law: where key parts of processes of justice and courts, for instance, have become digitalized*

Article 16 *- Freedom from exploitation, violence and abuse: for instance, Article 16.2 where accessible technologies play a crucial role in support, information, and education*

Article 18 *– Liberty of movement and nationality: for instance, systems around passport access, information on immigration and citizenship*

Article 19 *– Living Independently and being including in the community: for instance, the ability to use things such as: real estate websites and apps; digital interfaces and apps for finding and engaging support workers; the NDIS portal; websites, information and interfaces for community services and facilities;*

Article 22 *– Respect for privacy: Inaccessible technologies often mean that disabled users have to compromise on privacy – such as not being able to access customer service over the phone via an interpreter; or not being able to use touch screen ETFPOS machines (with potentially rights endangering consequences such as having to divulge PIN information to staff or support workers.*

Article 24 *– Education: Accessible technology cuts across various elements of the right of people with disability to education, especially with the rise of technology across classrooms and educational settings.*

Article 25 *– Health: Access to bookings for health services and information often has a digital step in the process. Accessible technology and digital environments are key enablers to access to services and population-based public health programmes*

Article 27 *– Work and Employment: Several elements of the right to work and employment have technological drivers or facets – something highlighted with the rise of digital platforms as an essential feature of workplaces, as well as emergent developments in AI and automation highlighted in recruitment as well as workforce participation (Zhuang & Goggin, 2024)*

To advance implementation of these important overarching provisions, it is worth considering the state-of-play of the domestic law and standards framework unpacking how to understand and ensure access in Australia in relation to the UNCRPD.

As the Australian Human Rights Commission noted in its landmark 2021 report, 'Australia has voluntarily agreed to comply with human rights standards and to integrate them into

domestic law, policy and practice' (AHRC, 2021, p. 10). For example, Australia has adopted AS EN 301 549: 2016 (Accessibility requirements suitable for public procurement of ICT products and services).

While the Commonwealth Procurement Rules refer to this requirement when procuring ICT, as yet there is no formal compliance or enforcement mechanism (Dept of Finance, 2023, p. 29; see also *National Disability Services BuyAbility Initiative*; https://buyability.org.au/).

At an overarching level, the Disability Discrimination Act is the primary domestic legislation relating to the UNCRPD, but does not yet speak of digital technology or digital access. However, more than anything, the task of putting into concrete effect the various items of the CDRP requires work on developing a framework and suite of domestic laws and regulations.

The leading model for this general framework is the integrated approach recommended by the AHRC (AHRC, 2021, p. 1), pivoting on the "PANEL" principles (Participation-Accountability-Non-discriminatory and equality-Empowerment and capability building-Legality) developed by the Scottish Human Rights Commission (SHRC, 2024), and adopted in Scotland's *National Dementia Strategy* (Cahill, 2018, p. 64). A centrepiece proposal from the AHRC report is that:

> The Attorney-General should: (a) develop a Digital Communication Technology Standard under section 31 of the Disability Discrimination Act 1992 (Cth), and (b) consider other law and policy reform to implement the full range of accessibility obligations regarding Digital Communication Technologies under the Convention on the Rights of Persons with Disabilities. In doing so, the Attorney-General should consult widely, especially with people with disability and the technology sector. (Recommendation 24, AHRC, 2021, p. 196)

Nearly 2 decades on from the CRPD entering into force, and nearly 5 years after the Australian Human Rights Commission provided a blueprint for how the rights of people with disability to digital technology can be properly activated, Australia's approach remains piecemeal and underwhelming.

The consequences of the lack of a general, comprehensive framework on disability rights and digital technology can be glimpsed when we reflect on the holistic nature of access and participation, especially with the their essential nature in contemporary social life.

As disability research has highlighted, access–especially fair, effective, appropriate, ongoing individual and collective access–is a complex concept and reality for many people with disability (Titchkovsky, 2011). When we add the contemporary conditions and nature of digital technology, participations, and connections to this, access becomes even more nuanced – though even more fundamental.

Accordingly, digital access is typically understood in much broad terms, encompassing the ability to connect, and the nature and quality of connectivity, to the digital world.

Digital accessibility encompasses issues around staying connected such as high-set up costs (covered in affordability below), inadequate technical support and exclusive design practices (Watling, 2011).

In its 2021 revision, the ADII updated the category of "Access" to:

> … reflect changes in technology, and telecommunication product offerings. The ADII now measures Access via four components: Speed and data allowance, Intensity and frequency of access, Connection type, Device. For the first time our measure of Access includes personal technologies such as voice-controlled smart speakers and smartwatches. We also consider 5G as a superior mobile technology and differentiate fixed broadband based on speed. (Thomas et al., 2021, p. 11).

Digital accessibility also includes ensuring that information contained within digital spaces is appropriate for persons with disability to consume. These updated realities of digital accessibility for people with disabilities and business, organizations, organizations, communities, and individuals serving and engaging with them are something that technology design, business models, and service delivery.

In relation to disability, access is very often closely tied to questions of accessibility and inclusive design—and their changing nature Langdon et al., 2018; Lazar, Goldstein & Taylor, 2015; Langdon et al., 2020). Many people with disability believe that accessibility issues today are different to those faced from the 1980s onwards, something voiced by various participants in our projects.

Rather than primarily being issues related to broad limitations of existing technology and in some cases, lack-thereof, many concerns raised throughout our discussions and workshop tended to be disability specific, and occurred in the process of using and configuring digital technologies once consumers have access to them.

For instance, Blind people, people with vision impairment, and Deafblind people can face barriers in accessing or using:

∗ Online software such as for the purposes of conferencing or collaborating, especially for people who require voice readers (Ellis et al., 2021; Locke et al., 2021)
∗ Facial recognition technology for people with eye or facial differences (AHCR, p. 147); Media content without appropriate audio-description (Goggin et al., 2017, p. 11).

∗ Digital and web content that is not compliant with the latest Web Content Accessibility Guidelines in terms of: appropriate colour contrast schemes and ratios; font size; navigation of pages and links; descriptive hyperlinks; accessible PDF documents; app use on mobile phones (CAA, 2021).

∗ Smartphones, where the level of vision and the duration of time people experience low vision or blindness affects their access to and use of these mobile technologies.

∗ Services where a form of registering might be accessible from a technical perspective but may not have capacity to accept any identity verification other than a driver's licence number. This is an example of of the hidden accessibility issues that are not purely digital in origin––or highlight the interplay between the social and the technical.

In our research, participants highlighted and expanded on issues in using technologies such as Zoom and Teams, and other digital communications platforms, now commonly

used across work, education, community, and household settings (Knight, 2021). For instance:

∗ Some accents are incompatible with voice recognition, voice-to-text, and captioning software. It can often make it very difficult for persons with disability who rely on these accessibility features to engage with mainstream services (e.g. international call centres);

∗ Being aware of, installing, and learning how to use upgrades and updates. One example given in Zoom and similar platforms was the movement of captioning button to different places in the software package and interface;

∗ In the widespread use of video communication, limited guidance around camera settings and lighting can make it difficult to lip read due to inadequate contrast and shadows.

Such platforms are now the primary mechanisms through which much governmental consulting, co-design, and information sharing take place. So there are large implications for participation and representation in public life related to this digital turn, including inside the disability sector and communities themselves.

Overall, these examples highlight that issues around participation are not uniform across the disability sector, especially given the new digital inclusion dimensions and requirements of participation in video conference (Kennedy et al., 2021).

Studies of video conferencing tools and disability have noted the need for better and more user friendly accessibility and assistive technology features:

> Developer recommendations include several easy to set customisation and user friendly interface features, involving disabled people and specific accessibility features, including compatibility with assistive technology, keyboard shortcuts for all functions and automatically-on high quality captions. (Hersh et al., 2024; see also Doush et al., 2023)

The issues in specific software and systems adds another layer to visual accessibility configuration and options in operating systems (OS) (Kouhoué et al., 2021). However, contemporary accessibility issues are often considered to be problems created by people, resources and time, and insufficient policy direction. That is, what can be a pivotal factor is decisions not to include accessibility despite technology being available (Vanderheiden et al., 2022; Yesilada & Harper 2019).

Not-for-profit organisations are also aware of this issue (see recommendations on this area in Dezuanni et al., 2023).

Many are engaged in activities to try and improve digital access by advocating for increased implementation, funding and how best to use existing technology to meet specific needs of the individuals they represent. Others have developed bespoke digital solutions, providing education and knowledge resources or offer services to increase skills and knowledge. Many are also active and engaged in lobbying and advocating for their representatives through partnerships with other not-for profits, government entities and research institutions.

In our project, a number of key issues that persons with disability face when accessing digital society were in the fore:

∗ Some family/guardians do not appreciate the value of technology: For persons with a disability who may not be able to advocate for themselves or have a guardian, a major barrier to digital participation can be convincing family/guardians of the value/benefit of technology. Sometimes, family/guardians may believe that persons don't necessarily "need" the technology;

∗ Many of the digital services offered do not consider persons with intellectual disability (Guedes et al., 2022). Both public and private digital services are not written in plain, easy-to-understand language. It is a problem for apps as these tend to be coded/designed a certain way. Few digital services are written using easy-to-understand language that persons with intellectual disability require for access;

∗ Some disability-specific issues were raised around technology and digital access. These issues often did not have an easy workaround to the alternative to their use: biometric identification; retina scans (e.g. if someone has detached retinas, what alternatives are available); Face identification (e.g. if someone has a detached retina for eye tracking software, what alternatives are available).

Deaf and Hard of Hearing people face digital inclusion barriers around:

∗ Access to reliable and accurate sign language interpreters, and caption options on traditional television, newer forms of media such as Subscription Video on Demand (SVOD), social media as well as in emergency situations. (AHRC, 2021, p. 167; Calgoro et al., 2021, p. 4; Claus, 2021);

∗ Refusal of calls from the National Relay Service (NRS) or National Accreditation Authority for Translators and Interpreters (NAATI)-qualified interpreters by third parties such as government agencies. (ACCAN, 2022, p. 5)

∗ There are resourcing concerns with AUSLAN interpreters. The problem affects accessibility for certain persons with disability when using Zoom and Teams meetings, where automated captioning or other captioning is not sufficient.

∗ Inaccessible or restricted access to public transport due to the lack of; Real-time communication, messaging and live captioning systems; Available hearing loops and amplified audio announcements; visible fixed signage. (Deafness Forum, 2022, pp. 1-4).

Any inclusive digital future needs to have accessible pathways for access, use, and redress from digital businesses.
Dezuanni et al.'s 2023 report advises that:

> Digital service delivery platforms must be accessible for the most digitally excluded people … Governments and service providers must appropriately design digital service delivery platforms for the most digitally excluded people including low-income families, people from culturally and linguistically diverse backgrounds and those living with a disability. (Dezuanni et al., 2023, p. 10)

This is why many disability organizations and advocates push for a diverse, intersectional range of people with disabilities, especially those most excluded, experiencing compounding disadvantage and social marginality to be included in governance, design, and user testing.

In relation to redress it can often be difficult for any consumer to find assistance when trying to rectify a problem. Consider the situation when a food delivery, from a digital platform provider, isn't delivered to the correct address. The customer is still charged, and the onus is on the customer to provide evidence or navigate digital pathways for recompense). This is a wider issue for consumers with the prevalence of digital platforms, social media, and other digital technologies that fall outside existing consumer and small business regulatory frameworks, especially in relation to seeking redress (ACCAN, 2021).

This has led to a proposal by the Australian Competition and Consumer Commission for the establishment of a Digital Platforms Ombudsman (Raiche et al., 2022), something that could be of significant assistance for consumers and small business people with disability.

Many persons with a disability felt that there was a barrier between themselves and these digital businesses that often protected the business and was only made worse by a lack of accessible pathways to make a complaint or seek recourse.

The issue speaks to the wider problem of adequate measures to protect persons with a disability from exploitation and discrimination, an issue highlighted in the findings of the recent Disability Royal Commission. One of the key points made by the Commission was that the *Disability Discrimination Act 1992 (Cth)* did little to incentivise employers, schools, service providers and businesses to take active measures to prevent disability discrimination – hence recommendations for establishment of specific disability legislation in particular areas as well as amendments to the *Disability Discrimination Act (DRC, 2023)*.

A critical, cross-cutting issue in digital inclusion that of access to and accessibility of digital information. Digital access also includes ensuring persons with a disability are able to "consume" information in the digital space. It follows on from an individual being able to connect to the digital world, as simply being connected offers no guarantee the information is presented in an accessible or usable format. Digital information needs to be culturally and demographically appropriate, and easily accessible.

One example mentioned throughout our consultations is the lack of digital information written in plain English that is accessible for persons with a cognitive disability.

A similar example was raised in the Disability Royal Commission, where submitters such as First Nations people (FPDN, 2020) and other groups such as children and young people (CYPDA, 2020), raised concerns with culturally appropriate and targeted information related to the pandemic.

Reflecting further, there are fundamental issues at stake, requiring an approach that goes beyond being a "passive" consumer of information as expressed by a research participant:

> What good is consumer info in plain language on an accessible website if the method of interacting with the entity is

> a real-time, typed English conversation in a chat box that you can't see properly or follow? If one user reads information in English and then sends their inquiry in English but another watches the information in Auslan but then has to send their inquiry in written English, can they be said to be having an equal experience?

In concluding this section, we would note that the issues raised above underscore the importance of thorough understanding and consideration of what equitable access and participation looks like across people's lives– pointing to the need to move beyond digital inclusion towards digital citizenship:

> "It's not just about the layout of the app. What about the consumer protections and information surrounding the relevant industry? What about community forums and information like product reviews and testimonials … We need a much broader consideration of context on issues like these".

Affordability

Affordability refers to whether a person can afford to pay for the infrastructure (i.e. devices and network), data, plan, and services necessary to connect digitally. Affordability was often remarked upon and nominated in our project as a major issue for people with disability. Affordability of communication for people with disability has long been a policy concern (Morsillo, 2011).

The affordability dimensions of digital inclusion loom large because people with disability as a group are markedly disadvantaged when it comes to their share of income, assets, and resources (Tsatsou, 2020). A high proportion of people with disability live in poverty, with far higher rates experienced by various groups who experience multiple disadvantage, exclusion, and discrimination (Schneider et al., 2016), including women with disability, indigenous people with disability (Soldatic, 2018a & b), migrants and refugees with disability, people with disability living in rural and remote communities, among others.

There are the significant extra costs associated with disability (Morris & Zaidi, 2020; Saunders, 2007). A 2020 Australian study found that "with the same level of income, the living standard is lower in households with people with a disability compared to households without members with a disability" (Vu et al., 2020, p. 1). Vu et al. estimate that the average cost of disability in the long-run is "63% of the adult-equivalent disposable income" (Vu et al., 2020, p. 1).

They observe that "current poverty measures do not take into account disability", recommending that "policymakers should seriously consider adopting disability-adjusted poverty and inequality measurements" (Vu et al, 2020, p. 1).

A specific component of these additional costs for people with disability are the extra costs of digital technology, connection, services, and support. There have been longstanding concerns that many people with disability pay an additional impost–often referred to as a "tax"– in order to be able to gain access, accessibility, connectivity, and the same digital bundle of services and usability, on par with their non-disabled counterparts (Olsen et al., 2022).

A group of people who experience homelessness and typically major issues in affordability

of taken-for-granted digital technology often includes a significant number of people with disability (Humphry, 2014, 2022).

Price and affordability of assistive technology has long been a major concern for people with disability (Summers & Verikios, 2018; de Witte et al., 2018). This issue was a drive of the significant reform to assistive technology policy via the design and implementation of the NDIS.

The new approach to assistive technology heralded by the NDIS was aimed to harness, among other things, pooled purchasing power–in order to leverage procurement at scale to secure and pass on cost reductions.

How this has played out in practice has been complex and often unsatisfactory (Steele, 2019), especially in the wider context of debates over cost, accounting, and entitlement to NDIS supports and services––and the tensions among commercial, collaborative, and rights logics and incentives (Foster et al., 2022; Layton et al., 2024; Nikidehaghani & Pupovac (2024).).

There have been significant improvements in affordability to basic services, with falling costs of device, data, and basic connectivity–due to technology convergence (for example, voice and video telephony has become cheaper with Internet based services), maturity of technology, growth of supply, and competition. Accordingly, there is a widespread view of public and private sectors, and members of the public, that the market is working reasonably well for providing essential mobile and Internet availability and access.

The Australian policy framework is largely premised on this assumption–with the definition of standard service and universal service arrangements being articulated and premised on older telecommunications notions.

Conspicuously, affordability has been neglected in policy. This is despite evidence that affordability is a major obstacle for significant numbers of Australian consumers.

A leading example of this is in the lack of recognition of the affordability challenges of broadband. Policymakers are concerned with broadband service availability and access, with the National Broadband Network being the cardinal response to market failure for the past 15 years (Morsillo, 2012).

Contrary to this policy impasse on affordability, what is evident there are many ways in which the benchmark of digital inclusion–in terms of the bundle of things that make up essential digital service for everyone–has become relatively more costly for many (Goggin, 2014; Ogle, G. & Musolino, V. 2016; Powell et al., 2010).

This changing situation caused the ADII to revise its definition of affordability, noting: “A rudimentary connection may be relatively inexpensive but is no longer an adequate basis for digital inclusion” (Thomas et al., 2021, p. 4).

The 2023 ADII report summarized the situation as follows:

> Positive improvements in Affordability reflect reductions in the price of a quality internet bundle. Nevertheless, affordable internet remains a challenge for lower income Australians, including people with disability, public housing residents, those over 75 years old, those who are unem-

ployed, and those living in remote parts of Australia. (Thomas et al., 2023, p. 12)

The 2023 ADII report notes that:

> Some Australians are particularly sensitive to affordability stress, including people with disability (55.1%), living in public housing (64.1%), over 75 years old (65.2%) and currently unemployed (69.4%). (Thomas et al., 2023, p. 20)

These figures mean that 55.1% of people with disability have to "pay more than 5% of their household income to maintain quality, reliable connectivity" (Thomas et al., 2023, p. 20).

To capture this situation, ADII uses the concept of "affordability stress" (often used in relation to rising costs of housing relative to capacity of people to afford to pay; e.g. Aitken et al., 2017), with a score that "describes the percentage of household income required for a family or single-headed household to gain access to a defined internet bundle" (Thomas et al., 2023, p. 19).

For people with disability and these other groups experiencing affordability stress, "digital inequalities relate strongly to socio-economic inequalities" (Thomas et al., 2023, p. 20).

The ADII also looks at whether the cost of Internet use may be a factor for people limiting their Internet use–and finds that this is something disproportionately reported by First Nations people, unemployed respondents, and those in very remote areas (Thomas et al., 2023, p. 20). For people with disability also members of these groups, this may also well be the situation.

Some of the main concerns around affordability that persons with a disability face include:

* ***As raised by participants, many affordability issues stem from the cost of purchasing a new device***.

* ***Affordability issues can be exacerbated by the default position of technology companies, equipment vendors, platform and software providers 'sunsetting' devices (built-in obsolescence), encouraging or requiring upgrades ("upgrade culture") (He et al., 2022; Rottinghaus, 2022). These norms of digital technology systems, business models, as well as government or private provider using the technologies (so requiring upgrades before consumers or citizens can access their platforms) can be particularly frustrating for persons with disability who are used to a certain operating system/device, only to be forced to have to change it;***

* ***The often hidden costs of using digital systems for those that need in-person support. For instance, often, Deafblind people need in-person interpreters to access online meetings and need in-person Communication Guides to help them fill out online forms that are inaccessible. This extra cost is rarely considered by policy makers and more often than not is borne by the consumer.***

* ***Access needs are not a one-size-fits all for people with disability, at any level from the device to the environment to the connectivity needs. So different individuals and groups may require additional expenditure to achieve a parity of connectivity, access, and effective use.***

Data from a dedicated additional study for the 2018 Australian Digital Inclusion Index (ADII) focusing on the Deaf and hard of hearing (DHH) community, revealed major issues–namely that the DHH community spent a high proportion of household income on internet access, and that 4 in 5 survey respondents from the DHH community, spent 43% above the average cost for internet access (Case Study 2, "The deaf and hard of hearing community", Thomas et al., 2018, pp. 21).

It would be interesting to know more about this relatively high expenditure – and whether, for instance, this is related to the increased role of video in DHH community for every day communication with each other, and with Video Remote Interpreter (VRI) services to access the wider community (with implications for data limits and charges on mobile devices too.

It is also important to understand the specific affordability dynamics and issues for a range of other disability communities, at the intersection of their livelihood, income, expenditure, money management, digital technology requirements and consumption patterns––yet there is a dearth of such research available.

Yet with technology now a major area of necessary expenditure, people with disability face additional affordability issues over and above longstanding concerns in other domains of social life, such as housing (Aitken et al., 2019).

For people with disability, financial hardship and other income and affordability related barriers to accessing and using digital technology can mean they are not able to enjoy the benefits – especially for accessibility – of technologies such as smartphones, but also are marginalized or disconnected from crucial information and services.

In addition, low cost alternatives are often not available or useful, due to the nature of the manufacturer's investment or not in accessibility and available features on the device (a major issue in accessibility advances still requiring purchase of expensive smartphones).

This was described by respondents in Nectoux et al.'s 2023 study of people with disability in Western Sydney as a "vicious cycle of obstacles that is difficult to circumvent", with "financial hardship as the largest barrier to digital inclusion, affecting even whether services could be accessed at all" (Nectoux et al., 2023, p. 7).

They pointed out "the causal link connecting financial stress to lack of digital access, and in turn lack of integration into technologically dependent welfare processes" (Nectoux et al., 2023, p. 7).

Ability

We move now to digital ability. Digital ability is the term used by the ADII, and refers to the skills, training, and knowledge required to navigate digital spaces–and how people perceive their competency when navigating digital spaces (Thomas et al., 2021; see also Dezuanni et al., 2018).

Digital ability can be understood in relation to terms such as "digital literacy" (e.g. Conley et al., 2018; Ellis & Kao, 2019; Khanlou et al., 2021; van Kessel et al., 2022) and "digital skills" (Bastien et al., 2020)–both areas where there is a significant literature in relation to

disability, especially during and after the COVID-19 pandemic (Goggin & Ellis, 2022).

Digital ability also relates to a relatively new term that has gained policy purchase–"digital capability". Digital capability has different resonances (Collin et al., 2018), especially via the capabilities perspective of Amartya Sen (Sourbati, 2012). It can also be productively construed for communities and organizations rather than just individuals (McCosker et al., 2022).

Capability underpins key digital policy on skills, training, and ability, notably in the *Australian Digital Capability Framework for Workplace Skills (DEWR, 2023)*–originally an idea suggested and championed by the ADIA (ADIA, 2020, Appendix 2 – Digital Capabilities: International and Domestic Frameworks).

In the 2021 changes to the ADII, Digital Ability was revised drawing on the *Internet Skills Survey*, developed in 2014 and 2019 by a leading group of researchers based in UK and the Netherland (van Deursen, Helsper et al., 2016; van Deursen, van der Zeeuw et al., 2022):

> Measures related to personal attitudes to digital technologies have been removed and indicators of skills are no longer based on the proxy measure of a person undertaking specific online activities in the past 4 weeks, but their perception of their competency in completing selected digital tasks in six realms (Operational: Basic, Operational: Advanced, Social, Creative, Information Navigation, and Smart Devices). (Thomas et al., 2021, p. 11)

As noted in the 2021 ADII, digital ability has a close association with age: young adults under 34 years scoring higher than the national average, and a "significant drop in digital ability after the age of 55" (Thomas et al., 2021, p. 14). Like other areas of digital inclusion measured by the ADII, "Digital Ability scores improve as education and income levels rise" (Thomas et al., 2021, p. 14).

Gender has a "minimal impact on Digital Ability at the national level", though women in regional level "score much higher than their male counterparts" (though still lower than the national and metropolitan averages) (Thomas et al., 2021, p. 14).

The 2023 ADII report makes a number of telling points about the significance of digital ability in shaping and perpetuating digital exclusion:

* ***the "gap between digitally included and digitally excluded Australians is clearly seen when looking at longer-term trends in Digital Ability scores" (Thomas et al., 2023, p. 11);***

* ***the "gap in Digital Ability is also illustrated by differences in how different social groups use the internet, with a greater range of economic, administrative, social, and cultural activities undertaken by younger people and those with higher levels of income and educational attainment" (Thomas et al., 2023, p. 11);***
* ***"limited skills and literacies may compound inequalities for groups already experiencing disadvantage over the long-term"–"Digital Ability is a moving target and skills must keep pace with rapidly evolving technologies and their applications, meaning gains in previous years cannot be taken for granted" (Thomas et al., 2023, p. 11).***

The 2023 ADII report shows that there is a

substantial gap in Digital Ability between persons living with and without disability. There is an approximate 20% gap between these two groups all measured domains including the ability to socialise, create and navigate information digitally. It is not clear what the dimensions, dynamics, and experiences of this gap are for people with disability, as a group, or for particular cohorts.

Digital ability issues can be a major barrier for people with disability, especially given the growing complexity of digital technology ecosystems, and information. For instance, existing work highlights that people with intellectual disability experience digital exclusion due to:

∗ A lack of support, knowledge or understanding of how to navigate and use digital technologies and services, including online government services;

∗ Increased risk of harm, fraud, online scams and cyberbullying;

∗ Difficulties affording data plans (Good Things, 2022);

∗ A lack of involvement in the design and development mobile technology and applications;
∗ A lack of education about the design and features of digital devices;

∗ A lack of awareness about the safety features of mobile applications and devices (Danker et al., 2023, p. 135).

In our project what emerged was an ambivalence among some towards ability and skills While some people with disability lack digital skills, some are just not interested in upskilling their digital skills. Some do not see digital ability as a priority and likely do not see the value in using digital supports and mediums (Figueiredo et al., 2022).

This stems from concern and resistance perceived compulsory enlistment in doing things digitally (Bonini & Treré, 2024; Seale, 2019), rather than in other modes – something that is society wide phenomenon, as people realize and question the "costs of connection" (Couldry & Meijas, 2019).

As both private and public services become increasingly digital, to take the most obvious instance, some people with a disability feel that they don't have a choice in the matter: "I hate being forced to do this, and it's not my choice, and I don't want to. And being forced into the space of having to do everything digitally."

These attitudes and feelings have been expressed in a range of different settings, including in the aftermath of the "Robodebt" debacle and in the Royal Commission devoted to it.

The lack of independence brought on by inaccessible digital spaces and products also has implications for privacy, safety and prevention of abuse and exploitation.
In relation to older people, there are a complex set of issues around lack of inclusive design, information, and literacy. For instance, as documented in research, older people with impairment can face a range of barriers to digital inclusion including:

∗ Lack of involvement and co-design in digital technologies and services for healthcare and social needs, due to ageist attitudes and assumptions. (Mannheim et al., 2019, p. 4)

* ***Reluctance to use digital technologies due to: Psychological risk-fear of making the wrong choice; Financial risk - wasting money on digital technologies or services;***

* ***Social risk- fear of negative opinions from others about the products or services used. (Figueiredo et al., 2021, p. 19)***

* ***Low confidence in using technologies due to poor digital literacy. (Figueiredo et al., 2021, p. 41)***

As society becomes increasingly digital, there is uncertainty amongst many in disability communities around the non-digital alternatives to participating in society. As key services like Centrelink and banking shift from brick-and-mortar service provision to digital offerings, many people are feeling like they are being left behind.

A concern in this context is the perception that government and private enterprises have limited interest in training and educating persons with disability, even in new initiatives such as the Digital Capabilities Framework that seek to develop digital skills. There is the perception that these entities are not committed to improving the digital skills of persons with a disability, instead believing that the individual can rely on support workers or carers to access digital society on their behalf.

Not only does this raise concerns around autonomy and personhood. It also raises practical issues related to the skills and education of care workers themselves to navigate digital space.

For example it may be a goal for a person with a disability to connect over the popular social platform Discord, used by gamers in particular (Riley, 2024); yet the carer may never have used it or needs to educate and play around with the software first in their own time.

In this gap, some not-for-profit organisations have developed programs and resources to address the lack of digital ability amongst the disability community. These are important efforts that occur in a context of variegated and stratified nature of support seen elsewhere (Helsper & van Deursen, 2017).

Other organisations report gender as a key influencing factor for these programs which affected how people wanted access technology and be supported – in terms of preferences for access for health services and digital health, for instance, via websites versus face-to-face connection or use of telehealth.

In terms of knowledge, the broader domain of digital ability also includes knowledge about specific technologies. There are now many different “smart home” technologies that are well-established in mainstream consumer markets. Some of the barriers to being able to use/implement these is a lack of knowledge about what technologies are available, how these could be installed and how they would benefit a person with a disability (Jamwal et al., 2022; van Heek et al., 2017).

The issue is also not contained to the person with disability themselves but also appears to include support workers, guardians and family, NDIS administrative staff, and policy-makers. In some circumstances, occupational therapists (who recommend supports and therapies to be funded by the NDIS) are unaware of the technologies available, nor are they across how these technologies allow persons with disability to reach their partici-

pation goals (e.g. through NDIS funding).

Yet people with disability frequently find digital workarounds for the many barriers they encounter that make use of mainstream devices alone or in combination.

For example, a respondent gave the example of a fully Deafblind person who uses Auslan might use a smartphone with a Braille display in order to communicate in-person with people around them that do not sign:

> In this instance, only the Braille display would be considered an NDIS funded support but not the phone despite both devices having specific roles related to the disability being experienced . It's vital that there is clear understanding from government that support needs arise in the presence of a disability (interactively generated and relating to the individual and their environment) and not in the presence of an impairment (individual characteristic related to functioning).

Conclusion: Unfinished Business, Unrealized Potential

In this chapter, we have explored some key aspects of digital inclusion for people with disability, as it has been recognized and, to some extent, conceptualized, measured, and tracked by researchers, providers, and policy makers.

What emerges is that there is unfinished business. Added to years of mounting evidence of persistent digital exclusion of Australians with disability, there are new concerns associated with emerging technology. Notwithstanding this, there is a body of policy concepts, approaches, and options as well as best practice in design, provision, and innovation.

There are recent highwater marks such as *ACCAN Ideal Accessible Communications Roadmap (ACCAN, 2020)*, which have not been well heeded; nor have the visionary recommendations of the *Australian Human Rights Commission report (2022)* been implemented.

Compared to Australia's lack of legislative movement on digital accessibility, elsewhere there have been significant advances. For example: the U.S. has long had the Section 508 of the *Rehabilitation Act* which has driven much accessible digital product creation. In 2010 it enacted the 21st century *Communications & Video Accessibility Act*, followed up by recent 2024 ADA reforms via Title II & III rule making. Canada has moved forward with its *Accessible Canada Act*.

The EU has implemented its comprehensive *Accessibility Act*, and the *2024 Europe AI Act* prohibits use of an AI system that "exploits … vulnerabilities" due to disability (Article 5) and mandatory accessibility for AI that is high-risk (Article 16) (EDF, 2024; EU, 2024). Fair to say that Australia has nothing of this necessary scope and scale to report at this stage.

Given the capabilities, participation, and quality of life that digital technologies and digital inclusion can support and strengthen, continuing failure to act is highly likely to entail significant economic and social costs.

This was summed up almost a decade ago in the title of major survey of disability and the digital divide as "unrealized potential" – something that still rings true (Dobransky & Hargittai, 2016).

As a way to advance digital inclusion for people with disability, there is an obvious example to be considered– the initiative taken by Australian policymakers and researchers to tackle First Nations' digital exclusion.

To briefly summarize, this entails:

∗ the adoption of an outcome (Outcome 17) and clear target (Target 17) under the 2020 Closing the Gap agreement, with detailed, robust, and disaggregated indicators, underpinned by development of data (Joint Council, 2020; see Appendix 2)

The target stipulates that "by 2026, Aboriginal and Torres Strait Islander people have equal levels of digital inclusion" (Table B: Outcome 17, Joint Council, 2020). The indicators, under "drivers", include detailed Internet measures:

∗ Levels of digital inclusion among Aboriginal and Torres Strait Islander people as compared with other Australians (disaggregated by access, affordability and digital ability)

∗ Proportion of Aboriginal and Torres Strait Islander households accessing the internet

∗ Proportion of Aboriginal and Torres Strait Islander people accessing the internet (disaggregated by point of access: home, work, school, public access, government shopfront)

∗ Frequency of internet access at home in last 12 months (daily, weekly, monthly, yearly)
∗ Proportion of Aboriginal and Torres Strait Islander people using internet to access government services for private purposes (e.g. health services, taxation, bill payments, social security payments) (Table B: Outcome 17, Joint Council, 2020)

Very interestingly, the final indicator goes squarely to indigenous people shaping a sector pivotal to digital inclusion, and its cultural, social, economic, and political dimensions:

∗ Number of Aboriginal and Torres Strait Islander people employed in media (disaggregated by income levels) (Table B: Outcome 17, Joint Council, 2020)

It is encouraging to see this landmark action on digital inclusion for First Nations peoples. First Nations communities include a significant number of people with disability, with their distinctive cultural and language requirements (Avery, 2018; Carew et al., 2015), longstanding patterns of use and innovation (Carlson & Frazer, 2021; Gilroy et al., 2020; Henson et al., 2023; Rennie et al., 2013), and unmet needs, in regard to digital technology (Marshall et al., 2023; Rennie et al., 2019) – so it will be very interesting to see how this figures in the initiative.

While important to consider this initiative in its own right, it offers some useful insights for considering the way forward on digital inclusion for people with disability.

Firstly, that instead of one single indicator for digital inclusion––as in Australia's Disability Strategy, as discussed above; Target 7 of Closing the Gap, contains, appropriately, a range of indicators.

Secondly, that one of the indicators is about the employment of indigenous people in media, a key area of digital inclusion. Thirdly, that there is a detailed set of things laid out for ensuring there is adequate data to track and evaluate progress.

In addition to the target, there is a strategic framework and suite of actions (existing and proposed) to build on Target 17, aiming to improve First Nations digital inclusion in the three areas of: Access; Affordability; and Digital Ability.

This is formulated as the *First Nations Digital Inclusion Plan (FNDIP) (NIAA, 2023)*. Key to guiding the process is the First Nations Digital Inclusion Advisory Group and its Expert Panel (https://www.digitalinclusion.gov.au/).

To assist with the evidence base, especially when it comes to remote indigenous communities, a four-year Mapping the Digital Gap project has been established by the ARC Centre of Excellence for Automated Decision-Making and Society in partnership with Telstra, working with 10-12 communities.

This project has published a number of reports on particular communities, as well as its first outcomes report (Featherstone et al., 2023).

The significant policy and research effort on First Nations digital exclusion is most welcome, especially as it is long overdue. It also provides an important example of how digital inclusion can be tackled in a way is co-led by community, acknowledges and seeks to understand and address the intersecting challenges, is underpinned by good research and data, is embedded in robust, whole-of-government frameworks and actions.

Various attempts have been made over many years by consumer and disability advocates to underscore the importance of such an integrated, major response in relation to disability and digital exclusion and inequalities. It is now more urgently needed than ever.

Digital Citizenship for People with Disability:

What Is It and Why It Matters

A citizenship that acknowledges people with disability is fundamental to a re-imagining of local, national and international collectivities. — Helen Meekosha and Leanne Dowse (1997, p. 67)

If I need it to participate in society, then it needs to be accessible from day one. — Research participant

In chapter 2, we discussed the state of play of digital inclusion when it comes to people with disability. We looked how it been discussed, conceptualized, measured, and tracked – especially in the Australian context.

While digital inclusion has continuing relevance and wide recognition, it has real limits. In particular, there are many ways, which we have detailed, in which digital inclusion is not fit-for-purpose for the nature of digital technology in contemporary societies such as Australia, seeking to ensure people have sufficient access to, use, and capability to participate on a full and equal basis with others.

Digital technology is so widely used across social life in Australia and especially in the relationships across Australia and its international communities, that it is important to find an approach that better captures its social embedness – and what it means for individuals and communities who are not able to fully, effectively, and equally participate, such as many people with disability.

These social realities and horizons of digitally reliant societies are also not being captured or addressed in policy. As we have laid out, Australia's approaches to ensuring everyone can participate via digital technology are fragmented and outdated. Landmark efforts to provide comprehensive approaches that could tackle emergent challenges of AI – such as the *2022 Human Rights Commission report*, which had disability digital accessibility and inclusion as a centrepiece – have not been acted on. So, in this chapter we explore digital citizenship, and how it could serve as a linchpin for a potentially transformative new framework for strengthening and optimising policy in disability and digital technology.

Disability and Citizenship

To start with, there are well-established problems with disability and citizenship, how it is imagined, and what its realities are. Indeed accounts and formal arrangements of citizenship have overlooked and left out many people and communities, such as indigenous people, refugees and asylum seekers, prisoners and incarcerated, homeless people (Humphry, 2022; Schindeler, 2010), but also people with disability (Mann, 2019; van Toorn & Cox, 2024, p. 1255), not to mention the exclusion from full citizenship of women and people of diverse genders and sexualities.

Thorny issues regarding citizenship play out at the edges and intersections of different categories and groups, as well as different social and political and economic systems, such as the contemporary welfare (or post-welfare) state (Soldatic & St Guillaume, 2022; Takle et

al., 2023).

There is a growing and rich body of research on the absence of people with disability, in all their diversities and intersectionalities from citizenship (Altermark, 2018; Bahner, 2019; Darcy & Taylor, 2009; Halvorsen, Hvinden, Beadle Brown, et al., 2018; Halvorsen, Hvinden, Bickenbach, et al., 2017; Hirschmann & Linker, 2015; Minch, 2013; Power, Lord, & DeFranco, 2017; Sépulchre, 2017).

Here work on disability has keyed into successive waves of rethinking and debate regarding citizenship (Kymlicka & Norman, 1994). Fundamental issues in how exclusions play a constitutive role were pointed out by Meekosha and Dowse in their germinal paper on disability, gender, and citizenship in Australia:

> Race, ethnicity, class or gender identity influence some of the major citizenship debates in Australia, such as the proposed rewriting of the Constitution, the formulation of a republic and the unequal representation of women in Parliament. These debates neglect disability and people with disability, yet hegemonic normalcy invests the very language and imagery of citizenship. (Meekosha & Dowse, 1997, p. 51)

They elaborate:

> We speak of upright and upstanding citizens, we stand to attention to the playing of the national anthem. The good citizen is embodied as male, white, active, fit and able, in complete contrast to the unvalued "inactive" disabled Other. (Meekosha & Dowse, 1997, p. 51)

At the heart of the problem with how citizenship is understood is the deep-rooted issue of normalcy: "Disability challenges fundamental notions of normalcy and, thus, ironically may have great potency for widening citizenship debates" (Meekosha & Dowse, 1997, p. 52).

Meekosha & Dowse starkly mark out the stakes, and the key tenets and elements to be rethought:

> What price might have to be paid by people with disability if they engage with the increasing demands by marginalized groups to be included in what may effectively constitute token negotiations around citizenship? How do we begin to rewrite the story of what it might mean to be a disabled citizen, where the language of activity, productivity and capacity become transformed? (Meekosha & Dowse, 1997, p. 67)

In fact, exclusion is an abiding, persistent, if not defining feature of citizenship: the shifting line between who is included, fully or in degrees, or in liminal (on the threshold ways) as a citizen (Torres & Wicks-Asbun, 2014); and who is excluded.

The profound and continuing exclusions and inequalities of citizenship for people with disability can be seen across a range of ways that citizenship is considered and experience.

This is most obviously the case in terms of citizenship as in terms of people's relationships to the state, and how the nature, rights, and responsibilities of citizenship are captured in legal frameworks. Here there was a major advance with the *UN Convention of the Rights of Persons with Disabilities (CRDP)*, which in offering a comprehensive framework for defining and enabling disability human

rights also put a model of full citizenship on the global agenda.

Subsequently, there have been various efforts to use the CRPD provisions as the benchmark for assessing citizenship for people with disability (for example: Halvorsen, Hvinden, Bickenbach, et. al, 2017; Halvorsen, Hvinden, Beadle Brown, et al., 2018; McCausland et al., 2018; Lid, Steinfeld, & Rembis, 2023; Verdugo, 2023).

This effort is in dialogue and interplay with the other major tradition of thinking about citizenship – that is, as a "normative concept", beyond legal notions (Walzer, 1989). As Kim Rubenstein puts it:

> In the non-legal, normative frameworks citizenship is discussed in a variety of ways; primarily in terms that look to the material circumstances of life within the polity, notably concerning questions of social membership and substantive equality … It goes beyond legal citizenship to deal with the panoply of relations described by a body politic within it and the way people should act and be treated as members of a community. (Rubenstein, 2007, p. 512)

In this area, we can see a diverse and vibrant body of effort at all levels and across domains, especially everyday life, in seeking to creatively imagine and enact disability citizenship and practices. One important area of this is digital technology, cultures, and spaces.

Disability Digital Citizenship

Digital citizenship has emerged in recent years as an acknowledgement that citizenship and wider aspects of how people belong to, participate in, and are full members of a society increasingly hinge on digital technologies–which have become essential (Baumgartner et al., 2023). Digital citizenship was summed up in its first systematic account as the "ability to participate in society online" (Mossberger et al., 2007, p. 2). Mossberger et al. presciently asked: "What, however, does it mean to invoke the notion of citizenship in relation to the use of a technology?" (Mossberger et al., 2007, p. 2).

Central to their answer was the contention that "digital citizenship encourages … social inclusion" (Mossberger et al., 2007, p. 2). Digital citizenship became widely known and operationalized in schools' education, revolving around responsible and safe use of digital technology for children and young people, closely allied to the emerging concepts of digital health and digital wellbeing (Ribble, 2015; Rogers-Whitehead, 2019).

There are good reasons to be sceptical about digital citizenship, especially as it has emerged in these dominant versions that are often implicated in wider social exclusion and inequality, as we discuss below. However, there has also been growing recognition in recent years of the ways in which digital citizenship should be broadened beyond its current relatively narrow and often disabling parameters.

This is especially because it provides an important conceptualization of and entry point into a much larger topic with major implications for people's lives.

Consider, for instance, that digital technologies have and can open up new spaces and possibilities for joining with organization, participation, engagement, social and political action (Isin & Ruppert, 2020; Pangrazio & Sefton-Green, 2021, pp. 18-19).

Participation, in particular, is a crucial part of social life that citizenship seeks to capture.

What participation means in highly mediated, digital societies has the subject of considerable discussion and research. This is especially the case in seeking to understand and pin down qualities and requirements for the highly differential, often unequal participation in digital societies (Reneland-Forsman, 2018).

Consider that the rise of the Internet, mobile phones, social media, AI, and other technologies has had important implications for citizenship. These are technologies that work across geographies and boundaries of nation-stages, often now provided by transnational corporations—especially when it comes to digital platforms.

In the 1990s onwards, the Internet provided support for language and cultural communities, and their diasporas, to produce information and media, to communicate across locations, and to be connected in ways that were not previously possible (Danet & Herring, 2007; Goggin & McLelland, 2009).

There is a rich body of research on this topic, including in the new area of digital migrant studies (Leurs & Ponzanesi, 2024). Generative AI is now being widely used across translation, language use and support, in social and cultural activities by multicultural communities in innovative ways that have implications for digital citizenship that have not been widely discussed. There has been ongoing discussion of the implications of emerging technologies for multicultural communities, diversity, and intersection (Nectoux et al., 2023; Goggin & Soldatic, 2022)—including a September 2024 Symposium on Multicultural Algorithms in Australia at the University of Sydney.

There is important work from researchers and advocates drawing attention to the implications of the pervasiveness of digital technologies for people with disabilities in culturally and linguistically diverse communities (Ajodhia-Andrew, 2015; Bastien et al., 2020; Gorksi & Clark, 2002; Petersen et al., 2019).

This topic deserves a central place in its own right, but it also will provide important insights for wider discussions of the realities, visions, and horizons of citizens in digital societies (Stewart & Spurgeon, 2020; van Toorn & Soldatic, 2024).

For some time, digital engagement could still be a matter of personal choice. This has been seen as a matter of progress, where individuals could decide whether to pay their bills, socialise, or consume information physically or digitally.

However, the COVID-19 pandemic saw a sudden, unforeseen shift towards a digitalization of the mainstream. This deepened the existing problems with digital transformation strategies, with essential services closing – such as bank branches – leaving some people and communities with diminished options, that digital by default services can not address.

While such things had been envisaged in visions of digitalization over many years, during the the pandemic whole sections of society were mostly only accessible digitally, including core public and private services.

Even movement around public spaces were regulated through the use of digital data records (i.e. wide spread contact tracing and

check-in apps, such as government "vaccination passes").

The trend has continued with many mainstream services, including banking, voting, and participation in policy development, moving online as a default. While face-to-face modes have returned in a range of areas, the digitalization of everyday life has greatly expanded–and the modalities, qualities, and social relations of the digital–what we might call post-pandemic "digitalities" has changed (Kuntsman, Martin & Miyake, 2023).

Participation in digital society extends beyond the political or service domains. It also encompasses engaging with family and friends (Caton et al., 2023), digital commerce and interacting with broader society through online groups (Glumbić et al., 2022).

There is also the element of consuming digital culture and the social aspects involved in being part of a "viral" digital trend. Overall, the entrenchment of digitalization raises questions about what is being done and what is still to be done to ensure persons with a disability can actively participate in an increasingly digital mainstream society.

For persons with a disability, the term digital citizenship conveys the notion that the government have a non-delegable duty to all citizens in digital societies (Chadwick et al., 2022).

A part of this duty involves upholding the rights of persons with disability to participate in a digital society, just as it is the government's duty to uphold those same rights to all citizens in non-digital contexts.

As a participant in our project phrased it: "If I need it to participate in society, then it needs to be accessible from day one." As the way we interact with public and private services is becoming increasingly digital, the right to access digital spaces should be prioritised by all levels of government.

An example that was brought up repeatedly throughout this project was the public health measures employed throughout the COVID-19 pandemic. These measures were employed to control the movement and participation of all citizens in society. However, measures like contact tracing, check-in apps and vaccination passports were often released without accessibility features included or considered.

This had the unintended impact of restricting individuals with accessibility requirements or impediments to participating digitally, regardless of vaccination status. (Centre of Research Excellence in Disability and Health, 2020; Spivakosky & Steele, 2020)– and raises wider issues of health and digital justice (Davis et al., 2022).

Another important example of digital participation as a non-delegable right stem from welfare and disaster area support. As the number of brick-and-mortar Centrelink offices reduces and phone-call wait times increase, access to welfare and disaster support is being redirected towards digital access. There are often complicated processes for applying and reporting requirements associated with these services.

If persons with a disability are only able to access key government services and support digitally, then there needs to be guaranteed access to these digital services.

Just as it is the government's responsibility to educate and train its citizens to navigate so-

cietal shifts in employment, there is an equal onus on the government to ensure its citizens have the ability and skills to navigate digital society. These societal shifts and the speed at which they occur can often be impacted by government policy or positioning.

One such example of this already happening is through climate change initiatives. The risk of climate change has forced governments around the world to de-carbonise and transition from fossil fuels towards more sustainable and renewable options.

Part of this transition involves the re-training and upskilling of citizens employed in these sectors, equipping them with the skills to navigate these emerging industries. These initiatives stem from an unwritten social contract between the government and its citizens and are designed to help citizens navigate a substantial societal shift they have little control over.

As well as these potential rights of disability digital citizenship, we need to consider the countervailing responsibilities or duties also–a subject that has rarely been included in discussion in relation to people with disability.

Problems with Disability Digital Citizenship

Key to digital citizenship and the ways in which it has been imagined is its fit with dominant and ableist ideas of society and economy globally–competition, markets, efficiency and cost-cutting, entrepreneurship and innovation, and the ability of citizens to respond to their circumstances, constraints, and precarity with agile, flexible leveraging of digital technology.

As van Toorn and Cox suggest that it is "[t]his normative, neoliberal figure of good citizenship that has become increasingly intertwined with digitalization and the dominant conception of the digital citizen" (2024, p. 1253). They point out there are powerful, specific ways in which dominant notions of digital citizenship shape disability.

This market-based, entrepreneurial norm of digital citizenship poses problems for people with disability.

Firstly, technology is prominent in contemporary neoliberal ideas of disability (Soldatic, 2019)–especially the reflex ways in which people are encouraged to self-manage, work, and communicate via digital platforms–among which, the most celebrated practice is digital entrepreneurship (van Toorn & Cox, 2024, p. 1254).

Secondly, the "disabled digital citizen" faces major hurdles overcoming significant digital exclusion and inequality. Van Toorn and Cox note that such digital inequalities and exclusions affect people quite differently–and that "digital inclusion/exclusion is better thought about as an ongoing, fragile process occurring over time, where inclusion/exclusion is unevenly experienced" (2024, p. 1255).

Crucially, the experiences of disabled digital citizens play out and depend upon how they are placed in relation to a complex ecology and combination of different technology, social, and other systems:

> Where one does not have access to digital technologies or is unable to effectively negotiate their complexities or–owing to the compounding effects of other forms of social disadvantage–is unable to fulfil the normative ideal of the digital citizen

> or is subject to intensified surveillance and control when they do use them, then one's citizenship is diminished (even if not formally extinguished). (van Toorn & Cox, 2024, p. 2024)

Here such research matches and validates a key insight from the work of consumer, disability, rights, and other NGO organizations, underscored by the experiences and accounts of consumers and citizens themselves. Such accounts of consumers, citizens, and other chime in with a larger sense of powerless, poor outcomes, and loss of freedom articulated widely, in efforts to regulate, reform, and reinvent digital technologies.

These are concerns that have been widely raised in relation to recent developments associated with smartphones and apps, social media, digital platforms, and AI. A manifestation of this is registered in the so-called "Techlash", or popular backlash against the concentrated, pervasive power of digital technology and platforms in everyday life.

This has heightened calls for better governance and regulation, as well as reimagining at a fundamental level of digital technology, systems, and business models (Flew, Martin & Suzor, 2019; Hill & Shtern, 2024).

Digital citizenship also raises new kinds of issues, evident in controversies over privacy, data surveillance, and digital justice (Hintz et al., 2019). Thus digital citizenship offers a perspective on how digital technology is shaped and deployed in a society – and deserves to be a central area of analysis, discussion, and policy attention (McCosker et al., 2016).

What has been confirmed in this project is that digital citizenship provides an extremely important, rich, and revealing way to consider disability and digital technology. Because of the specific relationships of people with disability with digital technologies–evident in their everyday uses and innovations of technologies and their affordances–disability has a significant amount to teach us about digital citizenship in general (Goggin, 2016).

Indeed it can flesh out the suggestion of Couldry et al. what such acts associated with digital technologies may involve in the creation of a "civic culture: that is, the cultural preconditions for practices of citizenship" (Couldry et al., 2013, pp. 627-628).

For people living with a disability, digital citizenship represents an evolution of seeing oneself as a passive recipient of digital goods, services, and information.

Instead, the individual is positioned as an active participant in a digital society, with the right to access and in turn, contribute. As Darcy et al. underscore in a pioneering study, digital technologies can support the "development of disability citizenship and active citizenship" (Darcy et al., 2019, p. 538).

This crucial point was captured by one of our workshop participants who said: "Often the person is wanting access to something so that they can contribute to it."

An important area to consider is that the shaping of social inclusion for all is increasingly bound up with digital technology. So, it is crucial to pay attention to how digital inclusion–especially for people with disability–is being imagined and constructed as part of wider social inclusion. It may be that forms of digital inclusion are in tension with citizenship, including digital citizenship. This is an issue raised by van Toorn and Cox, when they contend that:

> the binary logic of either inclusion or exclusion does not do justice to the ambivalent effects that digitalization has for the citizenship of 'disabled Australians' a category which is itself internally differentiated. (van Toorn & Cox, 2024, p. 1251)

As van Toorn & Cox explain:

> ... digital technologies have played an ambivalent role, at times assisting the inclusion of minoritized groups in the exercise of citizenship rights and prerogatives while simultaneously enabling more pervasive forms of social control, surveillance and social exclusion. (van Toorn & Cox, 2024, p. 1250)

So, we see, for example, the problems with forced or compulsory digital inclusion in "digital by default" policies for government, service provision, and care arrangements and settings have been pointed out internationally (Berg et al., 2024; Pethig et al., 2021; van Holstein et al., 2021), as well as having been raised over many years by disability, consumer, and other NGOs in the Australian context.

What has been clear for some time is digital inclusion and digital services policies can involve new kinds of exclusionary mechanisms as well as exacerbating existing inequalities (Schou & Svejgaard Pors, 2019).

Automation, especially in relation to decision-making, has notable issues when it comes to disability. The automation of government services, especially in relation to welfare, support, and disability services, raises one set of far-reaching concerns, that have yet to be properly addressed (van Toorn, 2024a), even in initiatives specifically aimed to shape and leverage inclusive AI, data, and automated technology such as NDIS's much vaunted "Nadia" voice assistant avatar (Park & Humphry, 2019; van Toorn, 2024b).

Indeed Australia has witnessed a number of troubling cases, the most widely publicized being the Australian "Robodebt" welfare services controversy (Goggin & Soldatić, 2022).

The resulting Royal Commission investigating "Robodebt" provided abundant evidence of the dark side of digital technology, especially for the many people with disability who were affected.

With such challenges and caveats in mind, in the remainder of the chapter we seek to outline what a new kind of digital citizenship for people with disability might look like, and how it could provide a generative framework for the paradigm shift in thinking and policy required for inclusive digital and social futures for people with disability.

Reimagining Disability Digital Citizenship

Following the lead of Rubenstein & Lenagh-Maguire, we think it is important to do justice to the "whole story of a person's experience as a citizen": in this case, the whole story of people with disability' experiences as digital citizens. They explain this as a "thick" account of what (digital) "citizenship means as a social phenomenon, a political dynamic and, importantly, as a personal experience" (Rubenstein & Lenagh-Maguire, 2014, p. 30).

We think this kind of "thick" account would be a very helpful way to understand the deep, complex, intersectional, and vitally important aspects of digital citizenship as it increas-

ingly has come to underpin and embed (or dis-embed) people into "membership and participation in a community" (Rubenstein & Lenagh-Maguire, p. 29; cf. Walzer, 1989). This kind of mapping of the landscapes of disability digital citizenship is urgently needed, especially given inequality and exclusion, and their inverse, are produced by disparities in "basic necessities" (Rahman, 2018) of which digital technologies are a key pillar.

Building on such a comprehensive, rich inventory and mapping of experiences and stories of disability digital citizenship, we would be positioned to properly consider its implications for policy. In particular, whether and how a policy focus on citizenship could lead to a paradigm shift or transformation in people with disability' capacities to effectively, safely, pleasurably, and otherwise use and leverage digital technology and gain enhanced digital and social participation.

A "citizenship turn" in disability and digital technology can be placed alongside other examples of a citizen-based approach to address longstanding issues in addressing exclusion, inequality, and obstacles to social participation (such as Hickey, 2010).

While this project is beyond the bounds of what's possible in this report, it is worth having a brief look at what the main parts of digital citizenship for people with disability might be, especially in order to capture the full dimensions of belonging, membership, and inclusion in social life in contemporary society.

In relation to disability digital citizenship, one starting point readily at hand (because it is such a salient theme in disability rights and culture) is the range of areas of where digital technologies in their appropriation, take up and use in ordinary ways, in providing inclusion, assistive technology, and affordances, as well as in "hacking" , reworking, do-it-yourself use, and experimental underpin the exercise of expansive, active, and generative citizenship.

Another starting point is the way that digital technologies have been leveraged by people with disabilities for actions, interventions, and practices of agency, expression, voice, and listening.

Overall, such practices and cultures (especially digital cultures of people with disabilities) might be seen part of the highly active yet largely invisible terrain of disability digital citizenship–the "tactics" and "strategies"–of everyday life associated with other marginalized and excluded groups (Smit et al., 2024).

Such practices can also help us rethink what citizenship, its imaginaries, and practices might be – for people with disability, but also for other groups.

Consider, for instance, use of digital technologies for participation in:

* ***everyday life;***
* ***family, friendships, and community life;***
* ***Intimate and sexual citizenship;***
* ***arts, culture, and media;***
* ***leisure, games and play;***
* ***health and well-being;***
* ***faith communities and religious life;***

work;

* ***education;***

* ***politics, activism, and social movements;***

* ***civil society;***

* ***travel, transport, and mobilities.***

There is a body of research that touches on digital citizenship in some of these areas. Broadly, however, we can draw on contemporary notions of disability, and the voices and experiences of people with disability, in society, disability arts, culture, and media, and other areas to flesh out what digital technologies are enabling, and disabling, in Australian society.

This is work that lies ahead. In the meantime, we would draw attention to other obvious starting points for thinking about disability digital citizenship.

Firstly, there is the CRDP and the suite of provisions it contains for understanding key domains of citizenship–as well as the crucial, constitutive role that digital technology plays in these.

Secondly, existing models for thinking about how to conceive and capture, as well as evaluate and benchmark disability citizenship–that might be combined with a comprehensive account of disability and digital participation, to lay out a model of disability digital citizenship. One such ambitious model is the landmark project of a team of researchers to understand the "changing disability policy system" and lived experiences of "active" citizenship and disability (Crick, 2022; Smith, 2013) in Europe (Halvorsen, Hvinden, Beadle Brown, et al., 2018; Halvorsen, Hvinden, Bickenbach, et al., 2017).

Thirdly, new elements of citizenship directly related to and generated by new aspects of digital technology, such as:

* ***digital rights;***

* ***cybersecurity and safety;***

* ***privacy and data protection and rights;***

* ***digital surveillance and its differential impacts;***

* ***data justice.***

Many of these aspects of digital citizenship have not received much attention or consideration in relation to disability.

Consider, for instance, that there is substantial concern that many persons with a disability have regarding privacy and security in digital spaces. Society often considers health-related data as highly sensitive data.

However, it sometimes feels like disability status and information pertaining to disability is not held with the same regard or care as that of other groups or the general population.

Data regarding disability can be permanent, much like health data, and have the potential to affect insurance, employment, and other interactions across society. Thus privacy concerns/data breaches are likely to impact persons with a disability in particular ways and to a greater extent.

This information is not only permanent, it can often be difficult for persons with disability to change or renew their documents. Similarly, security issues like more complicated

passwords and setting up two-factor authentication (2FA) may exclude persons with intellectual disability.

Fourthly, there is the need to consider how disability digital citizenship is being imagined and embedded into societal ways of understanding, as well as technology design, markets, and policy. As the work of van Toorn & Cox, and others, clearly shows there are major problems with how digital citizenship is being shaped generally–especially in relation to people with disability.

This overdue consideration of disability and digital citizenship is all the more pressing, given the ways that emerging digital technologies are putting into question the "black box" of societal and cultural expectations about people's lives and their relationships with other species ("more-than-human") and environments.

We can see such discussions and realignments happening in areas such as: Virtual Reality (VR), Augmented Realities (AR), and Mixed Realities (Carter et al., 2024)); robotics; AI and automation; haptic and sensory technologies.

The difficulty here is that work is often framed by outdated notions of disability, without sufficient direction and engagement with disability communities, and without an understanding of disability worlds and citizenship.

Finally, it is important to acknowledge and consider the limits and fundamental problems with citizenship. We suggest that thinking about disability and digital society can productively engage with citizenship. However, citizenship is only part of the story, and it typically operates with exclusions (Román, 2010). Like the term "consumer", citizen does not capture all the important dimensions of identity that are involved in social life (Mellick Lopes & Gill, p. 186)–especially in relation to digital society.

Many contest particular kinds of citizenship, or the appropriateness or use of the concept-critiques articulated by a wide range of First Nations scholars and advocates, pointing to the imposition of oppressive kinds of citizenship (e.g. citizenship of a colonizing nation, rather than a previously established indigenous polity) and the links and tensions with other key terms such as sovereignty (Ardill, 2013).

Inclusive Digital Futures for People with Disability

Overview

Australia has a long history of developments and discussions concerning disability and technology. Yet without the requisite policy frameworks and associated compliance and enforcement mechanisms, tangible progress has remained limited. In response, this project has sought not just to provide a progress update on disability inclusion and accessibility; and the importance of things long argued for–such as comprehensive, overarching laws and frameworks, disability leadership and co-design, critical capabilities and resourcing for research, advocacy, and innovation.

We believe it is important to rethink the conceptual basis–the ideas –that underpin the normative understanding of digital technology and society, especially when it comes to disability. Hence our suggestion of rethinking digital citizenship as a potentially generative place to start.

In our research and conversations for the project, we found support for citizenship as well as concerns and criticisms. We have endeavoured to reflect all of these. We are also aware that given the limited scope of this exploratory study, there is much more work and analysis needed to better understand the nature of disability digital citizenship, its affordances (so to speak), its political implications, what it does not speak or respond to, and what kinds of exclusions and problems it brings.

If disability and digital citizenship is a work-in-progress, not to mention in the proving, at the present, it can still provide a horizon of expectations of how a society may better respond to digitalization in its latter phase. Moreover, in our research and conversations for the project it is clear that for the disability community broadly, this is a pressing issue. Specifically, discussions with research participants highlighted Concerns related to further exclusion and disadvantage should people with disability continue to be denied full and equitable inclusion in our increasingly digital society.

In that spirit, we suggest that If digital citizenship is to fulfill its potential and genuinely include Australians with disability we need to have a robust whole-of-society commitment to ameliorating the known digital barriers people with disability currently face and ensure that our future digital society includes all Australians, including people with disability.

Nationally, there are a number of foundational policy instruments already in place, that could be better leveraged, optimized, and joined-up:

the United Nations CRPD; policy and legislation such as the *Disability Discrimination Act*, communication laws, envisaged responses to emergent digital technology concerns across a wide front including AI and automation, data privacy, social media platforms; disability policy and provision, especially the Australian Disability Strategy and the National Disability Insurance Scheme–and in the wake of the Disability Royal Commission changes to key existing legislation (especially the *Disability Discrimination Act*) or new legislation (such as a general human rights bill, long proposed by some, if not in contemplation by the Federal

government at present); or both, the subject of dedicated overarching new laws and governmental responses (such as minister responsibility).

There are also already worthy existing initiatives in disability or other areas of technology and digital inclusion, such as Accessible Telecoms (an ACCAN project), Be Connected (the Federal government initiative aimed at building confidence, online skills and safety of older Australians), or First Nations Digital Inclusion plan.

These could be built on imaginatively as a framework to bring together industry, community, sector and institutional, and other interested groups and leaders, to work with government in an overdue transformation of digital technology for people with disability (something which could also advance progress for other groups).

So, some key elements in place to initiate a transformation of how Australians with disability can experience full and equal participation as digital citizens. However, in order for any such transformation to be successful we need to reset current and future public policy to focus on addressing disability digital citizenship holistically.

In attempting such a bold change, we also need to move away from the policy blindspot of disability being a homogenous population sector. Both within the disability community more broadly and also within separate disability cohorts there are a multitude of different abilities, barriers and interests.

As such, our approach to inclusive disability and digital citizenship needs to be founded upon this. Against this backdrop, our recommendations are as follows.

Recommendations

In line with the objectives of this research we make the following recommendations. We have grouped the recommendations in the three areas outlined in the research objectives: ***Research, Policy, Practice***.

Research

As outlined throughout the project, there is a need for clarification on both what is Digital Citizenship and more specifically, what is Disability Digital Citizenship. As such, our first research related recommendation is:

Recommendation 1: Research needs to be undertaken to develop a comprehensive definition of disability and digital citizenship.

This research will interrogate the following areas:

* Firstly, a better understanding of the implications for digital technology for citizenship of people with disabilities. this will provide a comprehensive understanding of the state-of-play of disability citizenship in contemporary Australia with a better understanding of the new dimensions and issues of digital citizenship–positive and negative.

* Secondly, what are the new aspects of citizenship for people with disabilities, and across the wider communities, that digital spaces and technologies can support? What of people with disabilities who have barriers to accessing full citizenship or citizenship at all, including refugees (Leung, 2018), asylum seekers, immigrants on range of visas and other residents who are not citizens, while also identifying the Rights and responsibilities of digital citizenship for people with disability.

* Thirdly, this research will provide a clear understanding of digital citizenship across the full range of groups and individuals with disabilities, especially intersectionalities, areas, communities, and individuals with multiple disadvantage, and identify the state-of-play across areas of cultural, political, and other areas of citizenship. It would ask: how do people with disabilities fare in relation to leveraging digital technology for participation?

Recommendation 2: Our second recommendation calls for research to identify and develop a better baseline definition and measure of digital inclusion for people with disability.

This research will endeavour to include those people who do not primarily identify as people with disability but do have impairments which limit their engagement in main-stream digital programs i.e. seniors. This will allow for Better statistical measuring & monitoring of digital access and inclusion. For example, the indicator in the monitoring of the Australian Disability Strategy has been a start but there are other aspects that are important measurements of digital inclusion, for example, we Need to see an ongoing decline in the ADII disability gap over time.

Recommendation 3: Our third recommendation in this section is for research to be undertaken that will identify the current levels of Digital literacy, ability, capability of people with disability.

This research will identify how well are currently digital and media literacy, training and education programs are meeting the needs of people with disabilities, especially those in locations (rural and remote communities) and contexts who have less capacity or who are under-served by available programs.

Policy

The project identified that while there exists a breadth of both Federal and State and Territory policies in place to increase community digital uptake, it has also identified a clear Need for a comprehensive national plan for digital inclusion of people with disability. Our recommendations related to policy initiatives include,

Recommendation 4: the adoption of a whole-of-government policy based on the foundational Closing the Gap Target 17.

Such a policy, with a clear outcomes framework with measurable targets and timeframes will allow for the optimisation of existing Australian disability digital policies. It will also provide a framework for new and targeted disability digital policies and disability Citizenship policies.

Practice

There are identified barriers for many people with disability in relation to digital inclusion, accessibility, affordability and capability. As such, we make the following recommendations which we believe will ameliorate many of these barriers.

Recommendation 5: All levels of Government implement programs to address digital access barriers for people with disability. These should include easy to access services and programs that are specific to the various needs of different disability cohorts.

Following this, our second Practice recommendation relates to the barriers of afford-

ability people with disability encounter when accessing the digital environment.

Recommendation 6: All levels of Government implement programs to remove affordability barriers. These programs need to include affordable network connectivity, both fixed and mobile.

For example, the Commonwealth government needs to implement a disability-Affordable nbn service, similar to ACCAN's No Australian Left Offline campaign which proposes a 50 mbps unlimited broadband service offered at a wholesale price of $20 per month by NBN Co.

Additional programs focused on the cost of equipment are also needed to alleviate the affordability barriers incurred as new technology is developed and older equipment becomes obsolete.

As highlighted by project participants removing the NDIS arbitrary ban on funding mainstream technology which for many people with disability acts as an alternative to expensive assistive technology would eliminate unnecessary financial obstacles for those people.

Our final recommendation relates to barriers created by limited digital capability. While the project participants acknowledged that there are many people with disability who are able to traverse the digital environment, there remain many capability barriers for a majority of people with disability.

As such we recommend,

Recommendation 7: There be a whole-of-society response to developing accessible digital training opportunities for people with disability.

This needs to be addressed through focused government programs, industry initiatives and by funding disability representative and consumer organisations to develop targeted training programs.

A key aspect of this recommendation is the need for government funding to underpin this digital skills uptake. For example, a funding program similar to the Government's approach to upskilling older Australians needs to be developed for the upskilling of people with disability.

Additionally, we recommend that governments at all levels fund place-based programs for specific disability cohort training. Moreover, business and digital industry participants a well place to co-design appropriate training programs to upskill people with disability. A successful example of such a program is Telstra's Tech Savvy Seniors program which has recently been expanded to include information focused on the needs of people with disability.

Finally, programs such as the Commonwealth funded Accessible Telecoms service, delivered by ACCAN, provides up-to-date information about digital communications technologies available in the Australian market that is suitable for people with disability and seniors.

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Select List of Legislation and Policy

Canada

Accessible Canada Act 2019

* Summary – https://www.canada.ca/en/employment-social-development/programs/accessible-canada/act-summary.html

* Full text - https://laws-lois.justice.gc.ca/eng/acts/A-0.6/

Canadian Radio-television and Telecommunications Commission Accessibility Reporting Regulations (SOR/2021-160)

* Full text - https://laws-lois.justice.gc.ca/eng/regulations/

Europe

European Accessibility Act 2019

* Overview - https://ec.europa.eu/social/main.jsp?catId=1202
* Full text - https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX-

The EU Artificial Intelligence Act 2024

* https://artificialintelligenceact.eu/

Australia

Federal

* National Disability Insurance Scheme Amendment (Getting the NDIS Back on Track No. 1) Act 2024 (Amending Act) - https://www.dss.gov.au/changes-to-the-ndis-act

* National Disability Insurance Scheme Amendment (Getting the NDIS Back on Track No 1) Bill 2024 – Corrected Explanatory Memorandum - https://www.dss.gov.au/sites/default/files/documents/04_2024/replacement-em-corrections.pdf

State

* ACT Government, Digital Strategy (2020) - https://www.cmtedd.act.gov.au/digital-strategy/home

* NSW Government, Beyond Digital (2019) - https://www.digital.nsw.gov.au/strategy

* Qld Government, Our Thriving Digital Future: 2023-2026 Action Plan - https://www.qld.gov.au/about/how-government-works/strategies-and-initiatives/digital-economy-strategy/action-plan

Standards

AS EN 301 549: 2016 (Accessibility requirements suitable for public procurement of ICT products and services) - https://www.standards.org.au/standards-catalogue/standard-details?designation=as-en-301-549-2016