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The role of public procurement in improving accessibility to ICT

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Abstract

Government bodies use public procurement policies and mechanisms to purchase ICT products and services. Some governments in OECD countries apply accessibility criteria when procuring ICT to improve access to their services and employment opportunities for people with disabilities. This may have a flow-on effect of greater availability of affordable and accessible ICT thus improving digital inclusion. This paper outlines research on comparative analysis of the situation in Australia with current policy in OECD countries. The research

Introduction

Government purchasing of Information and Communication Technologies (ICT) can influence the widespread availability of affordable and accessible ICTs for people with disabilities. Accessible ICTs are defined in this paper as:

information and communications technologies (ICTs) that enable people with disabilities to use functions provided by computer hardware and software on an equal basis with others (EU 2011a^[6]).^{1 [7]}

In general, increasing the availability of accessible ICTs is considered a positive step in removing barriers that prevent people with disabilities from participating equitably in society (Hawkins 2011^[8]; Waddell 2009^[9]) and thus increasing digital inclusion. Government purchasing, usually called public procurement, refers to the processes that governments engage in to purchase goods and services, mainly from the private sector, to enable them to carry out various functions (McCrudden 2007^[10]: 2-3). The primary aim for including accessibility criteria in ICT public procurement is to provide more equitable access to ICT office equipment such as phones and computer systems for public servants with disabilities. However, it can have flow-on effects for increased ICT accessibility to the broader community.^{2 [11]}

In order to better understand the context in which ICT government purchasing occurs it is useful to look more broadly at the topic of public procurement. Government, by virtue of its spending power, represents a significant player in the economy and can influence the availability and costs of goods and services. Government is able to do this by virtue of the various roles it plays as a:

- buyer of goods and services
- supplier of services and
- regulator (McCrudden 2007^[10]: 2; EU 2011b).

Each of these leads to the possibility that economies of scale may emerge from public procurement that will eventually flow to the general market.

The use of public procurement to shape social outcomes is not new (McCrudden 2007^[10]: 4). Recent developments in the European Union (EU) indicate that the use of public procurement to further social goals is still very much on the agenda there (EU 2010^[12]: 5). However, the use of public procurement to singularly create additional demand for accessible ICTs is relatively recent (Waddell 2009^[9]) and untested in the Australian context. By drawing on the experience of other countries, the authors investigated the use of ICT accessibility criteria in public procurement throughout OECD countries (Tibben & Astbrink 2012^[13]).^{3 [14]} In addition to the 86-page report of this research, an advocacy toolkit was developed for use by disability organisations.

The paper therefore summarises key parts of this research. It begins by briefly explaining the research design. The paper then moves on to reporting the findings of the comparisons made between OECD countries in their use of ICT accessibility criteria in public procurement. In order to provide a more informed context in which to consider the Australian case, the paper reports on key parts of in-depth studies of selected cases as well as commentary from experts. After providing a summary of ICT accessibility provisions in public procurement in Australia the paper details the outcomes of focus group research that drew on the knowledge of members from key organisations that represent the interests of people with disabilities. The paper concludes with a discussion that distils the major research findings and recommendations from the research for Australian governments.

Research design

A mixed methods research design was employed to collect up-to-date information about accessibility in ICT government purchasing in OECD countries including Australia. Four principal methods were applied to the research design: systematic review (Petticrew and Roberts 2006)^[15]; benchmarking (Wainwright et al. 2005^[16]; Andersen et al. 2008^[17]); case study (Creswell 1998^[18]; Yin 2009^[19]); and focus groups (Barbour and Kitzinger 2001^[20]).

The systematic review phase of the research was designed to identify and summarise key English language sources from OECD member countries. These were analysed using criteria that enabled countries to be benchmarked in their use of ICT accessibility criteria in public procurement. This part of the research, in turn, identified cases for in-depth case study analysis. Cases were chosen on the basis of their learning potential. Diverse cases were summarised to provide a comprehensive understanding of ICT accessibility criteria and the different ways in which they were applied.

In order to obtain the most in-depth understanding of the Australian case both focus group research and interviews were used to complement the literature search. The experiences of people with disabilities in obtaining appropriate ICT workplace modifications were explored using focus groups made up of people with disabilities and representatives from disability organisations in Australia. Interviews were conducted with key stakeholders from government and industry.

The study

Benchmarking of OECD countries

Benchmarking was undertaken to provide a global perspective on the ways ICT accessibility criteria are applied to the purchase of ICTs by national governments that are members of the OECD. ICT accessibility policies from these countries were systematically reviewed in order to determine key attributes of each. Information could not be obtained from all OECD countries. Information searches for Chile and Mexico yielded insufficient information to reasonably include these two countries in the benchmarking.

Table 1 summarises the findings. The findings include the monitoring mechanisms, as this has a significant bearing on the application of accessibility criteria in public procurement. It can be seen from Table 1 that only two countries, the USA and Japan, were found to have comprehensive accessibility criteria that are mandatory in public procurement. Comprehensive accessibility criteria indicate that detailed standards were used. In the case of the USA, the application of these laws extend only to federal authorities while in Japan it appears that all levels of government are required to apply these laws. Further, it can be seen that the monitoring of the application of these laws yields two different scenarios. In the case of the USA, the use of an online procurement system called the *Buy Accessible Wizard* enables ICT purchases by federal government authorities to be tracked and checked. In the case of Japan, it is not possible to find an official mechanism for monitoring compliance with their procurement laws. Indeed, Yamada (2011) ^[21] comments that the Japanese market is flooded with inaccessible ICTs and related services as a consequence.

The second category of ICT accessibility criteria includes more countries: Italy, Norway, Sweden and Spain. ICT accessibility criteria in these instances were not prescribed by detailed standards or criteria but were more generally described. By way of example, Spain and Italy have broadly followed the Section 508 provisions but have not adopted the standards in their entirety. Norway has used the principles of universal design to describe ICT accessibility criteria. In Sweden's case, ICT accessibility concepts are laid down in equal opportunity law. These countries have also chosen different means by which to monitor compliance with these laws. In Italy, monitoring is the responsibility of equal opportunity authorities. In the case of Sweden and Norway, public administration authorities are responsible for monitoring the application of accessibility criteria in public procurement. In the case of Spain, it was not possible to find evidence of monitoring.

ICT accessibility criteria *comprehensively described* in public procurement law

External monitoring regime that makes a commitment to publish results	-
Internal monitoring regime that makes a commitment to publish results	-
Internal monitoring regime ? but no commitment to publish results found	USA
Evidence of monitoring regime was not found	Japan

ICT accessibility criteria *broadly described* in public procurement law

External monitoring regime that makes a commitment to publish results	-
Internal monitoring regime that makes a commitment to publish results	Italy, Norway, Sweden
Internal monitoring regime ? but no commitment to publish results found	-
Evidence of monitoring regime was not found	Spain

ICT accessibility criteria *acknowledged* in public procurement law

Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Luxembourg, Netherlands, Poland, Portugal, Slovakia, Slovenia, Switzerland, United Kingdom.

ICT accessibility criteria *NOT found* in public procurement law

Australia, Canada, Israel, Republic of Korea, New Zealand, Turkey

Table 1 - The application of ICT accessibility criteria in public procurement law within the OECD.

The third category of ICT accessibility criteria comprises countries in which ICT accessibility is merely acknowledged in public procurement. This category has the largest number of countries. This is primarily by virtue of a European Union (EU) Directive on Public Procurement issued in 2004 that has been adopted by EU member countries. EU Directive 2004/18/EC required EU member countries to adopt, along with other clauses, the following clause (29):

Contracting authorities should, whenever possible, lay down technical specifications so as to take into account accessibility criteria for people with disabilities or design for all users (EU 2004 ^[22]).

It is perhaps axiomatic that the absence of specific ICT accessibility requirements in procurement processes has not lead to a complementary need for monitoring of compliance. Therefore, there was little need to further categorise these countries on the basis of their monitoring mechanisms.

The countries that had not adopted ICT accessibility criteria in their public procurement laws were in the minority. Notably, Australia is found in this group. Some of these countries' governments have opted for voluntary strategies to encourage the use of accessibility criteria when procuring ICTs. The federal government in Canada has sponsored the development of an online toolkit designed to guide purchasers through procurement decisions that are based on ICT accessibility principles. However, the final decision to adopt such principles is left to individual federal departments (D'Aubin 2007 ^[23]). In the Republic of Korea, a set of national ICT accessibility standards have been developed but these are not mandatory in public procurement.

It is anticipated that the rankings of countries in Table 1 will change over the coming years, particularly in Europe, where considerable preparatory work has been undertaken to develop ICT accessibility standards for eventual implementation.

In the course of the research it became obvious that web accessibility criteria had been applied in many countries (Tibben & Astbrink 2012 ^[13]: 18-19). This was seen in the variety of ways that web accessibility guidelines have been codified in administrative regulations (particularly e-Government strategies) as well as equal opportunity law (see Table 2).

External monitoring regime that makes a commitment to publish results

France, Germany, Netherlands, Switzerland

Internal monitoring regime that makes a commitment to publish results

Austria, Czech Republic, Denmark, Germany, Hungary, Ireland, Italy, Republic of Korea, Norway, Portugal, Slovakia, Sweden

Internal monitoring regime ? but no commitment to publish results found

Australia, Canada, Greece, Iceland, New Zealand, Slovenia, United Kingdom

Evidence of monitoring regime was not found

Estonia, Luxembourg, Spain

Web accessibility criteria NOT found

Belgium, Finland, Israel, Poland, Turkey

Table 2 - Web accessibility criteria described in other areas of law

It is encouraging to note that the majority of countries have embraced web accessibility standards largely adopted from W3C's Web Content Accessibility Guidelines (WCAG) 2.0. However, web accessibility criteria are but a limited subset of the full range of criteria required for ICT that are used by governments (and the private sector).

International case studies

There are a number of challenges that make the mandatory adoption of accessibility criteria when purchasing ICTs (or related services) less than straightforward. The in-depth study of contrasting cases provided a more nuanced appreciation of these challenges in the different approaches countries had taken to ICT accessibility criteria.

The United States is still considered a pre-eminent example of a country that has legally enforceable ICT accessibility standards as reflected in their so-called Section 508 legislation. The relevant legislation from which Section 508 is drawn is the Rehabilitation Act of 1973. In 1998, amendments to Section 508 saw the creation of a set of enforceable accessibility standards that were embedded into federal procurement regulations in 2001 (Fotopolus 2006 ^[24], 98).

In 2006, the realisation that Section 508 standards were being challenged by new technologies led to a review called the 'Section 508 Refresh'. This was done by the US-government supported Telecommunications and Electronic and Information Technology Advisory Committee (TEITAC). TEITAC's brief was to review and update the standards that underpin both Section 508 of the Rehabilitation Act and Section 255 of the Telecommunications Act 1996. (Section 255 of the 1996 Telecommunications Act relates to accessible telecommunications equipment for people with disabilities). TEITAC also considered new and converging technologies. These included:

- self-service machines and kiosks
- the growing market of gesture-based interfaces, such as touch screens
- the emerging trend in digital or biometric identification as an alternative to password protection
- hand-held devices and access for people with limited dexterity and refreshable Braille
- access for people with cognitive disabilities

Another significant change that TEITAC made was ensuring that standards better address rapid technological changes. The Committee moved from specific product categories to product characteristics. This means that an Apple iPhone is not forced into a category such as mobile phone, computer or PDA but is described by characteristics that have accessibility requirements attached to them (Maguire 2008 ^[25]).

The compliance regime of Section 508, combined with the buying power of the U.S. Federal Government, are compelling factors that manufacturers respond to. Recent comments from US manufacturers suggest that they appreciate the greater certainty that Section 508 accessibility criteria provide (COAT 2012 ^[26]).

The Business Taskforce for Accessible Technology (BTAT) in the United Kingdom has promoted ICT accessibility criteria as a key component of future productivity. The business benefits that they cite are improved interactions with new and existing customers, greater loyalty and productivity from employees, improved business processes within the organisation and improved financial outcomes (Ashington 2009 ^[27]). Support of the BTAT Accessible Technology Charter from companies such as Cisco, Microsoft, SAP, Oracle and Logica indicates the level of support for Charter features such as accessibility in procurement practices. Notably, the taskforce is responsible for developing a toolkit that enables businesses to assess their level of accessibility readiness through an Accessibility Maturity Model.

The experience from the European Union is one that favours the introduction of ICT accessibility criteria in public procurement across member countries. The fragmentation of markets that can occur because of multiple standards and the resultant inefficiencies is one driver for the adoption of Europe-wide ICT accessibility criteria (EU 2011b ^[28]). The EU's Mandate 376 has directed European standards bodies to investigate the development of a detailed standards framework that can be applied in public procurement (EU 2005 ^[29]). This is to be harmonised with Section 508 standards as much as possible. The European Accessibility Act is under consideration by the EU and this may have an impact on the adoption of ICT accessibility criteria in future (EU 2011b ^[28]).

The case studies detail the benefits of including mandatory accessibility criteria in public procurement policy and found that voluntary accessibility criteria did not produce similar effects to mandatory criteria (Tibben & Astbrink 2012 ^[13]: 64-68). Even in cases where legislative force underpinned ICT accessibility, compliance was found wanting because monitoring and sanctions were inadequate (Yamada 2011 ^[21]; NDA 2009 ^[30]). It is important to note that mandatory accessibility criteria refers to a requirement by government procurement officers to incorporate these criteria into purchasing requests for tender. It does not mean that companies are required to meet all the criteria. However, meeting more criteria provides them with a sharper competitive edge.

The report argues that applying mandatory accessibility criteria in ICT purchasing signals the government's commitment to improving equality for people with disabilities. As an employer, many of the hurdles that currently exist in making one-off adjustments become less important as the technology and techniques that enable greater accessibility become mainstream. This enables employers to recruit from a wider pool of potential employees and better recognises the skills and knowledge individuals bring to the workplace. Disability Discrimination Commissioner Graeme Innes (2011) ^[31] describes this as not only a beneficial outcome for people with disabilities but also economically advantageous to the public and private sectors.

Focus on Australia

Australia is grouped with countries that do not make specific reference to accessibility criteria for ICTs in their public procurement procedures.

It is in the area of web accessibility that Australia has taken more tangible steps. The Web Accessibility National Transition Strategy requires Federal Government websites to conform to the requirements of WCAG 2.0. The timetable for compliance has been set for W3C level A compliance by the end of 2012 and level AA by the end of 2014.⁴ ^[32] As discussed previously, Australia is not unique in limiting its efforts to just web accessibility. The danger exists that assumptions may be made about the sufficiency of web accessibility initiatives. Some people may assume that the coverage of web accessibility guidelines extends to all computing and telecommunications hardware and software - which it does not.

The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) exemplifies a rights-based approach to improving equality for people with disabilities. Australia ratified the Convention on 17 July 2008 and ratified the Optional Protocol of the UNCRPD on 21 August 2009. This obligates Australia to put in place legislation to promote equality, to eradicate areas of discrimination, to promote awareness of these issues through training and research and to consult with and involve people with disabilities in developing legislation and policies. The primary legislative instrument that seeks to give legal effect to Australia's commitment to the UNCRPD is the Disability Discrimination Act 1992 (DDA), which is administered by the Australian Human Rights Commission. The DDA, among other things, 'protects against unlawful discrimination of people with disability in the workplace' (HREOC 2005 ^[33]: 31).

The Australian Government has been criticised for its poor record in employing people with disabilities (Dunlevy 2011 ^[34]; ADDE 2012 ^[35]). The Australian Public Service (APSC) Commissioner's Statistical Bulletin shows employment of people with a disability in the Australian Public Service has dropped from a high of 5.5 per cent in 1996, to 3.1 per cent in 2010 (APSC 2010 ^[36]).

Focus group research carried out as part of this research was designed to capture information about the experiences of people with disabilities when seeking employment and when in employment. While the focus was not exclusively on those who had worked for the Australian Public Service, the accounts of focus group participants were illuminating for the frustration that many had experienced. As one participant stated:

?good people leave the public service because they are demoralised ? not getting support for equipment, there is inaccessible software and promises to change work practices which do not occur.?

Other stories from participants were consistent with this theme. One person was dismayed to discover that there was a departmental policy disallowing access to Skype that she used on a regular basis. Another focus group participant complained that IT support staff were not conversant with the technicalities of their assistive technology software. Specific mention was made of delays in the installation of screen reading software because there were issues that were related to the software?s need to traverse the department?s firewall. The latter example suggests that there has been some breakdown in ICT systems management. Under the Information Technology Infrastructure Library (ITIL), which is the information technology management regime in place within Federal agencies, all software (including assistive technology) is required to be tested with other departmental systems for compatibility as a matter of course. It appears that the isolated and one-off nature of reasonable adjustments has not led to the kind of expertise development required to adequately manage assistive technologies for people with disabilities.

The theme of insufficient technical expertise in relation to assistive technologies was also apparent when focus group participants spoke about their experience with reasonable adjustment interventions. JobAccess is a government agency that is responsible for assessing the needs for workplace modification and specialised equipment when people with disabilities have been successful in winning a position.^{5 [37]} While it was agreed that the process of obtaining workplace modifications has improved considerably over the past few years, there are still delays in getting the needed equipment. Often employers did not start the purchasing process until after the new employee had commenced work even though it was possible to do so earlier. A focus group participant stated that people still needed to be good at promoting their need for workplace modifications to JobAccess. In many cases, an employee with a disability may need to wait for up to a month before the workplace modifications are in place. This is because of the assessment, purchase and installation time frames.

In summary, the focus group outcomes indicate that the transition to employment could be improved through IT policies and reasonable adjustments interventions informed by improved technical knowledge of assistive technologies. Given that the experience of a transition to a new job is stressful for all, initiatives in this area would reduce inequities that people with disabilities face. Once in employment, the benefits of better informed IT policies will enable people with disabilities to effectively do their work.

The issue of ICT accessibility has been given renewed attention in the Federal Government?s National Disability Strategy (NDS) (Council of Australian Governments 2011 [38]). The first section of the NDS relates to inclusive and accessible communities. The importance of ICTs is acknowledged in Policy Direction 5 and the promotion of the principles of Universal Design in procurement is listed as an area for future action.

The National Disability Insurance Scheme represents a logical vehicle by which the benefits of accessible ICTs can be realised. While the emphasis of this research has been on the Australian Government, ultimately all public service agencies and private sector organisations should adopt procurement policies that make the purchase of accessible ICTs the norm. The removal of barriers to information access and employment that are promulgated by inadequately provisioned ICTs will provide a significant improvement in the lives of people with disabilities that are consistent with Australia's ratification of the UNCRPD.

Discussion ? Plotting a path forward

The basic rationale for introducing accessibility criteria into the public procurement of ICTs centres on the bargaining power of governments (Yamada 2007 ^[39]). As manufacturers respond to the demand from Government for more accessible ICT products, these products will then become more broadly available thereby the price of accessible ICTs is reasoned to fall thus increasing affordability to the general community. While this reasoning intuitively makes sense, it is also supported by innovation theory (Edler and Georghiou 2007 ^[40]; Edler et al. 2005) ^[41].

The commercial impetus for innovation in accessible ICTs will increase significantly if accessibility standards are agreed upon in major markets. Australia is a net importer of ICT and does not have a strong background in ICT manufacturing (ACS 2010 ^[42]). In being able to piggyback on the efforts of the United States, Japan or countries in the EU, economies of scale and improved knowledge development will be extended to Australia with its relatively small population base. The only way that this outcome can be guaranteed is if Australia adopts accessibility criteria in its purchasing arrangements. Otherwise, Australia may find itself in the invidious position of becoming a dumping ground for ICTs that are non-compliant with the requirements of these other countries.

The standards-setting work in the USA, Japan, the Republic of Korea, and the EU is a rich source of knowledge that is available for use in Australia. Given the economies of scale that each of these countries has in manufactured ICT products (as well as Australia's reliance on ICT imports) it makes sense for Australia to benefit from the achievements of these other countries. However, the research suggests a number of qualifications to this proposal.

Implementing a policy for the inclusion of mandatory ICT accessibility criteria in public procurement will present some logistical challenges. Yamada (2007, p. 7 ^[39]) describes it as the tension between setting broad functional criteria as opposed to detailed quantitative criteria. Broad functional criteria challenge the norms of public procurement procedures that rely on detailed specifications to enable comparisons to be made between competing tenders. Thoren (2007) ^[43] states that mainstreaming of ICT accessibility criteria in public procurement should recognise the need for dialogue between government, business and people with disabilities to address questions as they arise. Sweden's use of 'framework agreements' seeks to achieve this by formalising dialogue and negotiation that broadens the opportunities for information exchange between key actors beyond the constrained nature of competitive tendering processes.

Ignorance of accessible products and their potential was a key finding of the research. The task of educating stakeholders (such as designers, vendors, government purchasing officers, IT support staff) about the technicalities of accessibility is made difficult by the absence of training in this area. In much the same way that the US Section 508 standards have led to opportunities for training providers to address this knowledge deficit in the USA, governments in Australia can similarly provide strong incentives for training organisations to provide tuition in ICT accessibility and universal design. This will encourage an understanding of the role of accessible ICT in improving digital inclusion.

In recommending a strategy that builds on the work of other countries, it is assumed that Australian experts maintain contact with the progress of standards development overseas so that latest improvements are localised in a timely and efficient manner. Indeed, the specialised nature of ICT accessibility standards suggests that this should not be left up to interested individuals to pursue but should be developed as a formal initiative sponsored by Government. Disability advocacy groups must play an integral role in advising their members about ICT accessibility criteria in public procurement (Goggin and Newell 2000 ^[44]). With an informed membership, scrutiny of governments at all levels in Australia as they address accessibility criteria in ICTs will increase. Breaches will be identified more readily thereby placing pressure on the public and private sectors to maintain higher standards of accessibility in ICTs.

Accessibility criteria in public procurement of ICTs strengthen the government's commitment to current and prospective employees in the public service. The experience from the UK suggests that the benefits extend beyond people with disabilities to all staff where there is a visible commitment to supporting individuals and the attributes they bring to the workplace (Ashington 2009 ^[27]). Given the role that the Federal Government plays as a model employer in the Australian context, its policies in relation to the provision of accessible ICTs for employees with disabilities are significant in providing leadership to other government jurisdictions and the private sector. The new National Disability Insurance Agency could act as a role model in accessible workplace practices including the requirement that ICT being purchased by the Agency has appropriate accessibility features.

Conclusion

Paralympian Kurt Fearnley in his 2013 Australia Day Address shone a light on Australia's ? damning? record where 45% of people with disability live on or near the poverty line compared with 22% in OECD countries due in part to high unemployment rates. (Yamine 2013) ^[45].

It is anticipated that universal adoption of ICT accessibility criteria in procurement processes by the public and private sectors will help to increase employment opportunities for people with disability and should gradually lead to the widespread availability of accessible and affordable ICTs. The positive effects of such a strategy should mean increased digital inclusion for people with disability in many aspects of life. The time is ripe for further research that tests the propositions outlined in this paper.

While mandatory ICT accessibility criteria provide the strongest incentives for compliance, it is recognised that negotiated change with cooperation from industry at the various stages of implementation will be key to future success. Consistent and uniform accessibility criteria will provide greater certainty for vendors and manufacturers to invest and compete thereby creating a sustainable commercial context for the supply of accessible ICTs.

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Endnotes

1. The definition is adapted from the European Disability Strategy 2010-2020 which broadly defines accessibility as meaning that 'people with disabilities have access, on an equal basis with others, to the physical environment, transportation, information and communications including technologies and systems (ICT), and other facilities and services in line with Art. 9 of the UN Convention on the Rights of Persons with Disabilities (UNCRPD)' (EU 2011a [69]).

2. Narasimhan (2010) ^[70] provides a useful introductory text to the topic of ICT accessibility criteria. A web version is available, along with other relevant resources, from www.g3ict.org ^[71]
3. The funding for this study was provided by the Australian Communications Consumers Action Network (ACCAN) Grants Scheme.
4. For further information about AGIMO's work on web accessibility go to <http://www.finance.gov.au/publications/wcag-2-implementation/index.html> ^[72]
5. The JobAccess website, the government agency responsible for workplace modifications, can be found at <http://jobaccess.gov.au/Home/Home.aspx> ^[73] Retrieved 18 May 2012.

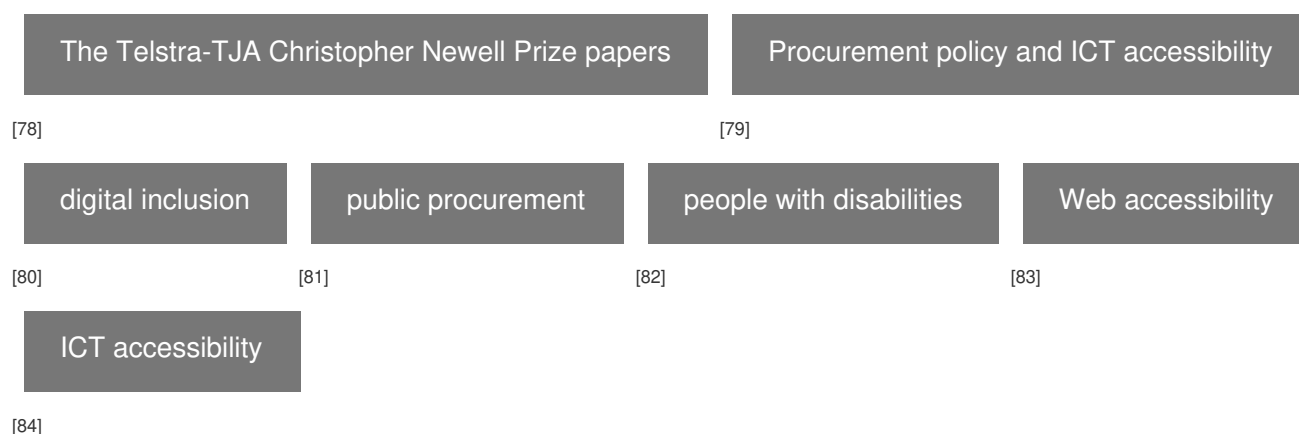
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